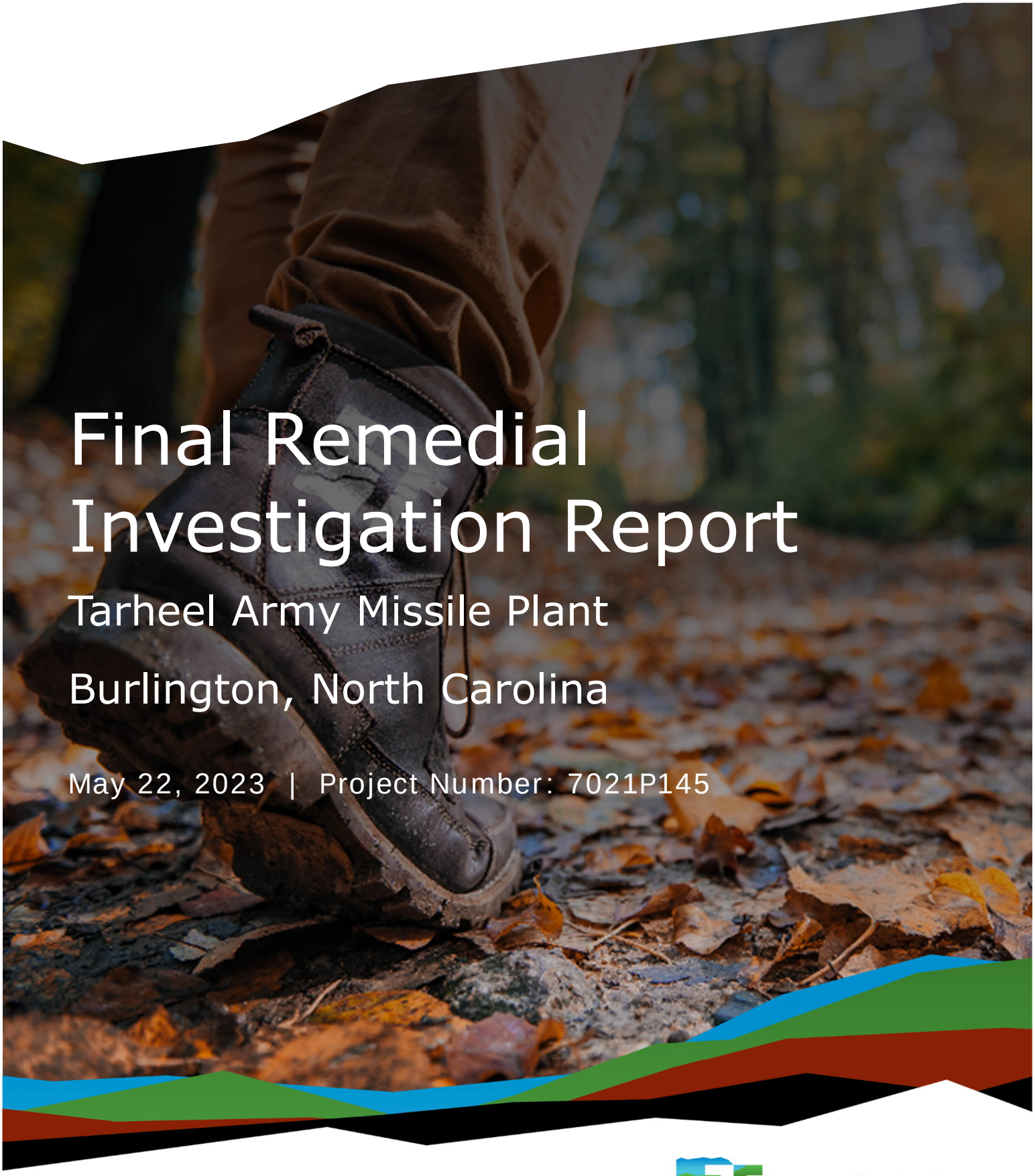

Final Remedial Investigation Report

Tarheel Army Missile Plant

Burlington, North Carolina

May 22, 2023 | Project Number: 7021P145

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Final Remedial Investigation Report

Tarheel Army Missile Plant, Burlington, North Carolina

USEPA ID: NC7210020544

May 22, 2023 | Project No: 7021P145

Prepared By:

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Terracon Consultants, Inc. is licensed to practice geology and engineering in North Carolina. The certification numbers of the corporation are C-367 and F-0869, respectively.

Prepared for:

U.S. Army Corps of Engineers
U.S. Army Environmental Command

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May 22, 2023

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RE: Remedial Investigation Report
Former Tarheel Army Missile Plant
204 N Graham Hopedale Road
Burlington, North Carolina 27217
USEPA ID: NC7210020544
Terracon Project No. 7021P145

Dear Ms. Thompson:

Northwind-Jacobs Joint Venture and Terracon Consultants, Inc. appreciates the opportunity to submit this Remedial Investigation Report to the U.S. Army Corps of Engineers (USACE) – Savannah District for the assessment activities conducted at the above-referenced Site during 2022. This document incorporates comments from the USACE and U.S. Army Environmental Command dated January 11, 2023. This document was finalized following receipt of approval and lack of comments by the North Carolina Department of Environmental Quality dated May 15, 2023. Please let us know if you have any questions or comments.

Sincerely,

Terracon Consultants, Inc.

Ethan Dinwiddie, LG (NC)
Sr. Staff Geologist

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Attachments: Final Remedial Investigation Report

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List of Acronyms

Acronym	Acronym Definition
1,1-DCA	1,1-Dichloroethane
1,1-DCE	1,1-Dichloroethene
1,1,1-TCA	1,1,1-Trichloroethane
1,2-DCA	1,2-Dichloroethane
2B Standards	NCAC 02B.0202 Water Quality Standards for Surface Waters
2L Standards	NCAC 02L Groundwater Quality Standards
3-D	3-Dimensional
A&D	A&D Environmental Services, Inc.
APP	Accident Prevention Plan
Arcadis	Arcadis U.S., Inc. and PIKA/Arcadis U.S., Inc.
AS/SVE	Air Sparging / Soil Vapor Extraction
AT&T	American Telephone and Telegraph Company
bls	Below Land Surface
CAP	Corrective Action Plan
cis-1,2-DCE	cis-1,2-Dichloroethene
COPC	Chemical of Potential Concern
COPEC	Chemicals of Potential Ecological Concern
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CSEM	Conceptual Site Exposure Model
CSM	Conceptual Site Model
CVOCs	Chlorinated Volatile Organic Compounds
CY	Cubic Yard
°C	Degrees Celsius
DO	Dissolved Oxygen
DoD	Department of Defense
DPT	Direct-Push Technology
DRO	Diesel Range Organics
DSCA	Dry-Cleaning Solvent Cleanup Act
EVS	Earth Volumetric Studio
°F	Degree Fahrenheit
f_{oc}	Fraction of organic carbon
FS	Feasibility Study
ft/day	Feet per day
GIS	Geographical Information System

Acronym	Acronym Definition
GRO	Gasoline Range Organics
HASP	Health and Safety Plan
HHRA	Human-Health Risk Assessment
IDW	Investigation-Derived Wastes
K_{oc}	Organic Carbon/Water Partitioning Coefficient
LOQ	Limit of Quantitation
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter
µg/L	Micrograms per liter
µS/cm	Microsiemens per centimeter
mV	MilliVolts
NCAC	North Carolina Administrative Code
NCDEQ	North Carolina Department of Environmental Quality
NCDENR	North Carolina Department of Environment and Natural Resources
NoRP	Notice of Residual Petroleum
Northwind JV	Northwind Jacobs JV
NTU	Nephelometric Turbidity Units
NWI	National Wetlands Inventory
ORP	Oxidation-Reduction Potential
Pace	Pace Analytical Services, LLC
PARCC	Precision, Accuracy, Representativeness, Completeness, and Comparability
Parratt-Wolff	Parratt-Wolff Inc
PCE	Tetrachloroethene
Piedmont	Piedmont Physiographic Province of North Carolina
PMP	Project Management Plan
PPE	Personal Protective Equipment
PSRGs	Preliminary Health Based Soil Remedial Goals
PVC	Polyvinyl Chloride
PWR	Partially-Weather Rock
RAGS	Risk Assessment Guidance for Superfund
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
RFP	Request for Proposal
RLS	Regional Land Surveyors, Inc.
RPS	Regional Probing Services
SLERA	Screening-Level Ecological Risk Assessment

Acronym	Acronym Definition
Solutions-IES	Solutions-IES, Inc.
SOPs	Standard Operating Procedures
SSHP	Site Safety and Health Plan
s.u.	Standard pH units
TAMP	Tarheel Army Missile Plant
SVOCs	Semi-volatile Organic Compounds
TCLP	Toxicity Characteristic Leaching Procedures
Terracon	Terracon Consultants, Inc.
TOC	Total Organic Carbon
TPH	Total Petroleum Hydrocarbons
TCE	Trichloroethene
UFP-QAPP	Uniform Federal Policy for Quality Assurance Project Plan
USACE	U.S. Army Corps of Engineers
USAEC	U.S. Army Environmental Command
USEPA	United States Environmental Protection Agency
USGS	U.S. Geological Survey
USGSA	United States General Services Administration
UST	Underground Storage Tank
VI-SGSLs	Vapor Intrusion Soil Gas Screening Levels
VOCs	Volatile Organic Compounds
WAP	Waste Accumulation Pad
Weston	Roy F. Weston, Inc.

1.0 Introduction

Northwind Jacobs JV (Northwind JV) and Terracon Consultants, Inc. (Terracon) prepared this Remedial Investigation (RI) Report for the U.S. Army Corps of Engineers (USACE) and the U.S. Army Environmental Command (USAEC) to investigate potential chemical impacts to environmental media associated with the former Tarheel Army Missile Plant (TAMP) site in Burlington, North Carolina (Figure 1). On April 13, 2021, the USACE issued Contract No. W912HN18D1006 to Northwind JV of Shelocta, Pennsylvania to conduct the RI activities. Northwind JV subcontracted with Terracon to jointly perform this work.

Restoration activities at the TAMP facility are primarily regulated under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), including the Superfund Amendments and Reauthorization Act. This RI Report generally follows the methodologies in the Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA (United States Environmental Protection Agency [USEPA], 1988). The RI Report includes descriptions of the physical characteristics of the Site, data collection methods, field and laboratory analytical results, and an updated Conceptual Site Model (CSM). It also includes a baseline human-health risk assessment (HHRA) in accordance with USEPA guidance documents (USEPA, 1989, 2004, 2009, 2014, 2018) and the North Carolina Department of Environmental Quality (NCDEQ) Risk Calculator (NCDEQ, 2021a and 2022a). We also developed a Screening-Level Ecological Risk Assessment (SLERA) in accordance with NCDEQ's (formerly the North Carolina Department of Environment and Natural Resources [NCDENR]) Guidelines for Performing Screening Level Ecological Risk Assessments within the North Carolina Division of Waste Management dated October 2003 (NCDENR, 2003).

This RI Report was based on the field findings and laboratory analyses of samples Terracon collected at the Site in 2022, supplemented with historical data obtained from multiple sources, including data obtained from the USACE, data collected by PIKA/Arcadis U.S., Inc. (Arcadis) from 2017 through 2019 (Arcadis, 2020), and downloads of historical documents from NCDEQ's Laserfiche WebLink (based on the references cited throughout this RI Report).

1.1 Purposes of the Remedial Investigation Report

This RI Report is in response to the USACE's solicitation Request for Task Order Proposal — Remedial Investigation (Request for Proposal [RFP]) for the Tarheel Army Missile Plant, Burlington, North Carolina dated September 30, 2020 (USACE, 2020). According to the RFP, the intent of the RI effort was to build on the previous RI effort to date, to update or provide current data, including completion of the delineation of contaminated media by investigating remaining data gaps and investigation of additional potential contamination sources based on historical site activities. Northwind JV and Terracon prepared a draft RI Work Plan dated October 26, 2021, using the Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP) format. After submittal of the document to the USACE and NCDEQ, and incorporation of their comments, Terracon prepared and finalized the UFP-QAPP Work Plan on February 18, 2022 (Northwind JV and Terracon, 2022). This final version of the UFP-QAPP Work Plan was the basis for Terracon's RI activities implemented at the Site from March to October 2022, which specified the collection and analysis of samples from the following environmental media: soil, groundwater, surface water, water in two subsurface tunnel entrances, and soil gas.

Another intent of the RI effort was to develop a HHRA and SLERA update following applicable state and federal guidance. Evaluation activities for these areas of practice are in Sections 6.1 and 6.2, and in Appendix A.

Northwind JV prepared several documents to guide the efficient and safe implementation of the RI activities, including:

- Project Management Plan (PMP) dated June 2021 (Northwind JV 2021a),
- Site Safety and Health Plan (SSHP) dated July 2021 (Northwind JV 2021b), and
- Accident Prevention Plan (APP) / Health and Safety Plan (HASP) dated July 2021 (Northwind JV 2021c)

The combined APP / HASP was completed using standard specifications, with the understanding that all field activities should avoid previously-identified unsafe structures, if the work posed unnecessary risks to workers.

1.2 Scope of Work

The following summarizes the activities Northwind JV and Terracon performed from March 2022 to October 2022 to complete the RI field activities presented in the final UFP-QAPP Work Plan (Northwind JV and Terracon, 2022):

- Collected surface water samples during each of three events in March (6 samples), July (6 samples), and October 2022 (7 samples) from the unnamed tributary to Service Creek, located west of the TAMP facility along Cobb Avenue. The purposes of these samples were to determine the concentrations and to define the extents of chemicals of potential concern (COPCs) in the unnamed tributary to Service Creek located west of the Site, and to provide more current datasets to assess the potential for harm to human health and ecological receptors.
- Collected 53 soil samples from 25 borings in the vicinity of Buildings 2 and 20 near the defined industrial areas that used chlorinated solvent cleaning machines, cleaning machines sumps, and the waste accumulation pad (WAP). The purposes of these samples were to determine the lateral and vertical extents of source mass(es) contributing to the COPCs dissolved in groundwater within and downgradient of these buildings. These data will be useful for follow-on Consultants and/or Contractors to conduct a Feasibility Study (FS) and to support the pending future remedial design activities of the primary source area(s) and proximal groundwater impacts.
- Collected seven grab groundwater samples from seven Geoprobe borings north, northwest, and west of the facility to define the potential extents of the dissolved-phase plume. Terracon used these data to refine the proposed locations of monitoring wells, which we installed in the vicinity of the Site in July 2022. We also used these temporary sample locations to identify potential preferential migration pathways west of the Site. We collected and analyzed nine soil samples to define background concentration for select metals. We also collected five

saturated soil samples for analysis of total organic carbon (TOC) to determine reasonable values for background fraction organic carbon (f_{oc}) of the aquifer matrix.

- Collected two water samples from the southern and northern entrances of the subsurface tunnel connecting Building 2 and Building 16. The purposes of these samples were to provide a preliminary evaluation of contamination levels of water in the tunnels, and to determine whether the tunnel represents a possible preferential migration pathway for COPCs to the north of the Site. Terracon used these data to refine the CSM (in Section 5), and to provide additional data for the HHRA and the SLERA.

- Installed two monitoring wells in the "shallow" saprolite aquifer and three monitoring wells in the "deep" bedrock aquifer to fill data gaps identified in the prior remedial investigations, and to expand our understanding on the depth and width of the primary groundwater migration pathways identified in the preliminary CSM presented in the UFP-QAPP Work Plan (Northwind JV and Terracon, 2022). Terracon used these data to refine the CSM (in Section 5), and to provide additional data for the HHRA and the SLERA.

- Collected depth to water measurements in 52 monitoring wells in August 2022 and October 2022. Terracon used these data to better understand the horizontal and vertical directions of groundwater flow and to estimate potential ranges of groundwater flow velocities beneath the Site.

- Collected groundwater samples in July and August 2022 from 23 shallow monitoring wells screened in the saprolite aquifer zone and from 12 deep monitoring wells screened in the bedrock aquifer. The purposes of these samples were to determine the concentrations and extents of COPCs in groundwater, and to provide a current dataset to assess the potential for harm to human health and ecological receptors. Terracon also used these data to estimate the potential ranges of COPC migration rates in saprolite and fractured bedrock beneath the Site.

- Developed a CSM to form a basis for defining the potential future remedial action objectives and for developing and implementing applicable remedial strategies in the future at the Site.

- Developed a HHRA to assess the potential risk to hypothetical human receptors posed by COPC-contaminated media at and downgradient of the Site.

- Developed a SLERA to assess the potential risk to hypothetical ecological receptors posed by COPC-contaminated surface water downgradient of the Site.

1.3 Report Organization

The subsequent sections of this report include the following:

- Section 2.0 includes descriptions of the Site Background, History, and Physical Setting of the Site, including brief discussions of the TAMP property's ownership history, physical setting, regional meteorology, geomorphology, geology, hydrogeology, previous remedial investigations and enforcement actions, and prior remediation activities.

- Section 3.0 describes the Investigative Methods that Terracon used in 2022 to conduct the RI field activities.
- Section 4.0 presents the Remedial Investigation Results.
- Section 5.0 discusses the Conceptual Site Model, including a discussion of the fate and transport mechanisms for the contaminant of concern, migration pathways, potential discharge points, and how potential human and/or ecological receptors might be exposed.
- Section 6.0 presents the Human Health and Screening-Level Ecological Risk Assessment conducted as part of this RI.
- Section 7.0 presents Terracon's Conclusions, Data-Gap Analysis, and Recommendations based on the findings presented herein.
- Section 8.0 presents the literature References used during the generation of this report.

2.0 Site Background, History, and Physical Setting

2.1 Background and Ownership History of the TAMP Parcel

The address of the TAMP facility is 204 Graham-Hopedale Road, Burlington, North Carolina (Figure 1). There are approximately 22 designated buildings on approximately 22 acres (USACE, 2020) within the city limits of Burlington, Alamance County, North Carolina (Figure 2). The property card (Parcel ID: 139757) and ownership history of the facility from the Alamance County Geographical Information System (GIS) system is in Appendix B. The prior owners of the facility (according to Alamance County GIS system portal) included:

- Central Park Burlington LLC (Purchased in May 2018) and is the current owner and operator of the Site.
- RDN Trust (Purchased in May 2018)
- Saucier Inc (Purchased in August 2013)
- Hopedale Investment LLC (Purchased in November 2004)
- U.S. Army Ordinance (Purchased in January 1959)
- United States of America (Purchased in July 1954)

Ownership information prior to 1954 was not available on the Alamance County GIS system portal.

According to Arcadis (2020), the TAMP facility was initially established in 1927 as a small textile manufacturing plant for the production of synthetic rayon fabric. These operations ceased upon closure of the plant in 1931. The property was then used as a storage facility. The Defense Plant Corporation acquired the property in 1942, and then leased the property to Fairchild Engines and Airplane Corporation from 1942 through 1944 to manufacture and test training aircraft for the U.S. Army Air Force. In 1944, Fairchild divested from the facility, and then Firestone Tire and Rubber Company (Firestone) occupied the facility. The specific operations of Firestone are not known with certainty, but presumably, they continued to manufacture components for military operations during World War II.

At the conclusion of World War II, the facility was identified as surplus property and then transferred to the United States General Services Administration (USGSA). Western Electric Company leased the plant from 1946 to 1958 to manufacture electronic equipment for commercial uses, and was a supplier for the U.S. Department of the Army. Manufacturing of electronic equipment for commercial/civilian uses ceased in 1951, and shifted to manufacturing of ground-based guidance systems, components, and the assembly of the U.S. Army's Nike missile systems.

The U.S. Army Aviation and Missile Command was assigned jurisdiction of facility in 1962, at which time, the facility was designated as the TAMP facility. American Telephone and Telegraph Company (AT&T) leased the property for the production and maintenance of defense-related electronic systems, until 1999 when Lucent Technologies, a divestiture of the former AT&T, took over operations at the facility.

In 2004, the U.S. Department of the Army/USGSA sold the property to Hopedale Investments, LLC (Appendix B), who used the property as a flea market for hospice (Arcadis, 2020). The property was sold again in 2013 to Saucier, Inc., to RDN Trust in 2018, and then to the current owner (Central Park Burlington LLC.) in 2018. Since that time, the property has been predominantly vacant, with pending plans to convert the facility to storage space in two of the facility's empty buildings.

The TAMP site located at 204 N. Graham-Hopedale Road (Parcel 139757) has known releases from underground storage tanks (USTs) associated with AT&T's former operations. In September 2007, Alcatel/Lucent completed and executed a Notice of Residual Petroleum (NoRP) for the property in response to a Notice of Regulatory Requirements for the TAMP property. More information is provided in Tables 1 and 2 regarding these, and other releases identified at the Site.

2.2 Ownership of Adjacent Properties

2.2.1 Adjacent Commercial Properties

Commercial properties are immediately adjacent to the west and south of the Site, and to the east across N. Graham Hopedale Road. A map of the surrounding properties is in Figure 3. The primary properties of interest with potential and/or suspected environmental histories due to their operations include:

- 201 N. Cobb Avenue (Parcel 139443) to the west of the TAMP facility. According to the facility's property card obtained from Alamance County GIS portal, the current building was built in 1987 (Appendix B). Former owners / operators of the property included: NS MPG INC, several entities of AT&T, and Lucent Technologies. Central Park Burlington LLC purchased this property in May 2018.

- 139 Homewood Avenue (Parcel 139434) to the west of the TAMP facility across N. Cobb Avenue. Terracon researched this facility in the Alamance County GIS System, NCDEQ Site Locator Tool (https://ncdenr.maps.arcgis.com/home/index.html), and inventories within NCDEQ Dry-Cleaning Solvent Cleanup Act (DSCA) Program, and no information was available for this parcel. However, on-line mapping tools refer to this facility as Elder Hosiery Mills, which developed and manufactured several heavyweight thermal socks for military use in conjunction with the Army Research Department (https://www.mapquest.com/us/north-carolina/elder-hosiery-mills-357999615). The presence or absence of environmental concerns at this property are not known, but could be a potential source of trichloroethene (TCE) and other chlorinated solvents previously detected in monitoring wells MW-122 and TAMP-MW-03 because both of the wells are:

    - hydraulically downgradient from the former Elder Hosiery Mills facility (Figure 3) and

    - hydraulically upgradient of areas in the unnamed tributary to Service Creek with known impacts from TCE and tetrachloroethene (PCE).

- Multiple Dry Cleaning City Directories sites, which NCDEQ designates as potential former dry cleaning facilities:

- 119 North Cobb Avenue (Parcel 139441)
- 130 North Graham-Hopedale Road / 1846 North Church Street (Parcel 139750)

- NCDEQ UST Program Sites:
  - 1726 / 1738 N. Church Street (Parcel 139753) - Jeffreys Paint and Hardware, Inc. associated with UST Active Facility #00-0- 0000003315. The property currently owned by RFW SHOP LLC and operated as a commercial garage.
  - 130 North Graham-Hopedale Road / 1846 North Church Street (Parcel 139750) – C.V. Exxon facility associated with UST Incident # 48753 and UST Active Facility #00-0-0000004122. The property is currently owned by Vrunda Family LLC and operated as a commercial gasoline station.
  - 274 N. Graham-Hopedale Road (Parcel 139790) - The Former Medical Center Pharmacy filed a NoRP and Perpetual Land-Use Restrictions for this property in April 2006 associated with UST Incident #20289.
  - 316 N. Graham-Hopedale Road (Parcel 139789) - Kernodle Clinic Easttown associated with UST Incident #44065. No additional information is available in NCDEQ's Laserfiche system for this incident.
  - 1612 Hilton Road (Parcel 139485) - Former Life Touch Studios associated with UST Incident #14854. This site received No Further Action status in August 1997.

- Existing NCDEQ Inactive Hazardous Sites Branch Inventory of Sites:
  - Northeast Corner of N. Church Street and North Graham-Hopedale Road (Parcel 147805). Groundwater & Environmental Services, Inc. prepared a Supplemental Phase 2 Environmental Site Assessment Report in December 2015, which identified low-level concentrations of several metals in soil and groundwater that exceeded regulatory standards. This property was entering into the NCDEQ's Brownfields Program site with the submittal of a Brownfields Property Application in January 2016, and a Brownfields Work Plan in 2016. No additional information is included in NCDEQ's Laserfiche system for this incident.

2.2.2 Adjacent Residential Properties

Residential properties border the northern property boundary of the Site along Hilton Road, and near the southeast corner of the intersection of Hilton Road and N. Cobb Avenue. A map of the surrounding properties is in Figure 3.

2.3 Physical Setting

Current land use on the TAMP facility includes commercial storage (i.e., characterized as commercial/industrial use). The physical setting for the on-property portions of the former TAMP facility is described as a former industrial complex that includes dilapidated buildings with leaky and

partially collapsed roofs. Portions of buildings are hazardous and not safe to enter due to the conditions of the structures, and the presence of underground tunnels and basements that do not have interior lighting, some of which are flooded. The exterior ground surfaces are comprised mostly of paved surfaces that limit the infiltration of run off from precipitation events. The former wastewater treatment facility (Buildings 29 and 30) has been partially demolished and the former basins have been filled in to reduce the potential risks to worker safety.

Land-use controls are referenced on the property deed (2004) that restrict:

- intrusive activities in areas with chemical impacts to soil,
- groundwater extraction,
- tampering with remedial equipment, and
- residential use without prior approval from NCDEQ.

Based on the City of Burlington's 2018 Sustainable Design Assistance Team grant design, the Site's potential future land use is as an industrial/commercial facility that includes areas for sensitive receptors (children's services and medical facilities). Also, the current property owner (Central Park Burlington, LLC) has advertised the property as a "mixed-use development" that could include multi-family residential units. Therefore, these future uses would include potential residential-exposure scenarios from a risk assessment evaluation perspective.

Potential receptors and exposure pathways evaluated herein (in Section 6.0) and/or by Arcadis (2020) include:

- Soil - Surface soil exposures are not suspected based on historic data (Arcadis, 2020).
- Groundwater – Receptor surveys (Sections 3.1 and 4.1) identified no potable wells within the general off-site radius of 1,500 feet.
- Groundwater discharge points include:
    - Surface water in the unnamed tributary to Service Creek,
    - Subsurface tunnels within the TAMP facility.
- Surface Water - The chlorinated solvent plume is known to discharge into the unnamed tributary to Service Creek located to the west of the Site along N. Cobb Avenue. Service Creek is approximately 0.9 miles north-northeast of the intersection of the unnamed tributary and Hilton Road. Chlorinated solvent concentrations in the unnamed tributary extend approximately 800 feet (or 0.15 miles) north of Hilton Road (i.e., slightly north of Vaughn Road) where concentrations of volatile organic compounds (VOCs) are reduced to less than laboratory detection limits. Relevant classifications for the unnamed tributary to Service Creek include:

- The National Wetlands Inventory (NWR) (2022) defines the tributary to Service Creek with Classification code R4SBC: Riverine (R), Intermittent (4), Streambed (SB) that Seasonally Floods (C).
- NCDEQ Division of Water Resources (2022) classifies Service Creek as a combined WS-V/NSW surface water body. Classification WS-V is defined as water supply sources for drinking, culinary, or food processing purposes where higher classifications (i.e., WS-I, II or III classifications) are not feasible. Surface water bodies with WS-V classifications generally are in moderately to highly developed watersheds or NCDEQ-designated Protected Areas. The NSW classification is defined as surface waters requiring additional nutrient management due to excessive growths of microscopic or macroscopic vegetation.

Terracon's opinion is the unnamed tributary to Service Creek is initially a "ditch" that primarily receives surface water run-off from two large culverts that extend from the south across N. Church Street and from a large culvert that extends west from the TAMP property. Based on the NWR (2022), the tributary is an intermittent stream, west of the site. At some unknown distance downgradient (i.e., to the north) the unnamed tributary to Service Creek transitions to a perennial stream.

- Vapor Intrusion – The potential for vapor intrusion exists for on-site buildings, as well as off-site residential properties along the northern and western property boundary.

2.4 Meteorological Information

The climatological classification of the site vicinity is humid subtropical. The normal (30-year average) annual rainfall near the site is 43.3 inches per year, with the highest rainfall amounts in spring to summer. The normal (30-year average) annual temperature near the Site of 60.7degree Fahrenheit (°F), with an average low in winter of 43°F and an average high in summer of 78.3 °F (National Oceanic & Atmospheric Administration, 2022).

2.5 Geomorphology

The Site lies within the Piedmont Physiographic Province (Piedmont) of North Carolina. Regional topography of the Piedmont generally consists of low rounded ridges and valleys that are underlain by varying depths of saprolite on crystalline bedrock, although isolated hills of more resistant crystalline rock are found across the region (Hack, 1982). The elevation of the Site ranges from approximately 590 feet to 610 feet above mean sea level (U.S. Geological Survey [USGS], 2019). The topography at the Site slopes primarily to the west and northwest, towards an unnamed tributary of Service Creek. Surficial drainage, including stormwater drainage from the Site, is collected by the unnamed tributary and flows north and northeast towards Service Creek and then into the Haw River.

2.6 Geology

The land surface within the Piedmont consists generally of clay-rich, unconsolidated material derived from in situ weathering of the underlying bedrock (Heath, 1984). A transition zone of partially-

weather rock (PWR) exists between the overlying saprolite and bedrock that generally grades from more weathered and fractured bedrock to less weather and fractured bedrock. According to the Geologic Map of North Carolina (Rhodes & Conrad, 1985), the Site is underlain by the Carolina Slate Belt. The specific rock units underlying the Site consist of late-Proterozoic to Cambrian-aged metamorphosed basaltic flows and tuffs (interbedded with felsic and intermediate metavolcanic rock) and metamorphosed granitic rock.

Mesozoic-age diabase dikes cross-cutting the metamorphic rocks and fractures of the host metamorphic rock are common in the region (Burt, et al., 1978). Diabase dikes and fractures are generally less resistant to weathering, indicating weaker areas of bedrock and therefore may create preferential groundwater pathways in the bedrock. In addition, susceptibility to weathering has created surficial expressions of these dikes and fractures as natural lineaments (Bradley, 2021). Natural lineaments in Chatham County (south and adjacent to Alamance County) and the immediate area surrounding the Site have been traced by the North Carolina Geological Survey through review of LiDAR imagery. The natural lineament traces generally trend southeast to northwest (Bradley, 2021; Bradley, 2022). Potential natural lineaments were not observed on the Site from this review; however, extensive development of the Site disturbed expressions of potential lineaments prior to collection of LiDAR imagery. Maps showing the general orientation and location of the traced lineaments in Chatham County and the immediate area surrounding the Site are in Appendix C.

Prior investigations (Weston, 1993b, 1993c, 1998) identified various lithologic units beneath the Site, including fill/reworked materials, saprolite/PWR, and fractured bedrock. The depths to these units vary across the Site. The upper layers (i.e., fill/reworked materials, saprolite) have eroded and the ground surface drops in elevation toward the west where these layers are mostly absent adjacent to the unnamed tributary to Service Creek.

2.7 Hydrogeology

The regional hydrogeology in a typical Piedmont setting consists of a regolith (i.e., soil and saprolite) and a bedrock zone (i.e., fractured rock). Precipitation, infiltration, and percolation recharge the regolith, which consists of the unconsolidated material above the bedrock that holds water within its pore spaces (i.e., primary porosity). Groundwater within the regolith generally flows parallel to the bedrock surface and recharges the bedrock zone that has secondary porosity features such as faults, fractures, and weathered zones to allow permeation and movement of water. There is also typically a transition zone of PWR between the regolith and bedrock zones that exhibits hydrogeologic properties of both the regolith and bedrock zones. Areas of thicker regolith and topographical regions consisting of surface depressions typically yield higher fractures possibility due to the increased weathering and erosion, and thicker zone of recharge to the underlying bedrock (Heath, 1984). In general, groundwater flow in the regolith and bedrock zones is influenced by surface topography and moves from topographic highs to topographic lows. Groundwater typically discharges to the surface through springs or seeps at topographic lows (e.g., valleys, stream channels) (Heath, 1983), such as the tributary to Service Creek.

Depth to groundwater in the monitoring well network at the Site and nearby properties is influenced by seasonal precipitation and depth of the monitoring wells. Generally, the depth to groundwater is greater in periods of low precipitation and in deeper wells screened in the bedrock. Depth to groundwater measurements in the monitoring well network since 2017 are presented in Table 3.

Based on depth to groundwater measurements collected from the monitoring well network, surficial and deep (bedrock) groundwater is estimated to flow northwest and west, and generally toward the unnamed tributary to Service Creek. Underground utilities and subsurface structures, such as the on-site tunnels and stormwater drainage culverts, may act as preferential flow pathways when they intersect the water table. The unnamed tributary to Service Creek likely acts as a local groundwater discharge zone for groundwater flow from the Site as evidenced by detections of COPCs in historical surface water samples, historical groundwater potentiometric maps, and surface topography (USACE, 2015). Potentiometric surface contours (Arcadis, 2020) for the saprolite and bedrock aquifer zones converge on the tributary to Service Creek from both the east and the west, suggesting it is a terminal discharge point for shallow and deeper groundwater.

Weston utilized aquifer slug tests and pump tests to estimate hydraulic conductivity of the regolith aquifer (i.e., saprolite and partially weathered rock) and the bedrock aquifer. For the regolith aquifer on the Site, aquifer tests were conducted in 1993 on MW-106 and MW-107 (Weston, 1993c). Weston reported the results of slug tests of MW-106 and MW-107 with an average hydraulic conductivity value of 7.62 feet per day (ft/day). Weston (1994) reported the results of an aquifer test using MW-107 as an extraction well, and four nearby observation wells. Based on this test, hydraulic conductivity values ranged from 1.96 ft/day to 6.52 ft/day with an average of 3.49 ft/day. For the bedrock aquifer, Weston (1998) conducted aquifer tests on MW-104, MW-110, MW-111, MW-112, and PZ-1 with hydraulic conductivity values ranging from 0.088 ft/day to 34 ft/day with an average of 1.33 ft/day.

2.8 Summary of Previous Remedial Investigations and Enforcement Actions

Table 1 provides an outline for the various phases of the remedial investigation activities conducted at the Site from 1998 through 2020. Figure 4 is a site map that presents existing monitoring wells locations, prior to Terracon's RI activities, as well as known and suspected source areas investigated during prior RI activities, and the locations of former USTs. The timeline in Table 1 provides names of authors of the primary investigation reports, including document titles, data of the report, and a summary of the primary findings from each report where known. Terracon emphasized the most important findings from each report using bold and underlined text. Select tables and figures from historical investigation reports are included in Appendix D. The findings relevant to this RI Report include:

- The Shallow Subsurface Investigation of Sump and Drain Line Areas Report dated August 1993 by Roy F. Weston, Inc. (1993a) investigated three sumps and drain lines associated with the WAP building. Elevated concentrations of PCE (up to 3,000 milligrams per kilogram [mg/kg]) were identified in the samples beneath the WAP. Concentrations of chromium, lead, and zinc were slightly elevated as compared to background soil samples concentrations. The report concluded that metals had not been released to soils at high concentrations in this portion of the Site.

- The Comprehensive Site Assessment Subsurface Soil and Groundwater Investigation at the Waste Accumulation Pad and Underground Storage Tank Areas dated August 26, 1993 by Weston (1993c) presented investigations conducted around the former USTs and the WAP. The USTs appeared to have released petroleum hydrocarbons, including benzene, toluene,

ethylbenzene and xylenes to surrounding soils in the near vicinity of the Site. Total petroleum hydrocarbons (TPH) concentrations exceeded the allowable limits directly beneath the former USTs. Elevated concentrations of COPCs, including PCE and TCE, were present in soil and groundwater in the immediate vicinity and downgradient of the WAP at concentrations that exceeded soil remediation goals and groundwater quality standards. Weston recommended that AT&T (the client at the time of the report) proceed with the development of a Corrective Action Plan (CAP) in accordance with regulatory correspondence.

- A Preliminary Assessment/Site Inspection dated June 1, 1994 by B&V Waste Science and Technology Corp. (1994) collected environmental samples from the Site in December 1991, January 1992, and October 1993 to help determine disposal methods for various storage tanks, air pollution control equipment, and electrical transformers at the TAMP facility. Primary findings included:
  - Subsurface Soils - historical investigations determined that impacted soils were present at the facility.
  - Beryllium was the only constituent detected in the soil samples above the proposed Resource Conservation and Recovery Act (RCRA) Corrective Action Level (for beryllium is 0.2 mg/kg). However, all of the beryllium concentrations in the soil samples were within the range of regional background concentrations in the southeastern United States.
  - Groundwater - Noted multiple exceedances of the 15A North Carolina Administrative Code (NCAC) 02L Groundwater Quality Standards (2L Standards) (NCDEQ, 2021b).
  - Surface Water - exceedances were noted for zinc and VOCs.
- Weston Solutions, Inc. (2013) conducted semi-annual groundwater monitoring at the Site from 1995 through 2004, at which time the USAEC assumed the monitoring responsibilities while it conducted an in situ bioremediation pilot test. Weston performed additional semi-annual monitoring in May 2001 to October 2001 and in 2011.
- USACE personnel collected samples from twenty-two existing monitoring wells and one temporary screen point within the TAMP boundary in August 2014. Samples were also collected from two temporary screen points, one well, and three surface water locations downgradient of TAMP to evaluate potential off-site migration. USACE crews attempted to install eight screen points but only encountered groundwater in two of them. In August 2015, USACE personnel installed six monitoring wells (TAMP-MW-1 through TAMP-MW-6) west of the TAMP boundary and collected samples from them. Two monitoring wells (TAMP-MW-7 and TAMP-MW-8) were installed north of the TAMP boundary in February 2016 and sampled in May 2016. The primary conclusions from this work included:
  - COPC concentrations persisted past the TAMP boundary and appeared to migrate off the Site to the west-northwest where the groundwater encountered the unnamed tributary to Service Creek. The USACE stated that the effluent stream acts as a groundwater discharge area and flow boundary and considered it improbable that the analytes could migrate across the boundary and contaminate the area west of the stream. The fact that

a detection above regulatory standards was found in the groundwater west of the stream suggested the possibility of other sources of contamination.

- COPCs might be migrating along a preferential flow path towards the northeast corner of the property, possibly due to the north-south oriented tunnel that exists between Buildings 2 and 16. The tunnel has possibly created a preferential flow path allowing contaminants to move from the source to the northeast corner before migrating off the Site in the directions of groundwater flow.

- In the Evaluation of Physical Hazards at the Tarheel Army Missile Plant Site dated March 15, 2017, the North Carolina Department of Health and Human Services (2017), Department of Public Health's recommended:
  - The property owner should immediately restrict access to the Site to only those who are involved in the site investigations or remedial activities. This included repairing any breaches in buildings, doors, and perimeter fencing.
  - The property owner should immediately restrict remedial workers' access to the on-site buildings until roofs and other potentially falling materials were either stabilized or removed. Due to the age of the buildings on site, the presence of asbestos in building materials should be evaluated prior to any demolition or remodel work.
  - The property owner posted signs alerting remedial workers to physical hazards on Site and appropriate personal protective equipment (PPE) needed on Site. Signs should be maintained until physical hazards are removed.
  - Remedial workers at the Site wear appropriate PPE to protect themselves from physical hazards on the Site.

- Based on the PIKA-Arcadis' (2020) draft Remedial Investigation Report dated April 2020, Arcadis performed three water-level gauging events in June 2017, August 2017, and February 2019, a baseline groundwater/surface water sampling in June 2017, installed 17 new monitoring wells (MW-119 through MW-136, excluding MW-125), and collected soil vapor samples in February and April 2019. PIKA-Arcadis' recommendations included:
  - The investigation and delineation of known and potential on-site source areas prior to performing a feasibility study;
  - Additional investigation related to off-site vapor intrusion was not recommended unless shallow groundwater VOC concentrations increase significantly;
  - The shallow (saprolite) and deep (bedrock) groundwater plumes have been predominantly delineated except for the following areas: to the west in shallow (saprolite), to the west in deep (bedrock) groundwater, and to the northwest in bedrock groundwater.

2.9 Summary of Previous Remedial Actions

Table 2 provides an outline for the various phases of remediation activities conducted at the Site from 1993 through 2013. Figure 2 is a site map that presents known and suspected source areas, locations of former USTs, and locations of former remediation areas. This timeline is organized similar to Table 1, including the emphasis of important findings using bold and underlined text. Select tables and figures from historical remedial action reports are included in Appendix E. Finding relevant to this RI Report include:

- Removal and closure of various UST systems including:
  - Removal of UST #9 (110-gallon gasoline tank) in 1993 (Weston, 1993a).
  - Removal of USTs #5, #6, and #7 by in January 1995 (Weston, 1995a). On March 2, 1995, approximately 316 tons of petroleum contaminated soil were transported from the TAMP to Stalite Environmental, Inc., in Gold Hill, North Carolina for thermal reclamation. TPH - gasoline range organics (GRO) were present in the samples at high concentrations. The lateral extents of impacted soil had been delineated. Partial remediation of the Site had been implemented through the removal of impacted soils to depths of approximately 12 feet bls. No sheens or free product were visible in samples collected from a well installed in the UST impoundment.
  - Removal of USTs #3 and #8 by Weston in May 1995 (Weston, 1995b). Weston prepared the Initial Abatement Measures Report to address the releases of petroleum hydrocarbons to the environment. The release was associated with former UST #8 and the supply piping that connected UST #3 to a day tank located inside Building number 1A. No free product and no sheen were observed on the surface of the groundwater in borings and wells located in the vicinity of the former UST 3 vent pipe or former UST 8. The TPH-diesel range organics (DRO) and TPH-GRO concentrations in soil at the former UST 3 site did not exceed the Final TPH Cleanup levels. Thus, no further investigation was warranted, and no remediation of soil or groundwater was recommended for UST 3. At UST 8, TPH-DRO appeared to be generally limited in the immediate vicinity of the UST #8 excavation, but also extended to at least 45 feet north of UST #8.
- An air sparging / soil vapor extraction (AS/SVE) system was installed in the Fall of 1995, prior to regulatory approval of a CAP. Initially, the analytical data presented minimal decreases in VOC concentrations in the soil and groundwater; however, aromatic VOCs were decreasing in concentration in the soil and groundwater. Weston conducted AS/SVE operations from 1996 through 2004 Weston (2013). The AS/SVE system was temporarily turned off in 2004 to facilitate the anaerobic bioremediation pilot study.
- In 1998 and 1999, Weston designed and constructed a groundwater pump and treatment extraction system, which operated from 1999 to the Summer of 2013. The treatment system extracted groundwater from MW-104, MW-110, MW-111, and MW-112. The water passed through an air stripper platform in Building No. 7 before being discharged to the sanitary sewer (Weston, 1998).

- Solutions-IES, Inc. (Solutions-IES) initiated pilot-testing activities in September 2004 through 2007 to evaluate the use of emulsified vegetable oil (trade name: EOS®) to establish in situ reductive dechlorination reactions in the subsurface (Solutions-IES, 2004, 2005, and 2006). The first phase of EOS® injection began on June 29, 2004 and the second injection phase began on September 10, 2004. Both areas covered a 100-foot wide, by 100-foot long, by 10-foot thick zone from the top of bedrock through the transition zone and extended a short distance into the saprolite. THE EOS® pilot test created conditions favorable for in situ biodegradation of chlorinated volatile organic compounds (CVOCs) within the pilot test treatment area and approximately 100 to 150 feet downgradient.

- Solutions-IES (2004) completed an AS/SVE pilot test evaluation dated October 29, 2004. Solutions-IES concluded that the 2004 data suggested operation of the AS/SVE system and natural processes have successfully reduced the concentration of contaminants in soil to levels that were below the target remedial endpoints for 10 of the 12 locations in their evaluation. Also, other remediation methods may prove to be more effective than continued use of the SVE/AS system, if further reduction of the contaminant concentrations were warranted along the north wall of Building No. 2 (i.e., near the WAP).

3.0 Investigative Methods

Terracon implemented the RI activities at the Site from March to October 2022, which included the collection and analysis of samples from the following environmental media: soil, groundwater, surface water, water in two subsurface tunnel entrances, and soil gas. Terracon's investigative methods followed the Standard Operating Procedures (SOPs) listed in the UFP-QAPP Work Plan dated February 18, 2022 (Northwind JV and Terracon, 2022). The SOPs for this work are in Appendix F.

3.1 Receptor Survey

In September 2022, Terracon conducted a receptor survey update to identify potential exposure pathways on and off the Site including on-site soil, groundwater (use and discharge to surface water), and soil vapor intrusion into on- and off-site buildings. Our work included (1) contacting the City of Burlington, Water Resources Department to identify potential properties within a 1,500-foot radius of the Site without public water connections, (2) contacting the Alamance County Health Department to identify potential water supply wells, and (3) performing a windshield survey to attempt to identify well enclosures.

Terracon conducted the windshield survey on September 28, 2022 to locate water supply wells within an approximate 1,500-foot radius from the Site boundary. The approximate search is shown in Figure 5. During the visual reconnaissance, properties were assumed to have a water supply well if a wellhead cover was observed, such as faux rock, concrete block, or ornamental "wishing well" style structures. Property owners were not directly contacted nor were water supply wells questionnaires issued to property owners in the search radius.

In addition, Terracon contacted the City of Burlington in December 2022 to assess potential restrictions for constructing new water supply wells in the city limits. The purpose of this assessment was to determine whether a property owner in the vicinity of the Site could install a water supply well on their property.

3.2 Sensitive Receptor Survey

In October and November 2022, Terracon contacted multiple state and federal agencies via email to identify environmentally sensitive areas located within 1,500 feet of the Site per Appendix D of the NCDEQ IHSB Guidelines for Assessment and Cleanup of Contaminated Sites dated September 2022 (NCDEQ, 2022c). A summary of the agencies contacted is in Appendix G.

3.3 Surface Water Sampling Activities

Terracon collected surface water samples west of the Site during three events from March to October 2022. The surface water samples were collected to evaluate the discharge of COPCs to the unnamed tributary to Service Creek located approximately 300 feet west of the Site and 900 feet west of the apparent source area for the chlorinated solvent plume. Based on our review of the historical

investigations, there were limited data to evaluate concentration trend variability throughout a calendar year due to the limited number of sampling locations and limited sampling frequency during the calendar year. Five surface water stations SW-1, SW-2, SW-3, SW-4, and SW-3A existed prior to Terracon's RI activities.

Terracon established four new surface water stations to further delineate the extents of impacts to the unnamed tributary to Service Creek. We marked these locations with paint and/or metal posts to enable replication of the sample locations and to permit consistent measurements of the surface water depths during these and future events. Terracon defined the additional locations as follows:

- SW-1A - located upgradient of SW-1 at the outfall of a culverted portion of the unnamed tributary that extends beneath Highway 70/Church Street to the south;
- SW-1B - located upgradient of SW-1 at the outfall of an apparent drainage culvert from the Site;
- SW-2A located downgradient of SW-1; and
- SW-3B located in a branched intermittent tributary of the unnamed tributary to Service Creek, east of SW-3.

Sample collection dates and locations were as follows:

- March 21, 2022: SW-1, SW-2A, SW-2, SW-3, SW-3B, and SW-3A;
- August 9, 2022: SW-1A, SW-1B, SW-1, SW-2A, SW-2, and SW-3; and
- October 27, 2022: SW-1A, SW-1B, SW-1, SW-2A, SW-2, SW-3, and SW-3A.

Terracon collected duplicate samples during each event. The surface water sample collection methods and frequency of quality control samples followed the SOPs listed in the UFP-QAPP Work Plan (Northwind JV and Terracon, 2022). Downstream samples were collected first, followed by progressive upstream sampling. The surface water samples were collected by directly dipping the sample containers into the stream. The containers were partially submerged in such a manner to not displace the sample preservative and not disturb the sediment in the bottom of the creek. Figures 6, 7, and 8 show the surface water sampling locations for the RI.

Terracon placed the samples in laboratory-supplied glassware, labeled, and stored in an ice-packed cooler. The samples, along with chain-of-custody documentation, were delivered to Pace Analytical Services, LLC (Pace) in West Columbia, South Carolina for analysis of VOCs by USEPA Method 8260.

3.4 Collection of Background Soil Samples

Terracon collected off-site soil samples in June 2022 to establish naturally-occurring background concentrations of metals in shallow soil and TOC in aquifer sediment. Nine background soil samples were collected from eight separate off-site soil borings for metals analyses. Five background soil samples were collected from five off-site soil borings for TOC analysis to determine the fraction of organic carbon (f_{oc}) in the shallow aquifer matrix. Metals samples were collected by compositing material from the

surface to between 4 to 6 feet bls of the soil borings. One background sample was collected from 11 to 13 feet bls. The TOC soil samples were collected as composite samples of saturated aquifer matrix between 6 to 16 feet bls. We utilized Regional Probing Services (RPS) as our drilling subcontractor, who is a North-Carolina certified Well Contractor (License No. 3322). RPS advanced the borings using a GeoProbe® 5410 direct-push technology (DPT) drill rig. Drill tooling and sampling equipment were decontaminated before drilling and in between each boring using a Liquinox™ solution. RPS abandoned the soil boreholes by filling the boreholes with bentonite pellets after we completed the sampling activities.

Terracon followed the SOPs listed in the UFP-QAPP Work Plan to collect the soil samples. We placed the samples in laboratory-supplied glassware, labeled the sample containers, and the placed them in an ice-packed cooler. The samples, along with chain-of-custody documentation, were delivered to Pace in West Columbia, South Carolina for analysis of RCRA Metals by USEPA Method 6020 and TOC by the Walkley-Black Method. Analytical results from background samples were used to calculate soil background metals average concentrations and unbiased standard deviations for each metal constituent. The TOC results were used to understand potential sorption processes that might help to slow the migration of the dissolved-phase COPCs.

3.5 Source Investigation Activities

In June 2022, Terracon conducted on-site soil sampling activities to further characterize the COPCs to attempt to identify the source area(s) of CVOCs, and to delineate soil contaminants to the NCDEQ (2022a) Health-Based Preliminary Soil Remedial Goals (PSRGs) or to the Protection of Groundwater PSRGs, whichever are lower, for unrestricted land use. The focus areas of on-site soil investigation were the locations of former chlorinated cleaning machines and sumps located inside Building 2, Building 3, and Building 20, and the waste accumulation areas and former USTs located north of Building 2 (Figure 4).

Terracon advanced 25 soil borings up to 20 feet bls using DPT Macro-Core™ barrel DPT methods and/or hand auger methods in accordance with the SOPs listed in the UFP-QAPP Work Plan (Northwind JV and Terracon, 2022). The number of soil borings and samples collected at each of the potential source areas noted above were as follows:

- Chlorinated Solvent Cleaning Machine 1: Three soil borings were advanced adjacent and downgradient of the machine. Six samples for VOCs and three samples for semi-volatile organic compounds (SVOCs) and metals were collected.
- Chlorinated Solvent Cleaning Machine Sump: Three soil borings were advanced adjacent to or downgradient of the sump. Six samples for VOCs and three samples for SVOCs and metals were collected.
- Chlorinated Solvent Cleaning Machine 3: Two soil borings were advanced adjacent to the former machine location. Four samples for VOCs and two samples for SVOCs and metals were collected.
- Waste Accumulation Pad: Five soil borings were advanced adjacent to the former WAP. Nine samples for VOCs and three samples for SVOCs and metals were collected.

- Waste Oil Transfer Area: Twelve soil borings were advanced in and adjacent to the former waste oil transfer area. Twenty-eight samples for VOCs and twelve samples for SVOCs and metals were collected.

During advancement, Terracon collected soil samples continuously, logged the samples for lithology, and field screened the grab samples with a photoionization detector as an indicator of total VOC impacts. Indications of groundwater (i.e., saturated soil) were encountered at approximate depths of 10 to 12 feet bls in the soil borings. Soil samples from selected depth intervals were also screened using ColorTec™ colorimetric field-testing methods for total chlorinated ethenes. Field screening methods were used to identify soils impacted by CVOCs to facilitate sample selection for laboratory analyses.

Samples were collected in 2-foot intervals at one or more depths for laboratory analyses of VOCs from each boring. Samples collected for laboratory analyses of SVOCs and metals were collected as composite samples of 4- to 8-foot intervals of unsaturated soil. A total of 53 samples were collected for analyses of VOCs and 23 samples were collected for analyses of SVOCs and metals. Soil lithologic logs of the soil borings are in Appendix H.

Terracon conducted the soil sampling activities in accordance with the SOPs listed in the UFP-QAPP Work Plan. The samples were placed in laboratory-supplied glassware, labeled, and stored in an ice-packed cooler. The samples, along with chain-of-custody documentation, were delivered to Pace in West Columbia, South Carolina for analysis of:

- VOCs by USEPA Method 8260;
- SVOCs by USEPA Method 8270; and
- Metals by USEPA Methods 6020.

Quality assurance/quality control procedures followed the UFP-QAPP Work Plan (Northwind JV and Terracon, 2022). One equipment blank, duplicate, and matrix spike/matrix spike duplicate sample were collected per 20 soil samples for each analysis. In addition, a trip blank was included per cooler containing VOC samples. The drill tooling and other sampling equipment was decontaminated prior to and between each soil boring using a Liquinox™ solution. Soil boreholes were abandoned with bentonite pellets after sample completion.

3.6 Direct-Push Technology Groundwater Screening

In June 2022, Terracon conducted in situ groundwater screening and sampling using DPT methods to assess the horizontal and vertical extents of COPCs in off-site groundwater. The locations of the groundwater screening points were determined by review of historical groundwater data, identification of potential data gaps, and potential preferential groundwater pathways to the unnamed tributary. Results of the DPT groundwater screening were used to determine placement of new permanent monitoring wells by estimating the potential horizontal extents of constituents in the shallow aquifer zone. In addition, several of the screening locations (RI-GW-06 through RI-GW-08) were used to evaluate the possibility of the western stormwater drainage culvert from the Site to the unnamed tributary as a preferential pathway for the contaminant plume (Figure 2).

RPS advanced the groundwater sample points using DPT drilling methods in accordance with the SOPs listed in the UFP-QAPP Work Plan. After advancement of the drilling tools until refusal, Terracon collected the groundwater samples from a 4-foot retractable stainless steel screen point sampler. Alternatively, if groundwater was slow to intrude into the sample point, Terracon instructed RPS to construct a 1-inch diameter polyvinyl chloride (PVC) temporary monitoring well in the DPT boring. The appropriate method for sample collection at each location was dependent on the aquifer characteristics and the sampling depths. The small-diameter temporary wells used for sampling were removed and abandoned at the end of the sampling program. RPS decontaminated the drilling tools and other sampling equipment prior to and between each soil boring using a Liquinox™ solution. The sample boreholes and small-diameter temporary wells were abandoned with bentonite pellets after sampling completion. Lithologic logs of the groundwater screening points are included in Appendix H. Copies of the well construction records submitted to the NCDEQ Division of Water Quality are provided in Appendix I.

Terracon screened the groundwater samples in the field for total CVOCs using a ColorTec™ field kit with colorimetric gas tubes. Results of the ColorTec™ field screening were used to determine which groundwater samples to submit to Pace for laboratory analyses. Terracon placed the samples identified for laboratory analysis into laboratory-supplied glassware, labeled, and stored the containers in an ice-packed cooler. The samples, along with chain-of-custody documentation, were delivered to Pace in West Columbia, South Carolina for analysis of VOCs by USEPA Method 8260.

3.7 Collection of Surface Water Samples from the Northern Tunnel

In July 2022, Terracon collected water samples from two ends of the tunnel that connects Building 2 to Building 16 to evaluate if water in the tunnels was impacted by contaminated groundwater and if the tunnel is a potential conduit for groundwater migration. Based on our review of available historical documentation, prior consultants have not collected samples from the water in any of the tunnels on the Site. Sample collection followed the surface water sample collection SOPs listed in the UFP-QAPP Work Plan. Terracon collected the water samples from flooded sections of the tunnels by collecting a grab sample of the water in a disposable polyethylene bailer and then transferred the water to laboratory-provided sample containers. Terracon collected the samples in a manner that did not displace the sample preservative in the containers. Figure 2 shows the approximate tunnel water sampling locations.

Terracon transferred the water samples into laboratory-supplied glassware, labeled the containers, and then stored them in an ice-packed cooler. The samples, along with chain-of-custody documentation, were delivered to Pace in West Columbia, South Carolina for analysis of VOCs by USEPA Method 8260.

3.8 Groundwater Investigation

Between June and October 2022, Terracon conducted the field activities to evaluate groundwater quality and flow at the Site and surrounding properties in relation to previously identified dissolved phase COPCs, specifically PCE, TCE, and its degradation compounds. The groundwater assessment included the following objectives:

- Delineate the horizontal extent of the shallow groundwater plume in the residential area northeast of the Site;

- Collect hydrogeologic data of the bedrock plume northwest of the Site to incorporate into the CSM;
- Determine the hydrologic connection between the unnamed tributary to Service Creek and the bedrock plume;
- Evaluate whether previously unknowns source areas might contribute to the surface water impacts at SW-1; and
- Determine the probability of whether a second plume possibly exists, possibly originating from an off-site property west of North Cobb Avenue and contributing to the impacts in monitoring wells west of the unnamed tributary (i.e., MW-122, MW 124, MW-128, and TAMP-MW-3) and/or the high concentrations in samples from SW-1.

Methods for completing the groundwater investigation are discussed in the following sections.

3.8.1 Installation of Shallow and Deep Monitor Wells

In July 2022, Terracon installed a combination of Type II (single-cased) and Type III (double-cased) wells depending on the well depth and the hydrostratigraphic unit to be included in the monitoring program. These included two Type II monitoring wells (MW-137 and MW-138) and three Type III monitoring wells (MW-139, MW-140, and MW-141). The locations of the wells were determined based on the results of the groundwater screening samples conducted in June 2022 and the accessibility of the off-site properties.

Our drilling subcontractor (Parratt-Wolff Inc. [Parratt-Wolff]) is a North-Carolina certified Well Contractor (License No. 3367). Parratt-Wolff installed the wells using a combination of hollow-stem auger and air-rotary drilling methods in accordance with the SOPs listed in the UFP-QAPP Work Plan. The borings for the Type II monitoring wells were advanced with hollow-stem auger drilling methods to auger refusal. The screened intervals for these wells were set above the bedrock interface. The Type III monitoring wells were advanced initially using hollow-stem auger drilling methods. Upon achieving auger refusal, Parratt-Wolff set and grouted in place a PVC outer casing. After the grout for the outer casing cured for at least 24 hours, Parratt-Wolff utilized air-rotary drilling methods to advance the drilling tools through the grout in the outer casing and into bedrock to the proposed target depth of screen interval. Each Type II monitoring was constructed using 2-inch PVC casing and 10 feet of 0.010-inch machine slotted PVC screen. Each Type III monitoring well was constructed with an outer 6-inch PVC casing set in bedrock. The inner casing was constructed with 2-inch PVC casing and 5 feet of 0.010-inch machine slotted PVC screen. The wells were finished at the surface as flush-mount 8-inch manways set in a 2-foot diameter concrete pad.

After installation, each newly installed monitoring was developed using a freshly decontaminated submersible pump. Soil cuttings and groundwater from the monitoring well installations and development were containerized in 55-gallon drums and transported to the Site for temporary storage.

In addition, Parratt-Wolff repaired the concrete pad for monitoring well TAMP-MW-3 that was in disrepair. They removed the existing plastic manway around the well, removed soil from around the well casing, and installed a new 8-inch metal manway and a 2-foot diameter concrete pad. The well construction details for each of the new monitoring wells and the previously existing monitoring wells at

the Site are in Table 3. Lithologic logs of the new monitoring wells are included in Appendix H. Copies of the well construction records submitted to the NCDEQ Division of Water Quality are provided in Appendix I.

3.8.2 Determination of Groundwater and Surface Water Elevations

In August 2022 and October 2022, Terracon performed two synoptic gauging events of all existing and new monitoring wells to obtain site-wide groundwater elevations. In addition, the depth of the surface water at the surface water sampling locations in the unnamed tributary of Service Creek were measured during each sampling event. The surface water measurements were replicated by the use of paint markings adjacent to the sample location or metal posts installed within the stream bottom. Gauging activities were performed in accordance with the SOPs listed in the UFP-QAPP Work Plan (Northwind JV and Terracon, 2022).

Static water level measurements and top of well casing elevations were used to calculate potentiometric elevations for groundwater at each well. Table 3 summarizes well construction, static water level measurements, and groundwater potentiometric elevations of the gauged monitoring wells. Terracon used the water-level gauging data from the July and October 2022 events to produce groundwater potentiometric maps and cross sections for both the saprolite/PWR and bedrock groundwater hydrostratigraphic units. We obtained the groundwater elevation data by subtracting the depth-to-groundwater measurements from known top-of-casing elevations for each monitoring well. We obtained the surface water elevation data by adding the height of water column in the stream to the measured top of bedrock elevation at each stream gauge. Copies of the field groundwater gauging logs are provided in Appendix J.

3.8.3 Collection of Groundwater Samples

During July and August 2022, Terracon collected groundwater samples from 35 monitoring wells to evaluate the extents of VOCs across the Site. Prior to sample collection, Terracon recorded the depth to groundwater measurements from each monitoring well as described in Section 3.7.3. Terracon purged and sampled the monitoring wells using low-flow sampling techniques coupled with peristaltic and submersible pumps. We measured the water quality parameters of pH, dissolved oxygen (DO), conductivity, temperature and oxidation-reduction potential (ORP) during purging and then collected the samples after stabilization of pH and conductivity. Turbidity measurements were recorded for the monitoring wells sampled for analysis of metals and samples were collected when turbidity measurements were generally less than 10 nephelometric turbidity units (NTUs). Table 4 summarizes the final water quality parameters measured for each of the sampled monitoring wells. Groundwater sampling activities were performed in accordance with the SOPs listed in the UFP-QAPP Work Plan. Copies of the field groundwater sampling logs are provided in Appendix J.

The samples were placed in laboratory-supplied glassware, labeled, and stored in an ice-packed cooler. The samples, along with chain-of-custody documentation, were delivered to Pace in West Columbia, South Carolina for analysis of:

- VOCs by USEPA Method 8260;
- SVOCs by USEPA Method 8270;

- Metals by USEPA Methods 6020/7470;
- Dissolved gases by Method RSK-175; and
- TOC by Method SM-5310C.

Quality assurance/quality control procedures followed the UFP-QAPP Work Plan. One equipment blank, duplicate, and matrix spike/matrix spike duplicate sample were collected per 20 samples for each analysis. In addition, a trip blank was included per cooler contain VOC samples. Reusable sampling equipment was decontaminated prior to and between each monitoring well using a Liquinox™ solution.

3.9 Soil-Vapor Investigation in Surrounding Neighborhood

In July 2022, Terracon installed passive Beacon soil gas samplers adjacent to building foundations at five off-site properties to evaluate the potential for vapor intrusion into the buildings from the off-site VOC groundwater plume. Terracon used passive soil gas samplers by Beacon Environmental due to shallow drilling refusal in the sample locations and the potential for the shallow groundwater to intrude into traditional soil gas points that would need to be set deeper. The property addresses and uses at the time of sampling are as follows:

- 219/221 N. Cobb Ave – Residential;
- 301 N. Cobb Ave – Residential;
- 1612 Hilton Road – Commercial;
- 1615/1617 Hilton Road – Residential; and
- 1707/1709 Hilton Road – Residential.

The passive soil gas samplers (PSG-01 through PSG-05) were installed in 1-inch diameter borings advanced using manual DPT methods. Each boring was advanced to an approximate depth of 3 feet bls, where probe rod refusal was encountered. Terracon installed and deployed the passive samplers in accordance with the SOPs listed in the UFP-QAPP Work Plan (Northwind JV and Terracon, 2022), Beacon's sampling instructions, and the Division of Waste Management Vapor Intrusion Guidance (NCDEQ, 2018). The samplers were deployed for a period of 6 days in order for the reporting limits of the analytes to be below the NCDEQ Residential Vapor Intrusion Soil Gas Screening Levels (VI-SGSLs).

Following the 6-day deployment period, Terracon retrieved the samples and packaged them in laboratory-supplied containers. The samples, along with chain-of-custody documentation, were delivered to Beacon Environmental in Forest Hill, Maryland for analysis of VOCs by USEPA Method 8260. The soil gas points were abandoned using bentonite pellets after sample completion. Figure 2 shows the locations of the passive soil gas sample points.

Quality assurance/quality control procedures followed the UFP-QAPP Work Plan (Northwind JV and Terracon, 2022). One duplicate sample was collected and one trip blank was submitted per sample shipment.

3.10 Land Surveying

In August 2022, Terracon hired Regional Land Surveyors, Inc. (RLS) of Greensboro, North Carolina to measure the locations and top-of-casing elevations of the new permanent monitoring wells. RLS also surveyed the locations and creek bottom elevations of the surface water sample locations, excluding SW-3B. The survey used the horizontal NAD83 (2011) and vertical NAVD88 reference datums with elevations in feet above mean sea level to hundredths of a foot. Additionally, RLS surveyed elevations of existing monitoring wells adjacent to the new monitoring wells (TAMP-MW-3, TAMP-MW-7, TAMP-MW-8, MW-123, MW-124, MW-129, and MW-130) to verify the survey datum and prior measurements were compatible. Based on a comparison of the monitoring well top of casing elevations measured by RLS to previously reported elevations, the average difference was 0.13 feet, therefore, Terracon updated the elevations of these wells in Table 3. The survey data from RLS is in Appendix K.

Terracon used a sub-foot Trimble Geo7X GPS unit to record the locations of soil borings, groundwater screening points, and soil vapor samples installed during this RI. Based on the accuracy of the sub-foot GPS unit and scale of the Site, the location measurements of these samples were sufficient for future investigative and/or remedial design.

3.11 3D Model Development using Earth Volumetric Studio

Terracon used Earth Volumetric Studio (EVS) to create 3-dimensional (3-D) visualizations of various conditions at the Site including the physical and geographical features of the on-site and adjacent properties, surrounding volumes and surfaces of hydrogeologic units, and vertical and lateral extents of dissolved constituents in groundwater. Terracon used EVS to develop an initial, preliminary EVS model of the Site in 3-D, and then developed plan-view and cross-section maps of the data to better understand constituent concentrations and spatial trends, and to evaluate potential migration pathways for the dissolved constituents. For the purposes of this work, we narrowed the focus of the visualizations to consider only PCE; TCE; and vinyl chloride. Terracon “slices” of these 3-D visualizations from EVS to update the CSM in Appendix A.

3.12 Investigative Derived Wastes

Between June and August 2022, soil and groundwater investigation-derived wastes (IDW) were generated during the RI sampling programs. The IDW materials were segregated and containerized in the field based on their known and/or expected level of contamination. IDW was temporarily stored on the Site property in individual 55-gallon Department of Transportation-rated metal drums. A total of twenty-eight drums were used to containerize the IDW. Each IDW container was labeled with content, point of generation, date of generation, and a ‘Pending Analysis’ status.

In August 2022, Terracon collected representative samples from each container (or specified groups of containers by location) for waste characterization analyses. Analytical parameters included totals for VOCs, SVOCs, and RCRA metals as required by a permitted treatment/disposal facility. Toxicity Characteristic Leaching Procedure analysis of chromium was performed on two soil samples based on the results of the totals analysis. A&D Environmental Services, Inc. (A&D) was contracted to manifest, transport, treat, and dispose of IDW from the Site.

Soil IDW was managed under the North Carolina and EPA 'contained in' rule, whereby the bulk containerized soil was transported and disposed as a non-hazardous waste. The liquid IDW was disposed of as non-hazardous wastes based on confirmation analytical results. The existing EPA generator identification number (NC0991302663) was used. Waste disposal profiles and manifests provided by A&D are in Appendix L.

3.13 Data Validation

Terracon reviewed and validated the analytical data collected during this RI in accordance with the Tarheel Army Missile Plant UFP-QAPP (February 2022), U.S. Department of Defense (DoD) Quality Systems Manual Version 5.3 (U.S. DoD, 2019a and 2019b), and analytical method requirements. An overall assessment of the data was conducted based on the PARCC parameters (i.e., precision, accuracy, representativeness, completeness, comparability) and sensitivity for soil, groundwater, and surface water. Terracon assigned data qualifiers using guidance from DoD General Data Validation Guidelines dated November 2019 (U.S. DoD, 2019b), Module 1 Data Validation Guidelines: Data Validation Procedure for Organic Analysis by GC/MS (May 2020), and Module 2 Data Validation Guidelines: Data Validation Procedure for Metals by ICP-OES (May 2020). Terracon reviewed and qualified the analytical results, as necessary, after completing the validation assessments.

4.0 Remedial Investigation Results

This section describes the analytical results, interpretation, and discussion for all the RI activities that Terracon performed at the Site.

4.1 Receptor Survey Results

Terracon evaluated potential exposure of contaminants to on-site and off-site receptors based on a review of the data from historical investigations and this investigation. Potential exposure pathways for each affected media are presented below:

- Soil: Current surface soil exposures are not suspected based on historic data. Exposure pathways would include disturbance of surface and subsurface soil by potential future residents, non-resident workers, construction workers, and trespassers.

- Groundwater:

  - Existing water supply wells: Terracon's windshield receptor survey conducted in September 2022 did not identify potential water supply wells within approximately 1,500 feet of the Site (Figure 5). Likewise, personnel from the City of Burlington did not identify occupied properties without municipal water accounts within 1,500 feet of the Site. Alamance County personnel did not identify potential water supply wells within 1,500 feet of the Site. Based on the windshield receptor survey and responses by City and County officials, the existence and use of water supply wells within 1,500 feet of the Site were considered to be highly unlikely.

  - Future water supply wells: According to the City of Burlington's Unified Development Ordinance (https://www.burlingtonnc.gov/DocumentCenter/View/23506/Burlington-UDO-10-18-22?bidId=):

    - Section 6.5.A.1.b - No on-site water supply system shall be allowed in cases where the public potable water supply system is adjacent to or within 1,000 linear feet of the lot being developed.

    - Section 6.5.A.3.c - In cases where new development is proposed on an existing lot that is not served by the City's potable water supply system, but the City's potable water supply system is adjacent to or on the lot in question, connection to the City's potable water supply system shall be required as part of development.

    - Also, Section P2602.1 of the 2018 North Carolina State Plumbing Code for residential construction (https://codes.iccsafe.org/content/NCRC2018/chapter-26-general-plumbing-requirements) states that any building or premise where plumbing fixtures are installed shall be connected to a public water supply or sewer system, if available.

    - Based on Terracon's receptor survey conducted in September 2022, all properties within a 1,500-foot radius of the Site were either connected to, or were within 1,000-

linear feet of the publicly-supplied water service. New private water supply wells will not be allowed on properties in the vicinity of the TAMP site due to the ordinances of the City of Burlington and the North Carolina State Plumbing Code for residential construction.

- Groundwater discharge points: The chlorinated solvent plume is known to discharge to the surface water body to the west of the Site. Surface water and on-site tunnel water samples collected during this RI (see Sections 4.3 and 4.7) indicated that surface water and/or subsurface tunnels are exposure pathways. Terracon evaluated these exposure pathways further in Section 6.0.

- Vapor Intrusion:
  - On-site Buildings: Soil vapor from the on-site chlorinated solvent plume is a potential future exposure pathway after the facility is upgraded and/or renovated.
  - Off-site Buildings: Based on soil gas data collected during this RI (see Section 4.8), soil vapor from the chlorinated solvent plume does not appear to be an exposure pathway for off-site residential properties along the northern and northwestern property boundary. However, the groundwater to indoor air pathway was evaluated in the HHRA based on data collected during this RI (see Section 6.1).

4.2 Sensitive Receptor Survey Results

State and Federal agencies that responded to the Terracon's inquiries in October and November 2022 did not identify potentially sensitive receptors or sensitive environments within 1,500 feet of the Site. A summary of the agencies that Terracon contacted and the agencies' responses are in Appendix G.

4.3 Surface Water Sample Results

Table 5 includes the analytical results of the surface water samples that Terracon collected in March, August, and October 2022, as well as historical results collected since 2017. The results in Table 5 were compared to the NCAC 02B.0202 Water Quality Standards for Surface Waters (2B Standards) (NCDEQ, 2022d) and the USEPA (2021b) Nationally Recommended Water Quality Criteria for Aquatic Life and Human Health (July 2021 versions). Figures 6, 7, and 8 present the sample locations and analytical results for the three events. The results and trend interpretations for the COPCs are presented as follows (sample locations ordered upstream to downstream):

- SW-1A: cis-1,2-dichloroethene (cis-1,2-DCE) was detected below the 2B Standard in August and October 2022. TCE was detected below the 2B Standard in October 2022.

- SW-1B: TCE was detected below the 2B Standard in August and October 2022. PCE was detected below the 2B Standard in October 2022.

- SW-1: cis-1,2-DCE; 1,1,2-trichloro-1,2,2-trifluoroethane; PCE; and/or TCE were detected in samples collected since 2017. The detected concentrations of PCE and/or TCE were above the

2B Standards in samples from each sampling event. Since 2017, the highest detected concentration of PCE was in February 2019 and the highest detected concentration of TCE was in October 2022.

- SW-2A: cis-1,2-DCE; 1,1,2-trichloro-1,2,2-trifluoroethane; PCE; TCE; and/or vinyl chloride were detected in samples collected between March and October 2022. The detected concentrations of PCE, TCE, and/or vinyl chloride were above the 2B Standards in each sampling event. The highest detected concentrations were in October 2022.
- SW-2: cis-1,2-DCE; PCE; and TCE were detected in samples collected since 2017. The detected concentrations of PCE and TCE were above the 2B Standards in each sampling event. Since 2017, the highest detected concentrations were in October 2022.
- SW-3: cis-1,2-DCE; PCE; and TCE were detected in samples collected since 2017. The detected concentrations of PCE and TCE were above the 2B Standards in each sampling event. Since 2017, the highest detected concentrations were in October 2022.
- SW-3B: COPCs were not detected above the laboratory reporting limits in the sample collected in March 2022.
- SW-3A: PCE and TCE were detected in the samples from March and October 2022. The detected concentrations of PCE in March 2022 was above the 2B Standard.

In general, the concentrations of COPCs increase downstream from SW-1A, peak at SW-2A, and decrease downstream of SW-2A. This trend indicates that the main groundwater discharge point of the COPC plume is at or near SW-2A. Based on the analytical results from this RI, the stormwater drainage culvert from the Site (i.e., sample SW-01B) did not appear to be a preferential pathway to the unnamed tributary to Service Creek for the COPC plume. The laboratory analytical reports are included in Appendix N.

4.4 Background Soil Samples

A summary of the background soil samples results are included in Table 6, and the sample locations are shown on Figure 2. Background soil analytical results were summarized and compared to the NCDEQ PSRGs (NCDEQ, 2022a), if applicable. Concentrations ranges for each analyte are presented in the following metal samples and for TOC.

4.4.1 Summary of Analytical Results for Background Metals in Soil Samples

- Arsenic: Concentrations above the laboratory's limit of quantitation (LOQ) were detected in each of the nine background soil samples (Table 6). The detected concentrations ranged from 0.35 mg/kg to 2.7 mg/kg, and the average concentration was 1.3 mg/kg. Soil sample RI-GW-06 (0-6') exhibited the greatest arsenic concentration (2.7 mg/kg) as compared to the other background samples. This value exceeded NCDEQ's Residential PSRG of 0.677 mg/kg, but was less than the Industrial PSRG of 3.0 mg/kg. When comparing the soil sample results in Table 7 to applicable regulatory criteria, the maximum background value of 2.7 mg/kg should be considered, in lieu of the Residential PSRG.

- Barium: Concentrations above the laboratory's LOQ were detected in each of the nine samples. The detected concentrations ranged from 10 mg/kg to 180 mg/kg, and the average concentration was 72 mg/kg. These values were less than NCDEQ's Residential PSRG of 3,130 mg/kg for barium.

- Cadmium: Concentrations above the laboratory's LOQ were detected in four of the nine samples. The detected concentrations ranged from 0.028 mg/kg to 0.12 mg/kg, and the average detected concentration was 0.066 mg/kg. These values were less than NCDEQ's Residential PSRG of 1.4 mg/kg for cadmium.

- Chromium: Concentrations above the laboratory's LOQ were detected in each of the nine samples. The detected concentrations ranged from 7.5 mg/kg to 38 mg/kg, and the average concentration was 20.8 mg/kg. These values were less than NCDEQ's Residential PSRG of 2,300 mg/kg for chromium, assuming only chromium III was present in the samples.

- Lead: Concentrations above the laboratory's LOQ were detected in each of the nine samples. The detected concentrations ranged from 0.76 mg/kg to 11 mg/kg, and the average concentration was 5.8 mg/kg. These values were less than NCDEQ's Residential PSRG of 400 mg/kg for lead.

- Selenium: Concentrations above the laboratory's LOQ were detected in each of the nine samples. The detected concentrations ranged from 0.50 mg/kg to 2.7 mg/kg, and the average concentration was 1.1 mg/kg. These values were less than NCDEQ's Residential PSRG of 78.2 mg/kg for selenium.

- Silver: Concentrations were not detected above the laboratory's limit of quantitation in the collected samples. These values were less than NCDEQ's Residential PSRG of 78.2 mg/kg for silver.

Table 6 compares the concentrations for each metal analytes to published values of naturally occurring concentrations in soil in North Carolina (Smith et al., 2013). The published dataset included samples from 83 borings collected at three different depths. Based on a comparison with the published dataset, the concentrations detected within the background soil samples fall within or below the ranges and/or averages from the published dataset. The laboratory analytical reports are included in Appendix N.

4.4.2 Analytical Results for Organic Carbon in Background Soil Samples

TOC concentrations were detected in four of the five samples above the laboratory's LOQ (Table 6). The detected concentrations ranged from 360 mg/kg to 3,000 mg/kg, with an average concentration of 1,200 mg/kg. Terracon used the methods specified in the Soil Screening Guidance: Technical Background Document (USEPA, 1996b) to evaluate the effects of adsorption of the COPCs to the aquifer sediment, based on the fraction of f_{oc} in the soil samples and literature values for organic carbon/water partitioning coefficient (K_{oc}) and bulk density of soil (dry). The calculations and results are in Table 8. Based on these data, the primary COPCs in groundwater are expected to migrate slower than bulk groundwater flow by the following factors (considering groundwater flow at a unit factor of "1"):

- PCE: 0.34
- TCE: 0.59
- Vinyl Chloride: 0.72
- Cis-1,2-DCE: 0.79

4.5 Source Investigation Results

In June 2022, Terracon advanced 25 soil borings up to 20 feet bls using DPT Macro-Core™ barrel to further characterize identified the source area(s) and to delineate soil contaminants to the NCDEQ PSRGs. The focus areas of the on-site soil investigation were near the WAP and former UST 9 north of Building 2, and near the former chlorinated cleaning machines and sumps located inside Buildings 2, 3, and 20. A summary of the results are included in Table 7. The sample locations and VOC analytical results, along with approximate extents of TCE impacts in unsaturated soil above the Industrial and Residential PSRG, are shown on Figure 9. The laboratory analytical reports are in Appendix N. Terracon compared the soil analytical results to the NCDEQ PSRGs (NCDEQ, 2022a) and to the average metal concentrations from the background soil samples. The analytical results of samples collected for each of the investigated source areas are summarized below:

- Chlorinated Solvent Cleaning Machine 1 (includes RI-SB-01, 12, and 13)
  - VOCs: VOCs were not detected above the PSRGs.
  - SVOCs: Numerous SVOCs were detected in RI-SB-01 below the PSRGs. SVOCs were not detected above the laboratory's LOQ in RI-SB-12 and RI-SB-13.
  - Metals: Arsenic was detected above the Residential PSRG (0.677 mg/kg) in RI-SB-01 (2-8') at 0.99 mg/kg and in RI-SB-12 (2-6') at 2.5 mg/kg, but were less than the maximum background value for arsenic of 2.7 mg/kg. The arsenic concentration in sample RI-SB-13 (2-6') was 5.6 mg/kg, which exceeded both the Industrial PSRG (3.0 mg/kg) and the maximum background value. Selenium was detected above the Groundwater Protection PSRG of 2.08 mg/kg in RI-SB-13 (2-6') at 2.1 J- mg/kg. Additional metals were not detected above the PSRGs.
- Chlorinated Solvent Cleaning Machine Sump (RI-SB-07, 10, 11)
  - VOCs: TCE was detected below the PSRGs in samples from RI-SB-07. Additional VOCs were not detected above the PSRGs in RI-SB-07. VOCs were not detected above the laboratory LOQs in samples from RI-SB-10 and 11.
  - SVOCs: Numerous SVOCs were detected below the PSRGs in RI-SB-07, 10, and 11.
  - Metals: Arsenic was detected above the Residential PSRG in RI-SB-07, 10, and 11. Each of these values; however, were less than the maximum background value for arsenic of 2.7 mg/kg. Selenium was detected above the Groundwater Protection PSRG in RI-SB-10

and 11, but were less than the Residential and Industrial PSRGs. Additional metals were detected at concentrations below the PSRGs.

- Chlorinated Solvent Cleaning Machine 3 (RI-SB-14 and 15)
  - VOCs: PCE and TCE were detected in RI-SB-14 and 15. The concentration of PCE in the shallow sample (2 to 4 ft bls) from RI-SB-15 was above the Groundwater Protection PSRG, but less than the Residential and Industrial PSRGs.
  - SVOCs: Numerous SVOCs were detected in samples from RI-SB-14 and 15, but each were less than the PSRGs.
  - Metals: Arsenic was detected at concentrations above the Residential PSRG in RI-SB-14 and 15, but were less than the maximum background value for arsenic of 2.7 mg/kg. Additional metals were detected at concentrations below the PSRGs.
- Waste Accumulation Pad (RI-SB-04, 05, 06, 09A, and 09B)
  - VOCs: CVOCs were detected in each of the soil borings and PCE, TCE, and/or vinyl chloride were detected above the Groundwater Protection PSRG in RI-SB-04, 06, 09A, and 09B. Additional VOCs were not detected above the PSRGs. Concentrations of CVOCs generally increased with depth including samples collected beneath the water table; however, higher concentrations were observed in shallow samples from RI-SB-05 and 09B.
  - SVOCs: Benzo(a)anthracene was detected above the Groundwater Protection PSRG and benzo(a)pyrene was detected above the Residential PSRG in RI-SB-09B. Additional SVOCs were detected in RI-SB-05, 06, and 09B below the PSRGs.
  - Metals: Arsenic was detected above the Residential PSRG and selenium was detected above the Groundwater Protection PSRG in RI-SB-06 and 09B. Additional metals were not detected above the PSRGs.
- Waste Oil Transfer Area (RI-SB-02, 03, 08, 16, 17, 18, 19, 20, 21, 22, 23, 24)
  - VOCs: TCE was detected above the Industrial PSRG in samples collected from RI-SB-17 (4-6'), RI-SB-19 (2-4'), and RI-SB-19 (6-8') and above the Residential PSRG in RI-SB-03, 08, and 16. PCE, TCE, and/or vinyl chloride was detected above the Groundwater Protection PSRG in in each of the soil borings with the exception of RI-SB-23. Additional VOCs were not detected above the PSRGs. The highest concentrations of TCE were detected in RI-SB-17 and 19 in unsaturated intervals, indicating that this is a source area. CVOC concentrations generally decreased with distance from RI-SB-17.
  - SVOCs: Benzo(a)pyrene was detected above the Industrial PSRG in RI-SB-23 and above the Residential PSRG in RI-SB-08 and 17. Benzo(a)anthracene and benzo(b)fluoranthene was detected above the Residential PSRG in RI-SB-23. Additional SVOCs were detected at concentrations below the PSRGs.
  - Metals: Arsenic was detected above the Industrial PSRG in RI-SB-02 and above the Residential PSRG in RI-SB-03, 08, and 16 through 24. Selenium was detected above the

Groundwater Protection PSRG in RI-SB-02, 03, 16, 17, and 18. Additional metals were detected at concentrations below the PSRGs.

Based on a comparison with the site-specific background soil samples and the published USGS dataset (Smith et al., 2013), the detected metal concentrations in the samples were within naturally occurring ranges for the area and for North Carolina.

Figure 9 denotes an area of approximately 370 square feet with soil sample results with VOCs that exceeded the Residential PSRGs and an area of 150 square feet with VOC sample results that exceeded the Industrial PSRGs. Terracon estimated the following soil volumes in these two areas, assuming a depth of excavation of approximately 11 feet bls:

- Region Containing Soil that Exceeded Industrial PSRGs: 60 cubic yards (CY) or 90 tons.
- Region Containing Soil that Exceeded Residential PSRGs: 150 CY or 230 tons.

These are relatively small volumes that could be excavated quickly and effectively. The volume of soil within these regions that might exceed the Toxicity Characteristic Leaching Procedures thresholds for TCE (0.5 milligrams per Liter [mg/L]) or PCE (0.7 mg/L) would likely be significantly smaller than the volumes stated previously. The actual volumes of soil in these areas that exceed regulatory criterium could vary from the values above, depending on the required benching and/or sloping of the excavation side walls. Also, additional impacted soils could be encountered when conducting the soil-removal action that were not detected during the RI activities noted herein, especially if excavating soil surrounding and below the WAP.

4.6 Groundwater Sample Results of the Screening-Level Investigation in the Surrounding Neighborhood

In June 2022, Terracon conducted groundwater screening and sampling activities using a DPT drill rig. The groundwater samples were collected using either screen-point samplers or temporary PVC well screenings. The purposes of this work were to assess the horizontal and vertical extents of COPCs in off-site groundwater, identify potential preferential migration pathways, and/or to assess and confirm potential locations for permanent wells that would be installed in July and August 2022. A summary of the results is in Table 9, compared to the 2L Standards (April 2022 version). The sample locations and analytical results are shown on Figure 10. The laboratory analytical reports are in Appendix N. The following summarizes the analytical results for each grab groundwater sample:

- RI-GW-01: PCE and its degradation products were not detected above the laboratory LOQs. The sample contained 1,2-dichloroethane (1,2-DCA) above the 2L Standard. Other VOCs, including 1,1-dichloroethane (1,1-DCA) and 1,1-dichloroethene (1,1-DCE) were present in the sample at less than the 2L Standards.
- RI-GW-02: The sample contained 1,1-DCA and 1,2-DCA above the 2L Standards. Other VOCs including TCE; 1,1,1-trichloroethane (1,1,1-TCA); and 1,1-DCE were present in the sample at less than the 2L Standards. End products of 1,1,1-TCA degradation include 1,1-DCA

(anaerobic pathway) and 1,1-DCE (abiotic dehydrohalogenated pathway). PCE was not detected above the laboratory LOQs.

- RI-GW-03: Terracon was unable to collect a sample due to shallow drilling refusal.
- RI-GW-04: PCE and TCE were detected above the 2L Standard. Cis-1,2-DCE was detected below the 2L Standard. The COPCs were present in sample RI-GW-04 (Figure 10) at relatively low concentrations, especially considering that its location was immediately upgradient of surface water sample location SW-2A (Figure 8), where Terracon suspects the highest concentrations of the groundwater plume may be discharging into the tributary to Service Creek. The relatively low concentrations in sample RI-GW-04 could indicated that other unknown sources are also discharging to the tributary to Service Creek and/or that RI-GW-04 wasn't deep enough for the COPCs to be present in the sample.
- RI-GW-05: Cis-1,2-DCE; PCE; TCE; and vinyl chloride were detected in sample RI-GW-05 at concentrations significantly greater than the 2L Standards. Other CVOCs and methyl tert-butyl ether were detected in the sample but at concentrations less than the 2L Standards.
- RI-GW-06: PCE, TCE, and vinyl chloride were detected in sample RI-GW-06 at concentrations significantly greater than the 2L Standards. Also, the constituents and constituent concentrations in RI-GW-06 were similar to the constituents detected in RI-GW-05, indicating they might originate from the same source. Other CVOCs and petroleum-related VOCs were detected in this sample, but at concentrations less than the 2L Standards.
- RI-GW-07 and RI-GW-08: PCE and TCE were detected in these samples at similar concentrations that were slightly greater than the 2L Standards. Acetone, cis-1,2-DCE, and/or 4-methyl-2-pentanone also were detected in the two samples, but at concentrations less than the 2L Standards.
- RI-GW-09: A sample was unable to collected due to shallow drilling refusal.

Terracon used the results from the grab groundwater samples to estimate the approximate lateral extent of the dissolved-phase plume in saprolite to determine placement of permanent delineation monitoring wells north and west of the Site. The constituents and constituent concentrations in RI-GW-07 and RI-GW-08 were fairly similar, especially TCE and PCE, indicating the constituents in these wells might originate from the same source. The TCE in samples RI-GW-04, RI-GW-05, and RI-GW-06; however, were at three to ten times greater concentration than the PCE concentrations indicating the constituents in these wells might originate from a different source(s) than the constituents in RI-GW-07 and RI-GW-08.

The results of the grab groundwater samples RI-GW-07 and RI-GW-08 (Figure 10) indicated that the stormwater drainage culvert from the Site (i.e., on the southern side of the former Lucent facility) to the unnamed tributary may be a contaminant migration pathway. Additionally, the high PCE and TCE detections in RI-GW-05 and RI-GW-06 could indicate either:

- a second CVOC plume could extend from the TAMP facility to the west side of the former Lucent Technologies property, or

- there might be a separate unknown release at the Lucent Technologies property (i.e., off the TAMP site).

4.7 Surface Water Sample Results from the Northern Tunnel

In July 2022, Terracon collected water samples from two ends of the tunnel that connects Building 2 to Building 16 to evaluate whether water in the tunnel was impacted with the COPCs in groundwater in this area, and/or to determine if the tunnel is a potential conduit for groundwater migration. Analytical results from samples Tunnel N-01 and Tunnel S-02 are summarized in Table 10, and compared to the 2B Standards (due to potential dermal contact) (NCDEQ, 2022d) and the 2L Standards (NCDEQ, 2021b), because the tunnel water is considered to be groundwater). The sample locations are shown on Figure 2. The laboratory analytical reports are in Appendix N.

PCE and TCE were detected above the 2B and 2L Standards in both samples collected from the tunnel. Chloroform and cis-1,2-DCE (a daughter product of PCE and TCE degradation) were detected in the tunnel samples but at concentrations less than the 2B and 2L Standards. The concentrations of CVOCs were higher in Tunnel N-01 sample collected from the northern entrance of the tunnel; however, both samples were collected from stagnant water and are likely biased low as compared to recently infiltrated groundwater. The CVOC detections suggested the tunnel intersects the dissolved-phase plume. As a result, the property owner should strongly consider these data prior to dewatering the tunnel as additional considerations would be necessary prior to extracting the water and/or future use of the tunnel, such as:

- The tunnel would function as a groundwater extraction well, while partially dewatering the surrounding aquifer and pulling impacted groundwater toward the tunnel. Likewise, groundwater extraction is not allowed by the current deed restrictions for the property.
- Permits would be required for the:
  - extraction and treatment of groundwater (from NCDEQ) and
  - prior to discharging the water to either the municipal sewer system (from the City of Burlington) or a stormwater sewer discharge system (from NCDEQ).

4.8 Groundwater Investigation Results from Monitoring Wells

4.8.1 Monitoring Well Construction Details

In July 2022, Parratt-Wolff constructed five monitoring wells (two Type II saprolite and three Type III bedrock) off the Site as described in Section 3.7.2. Groundwater elevation and analytical data from the new monitoring wells were incorporated into the existing dataset to increase the understanding of shallow and deep groundwater flow and contaminant migration from the Site. Construction details and groundwater elevations for each of the new monitoring wells and the previously existing monitoring wells are in Table 3, which includes data since collected since 2017.

4.8.2 Potentiometric Surface Elevations

In August 2022 and October 2022, Terracon performed two synoptic gauging events of all previously existing and new monitoring wells to obtain site-wide groundwater and surface water elevations. Table 3 summarizes well construction, static water level measurements, and groundwater potentiometric elevations of the gauged monitoring wells. Table 3 also includes calculated surface water elevation data for the stream gauges based on the depth of water above the datum on the bedrock surface in the stream bottom. Figure 11 presents the potentiometric surface map based on elevation data from August 2022 for the shallow groundwater monitoring wells screened in the saprolite aquifer zone and the surface water elevation data from the stream gauges. Figure 12 presents the potentiometric surface map based on elevation data from August 2022 for the deep groundwater monitoring wells screened in the bedrock aquifer zone. Figure 13 presents the potentiometric surface map based on elevation data from October 2022 for the saprolite aquifer zone and the surface water elevation data. Figure 14 presents the potentiometric surface map based on elevation data from October 2022 for the bedrock aquifer zone.

Figures 11 and 13 show similar results for the saprolite aquifer zone. The highest measured groundwater elevations were in monitoring wells nearest to and/or west of the WAP. The lowest water elevations were from stream gauges installed in the tributary to Service Creek followed by monitoring wells located nearest to the boundaries to the creek. The results show converging groundwater flow lines toward the tributary to Service Creek and toward the southern end of the tunnel. These data suggest both the tributary to Service Creek and the southern end of the tunnel receive shallow groundwater. Likewise, groundwater on the east and west sides of the creek converges toward the creek in the northwest and northeast directions, respectively. These data suggest that the creek is a groundwater receptor because it receives groundwater from both the east and the west. Consistent with LeGrand (2004), components of groundwater movement include transmission through the regolith parallel to the bedrock surface as well and into interconnected fractures in the underlying bedrock. The destination of both components of groundwater should be through seepage into the stream (or other water bodies when present).

Figures 12 and 14 present potentiometric surface data for the bedrock aquifer zone from the August 2022 and October 2022 gauging events, respectively. Similar to the data for the saprolite aquifer zone, Figures 12 and 14 show the highest measured groundwater elevations were in monitoring wells nearest to the WAP. The lowest water elevations were in wells located nearest to the tributary to Service Creek. Converging groundwater flow lines are present on both sides of the creek, suggesting the tributary to Service Creek receives groundwater from both sides of the creek. These data suggest that the creek is a groundwater receptor for both the saprolite and fractured bedrock zones because it receives groundwater from both the east and the west. This remains consistent with the premise of LeGrand (2004), that surface water in stream valleys receive groundwater from both the regolith and from bedrock, and from both sides of a groundwater basin. This principle is more easily understood considering the presence of bedrock in the creek's bottom.

Converging potentiometric surface lines are absent in the bedrock aquifer zone toward the tunnel. This is because either (1) the component of groundwater flow from bedrock is less prevalent because the bottom of the tunnel might not intersect with the bedrock and/or (2) there are less bedrock wells in this area of the Site to allow a thorough assessment of the potentiometric surface data and the component of groundwater flow from bedrock into the tunnel.

4.8.3 Geologic Cross Sections

Terracon used the lithologic descriptions from the new and previously existing monitoring wells and soil borings to create three geologic cross sections across the Site. Cross-section locations are shown in Figure 2. Geologic Cross-Sections A-A', B-B' and C-C' are in shown in Figures 15, 16, and 17, respectively, and each include water-level data and potentiometric contours developed from the August 2022 gauging event. We did not prepare geologic cross-sections using the October 2022 water-level data because there were no appreciable differences between the two datasets.

Geologic Cross-Section A-A' (Figure 15) starts near the source area north of Building 2 and extends through the apparent centerline of the plume and across the creek showing the topographic rise on the western side of the creek. Geologic Cross-Section B-B' (Figure 16) starts at the source area near the WAP, and then extends west through the former Lucent facility (201 N. Cobb Avenue) and then connects through monitoring wells TAMP-MW-03 and MW-122 near the former Elder Hosiery Mills (139 Homewood Avenue). As indicated in Figure 16, the depth of the transition between saprolite and bedrock is not known with certainty due to discrepancies we identified in boring logs from wells installed in this portion of the Site. Geologic Cross-Section C-C' (Figure 17) starts at the source area near the WAP and extends north-northeast through Building 16, and then through the adjacent neighborhood along Hilton Avenue.

Geologic Cross-Sections A-A' (Figure 15) and B-B' (Figure 16) show downward vertical gradients in the vicinity of Building 2, which transition to more horizontal gradients near the center points of each of the cross-sections. The crossings near SW-2 for Cross-Section A-A' and near SW-1 for Cross-Section B-B' both present strong upward vertical gradients that converge toward the unnamed tributary to Service Creek along both stream banks. These provide strong evidence that the unnamed tributary to Service Creek is a receptor that receives groundwater from both the east and the west. This is consistent with the principle of LeGrand (2004), that groundwater movement is toward the stream, through both the regolith and interconnected fractures in the underlying bedrock. Likewise, both components of groundwater flow are expected to discharge through seepage into the stream from both sides of the stream. Thus, Terracon does not expect that groundwater flows significantly past the centerline of the stream, and historical groundwater impacts in monitoring wells MW-122 and TAMP-MW-3 are likely from other off-site sources such as the former Elder Hosiery Mills (Parcel 139434) or other unknown sources to the west.

Geologic Cross-Section B-B' (Figure 16) shows the back side of the former Lucent Technologies Building (at 201 N Cobb Avenue) was partially constructed beneath the water table. This is consistent with Terracon's conversations with tenants in the building in July 2022, who indicated groundwater seepage on the back wall of the facility due to large rain events.

Geologic Cross-Section C-C' (Figure 17) presents a slight downward vertical gradient in the vicinity of Building 2, similar to Cross-Sections A-A' and B-B'. However, the gradients quickly transition to the upward direction in the vicinity of monitor wells MW-108 and MW-115. Terracon suspects this could be the result of preferential groundwater flow through the interfacial features surrounding the tunnel, and not necessarily through the open-internal structure of the tunnel. Figure 17 shows a hypothetical coarse gravel layer on the bottom surface of the tunnel, as a possible pathway for this preferential groundwater flow. Even though we have no evidence that this coarse gravel layer exists, is it plausible that the construction process created an envelope of coarser grained backfill surrounding the

tunnel, with significantly higher permeability as compared to the native saprolite that exists in this area of the Site. Terracon suspects the man-made structural fill surrounding the tunnel, combined with a downward tilting bedrock surface toward the north, work in unison to create a mechanism for the preferential migration of groundwater toward the North in this area of the Site.

4.8.4 Analytical Results from Groundwater Samples

During July and August 2022, Terracon collected groundwater samples from 35 monitoring wells to evaluate the extents of VOCs, SVOCs, and metals across the Site. Biogeochemical parameters including conductivity, DO, ORP, pH, temperature, and turbidity are in Table 4. Table 11 includes a summary of the analytical results for groundwater samples including TOC (by Method M5310C); ethane, ethylene, and methane (by Method RSK 175); select metals (by USEPA Method SW6020); VOCs (by USEPA Method 8260D); and SVOCs (by USEPA Method SW8270E). Analytical results of the monitoring wells screened in saprolite and the primary CVOC contaminant plumes in the saprolite aquifer are shown on Figure 18. Analytical results of the monitoring wells screened in bedrock and the primary CVOC contaminant plumes in the bedrock aquifer are shown on Figure 19. The laboratory analytical reports are in Appendix N. The following subsections describe the data obtained from the groundwater samples collected in July and August 2022.

4.8.4.1 Biogeochemical Parameter Results

4.8.4.1.1 Electrical Conductivity

Electrical conductivity in a groundwater sample is a surrogate parameter for the quantity of dissolved charged chemicals (i.e., salts) in the sample. Measured conductivity values in the monitoring well samples ranged from 1 microsiemen per centimeter (µS/cm) to 886 µS/cm (Table 4), with an average of 324 µS/cm. The off-site wells exhibited slightly higher average conductivity values (445 µS/cm) than on-site wells (279 µS/cm), possibly because the five new off-site wells (MW-137 through MW-141) were installed and developed within 2 weeks of the sampling event. Monitoring wells in proximity of the Pilot Test Injection area on the Site (MW-108, MW-109, and MW-115) exhibited a greater average conductivity value (565 µS/cm) than the average for monitoring wells outside of the area (323 µS/cm). There were no appreciable differences in average conductivity values for wells screened in saprolite versus bedrock.

Monitoring wells MW-120 and MW-136 exhibited high conductivity values and high pH values, possibly due to grout contamination in the wells. Therefore, data from these wells were excluded from our evaluation of ranges in values for conductivity and pH results. In the future, monitoring well MW-120 should be redeveloped to remove the suspected grout contamination, and thus, allowing the collection of biogeochemical parameter data more representative of typical groundwater conditions.

4.8.4.1.2 Dissolved Oxygen

Dissolved oxygen (and ORP) are important parameters at sites that contain CVOCs because chlorinated compounds degrade at faster rates when the groundwater is anaerobic (i.e., absence of DO). Measured DO values in the monitoring well samples ranged from 0.04 mg/L to 6.74 mg/L (Table 4), with an average of 1.41 mg/L. Terracon measured anomalously high DO values in monitoring wells MW-02, MW-101, MW-102, MW-106, MW-109, MW-112, MW-115 and MW-116, due to a faulty YSI field meter. Therefore, Table 4 and the average values reported herein, excluded

these errant DO measurement data. Wells screened in saprolite and bedrock exhibited similar average DO values (1.25 mg/L for saprolite and 1.65 mg/L for bedrock). The highest DO value measured in the saprolite wells was 2.53 mg/L in TAMP-MW-8. The highest DO value measured in the bedrock wells was 6.74 mg/L in MW-140, likely due to the air rotary hammer drill method used to the install the well less than 2 weeks prior. Based on the measured DO values, the aquifer would generally be considered slightly aerobic (i.e., greater than 1.0 mg/L) to anaerobic (i.e., less than 1.0 mg/L). This is inconsistent with the preference for the strongly anaerobic conditions required to bioremediate the CVOCs through in situ reductive dechlorination reactions.

4.8.4.1.3 Oxidation-Reduction Potential

ORP (and DO) are important parameters at sites that contain CVOCs because chlorinated compounds degrade at faster rates when the groundwater is anaerobic (i.e., negative ORP values). ORP values measure the tendency of a chemical species to gain (or lose) electrons from (or to) an electrode, respectfully, and as a result, are either reduced or oxidized. Measured ORP values in the monitoring wells ranged from -107.6 milliVolts (mV) to 247.1 mV (Table 4). In general, the ORP values were positive and appreciable differences were not observed between wells screened in saprolite compared to those screened in bedrock, or in on-site wells compared to off-site wells. The lowest ORP values (i.e., strongest reducing conditions) were measured in monitoring MW-108 (-107.6 mV) and MW-109 (-74.6 mV), which are within or adjacent to the former Pilot Test Injection area on the Site. The low ORP values in these wells indicated the potential continued effects of the former remedial injection of emulsified vegetable oils (Solutions-IES, 2005). Negative ORP values were not measured in the other monitoring wells. Based on the measured ORP values, the conditions within the Pilot Test Injection area were more favorable for in situ bioremediation as compared to areas outside the area.

4.8.4.1.4 pH

The hydrogen ion potential (i.e., pH) is the measure of the acidity or alkalinity of a solution. The pH of pure water is 7 standard pH units (s.u.), whereas acidic solutions have a pH of less than 7 s.u. and alkaline solutions have a pH of greater than 7 s.u. Microbial populations can endure a wide pH range. Studies indicated that pH values close to neutral (i.e., 5 to 9 s.u.) are conducive to the proliferation of healthy, diverse microbial populations that drive in situ reductive dechlorination reactions (Arcadis, 2002). When groundwater pH is less than 5 s.u. and evidence of complete dechlorination of the target compounds exist (based on successive groundwater monitoring events), then local microbial populations have adapted to the low pH conditions (Parsons Corporation, 2004) or another abiotic mechanism might be degrading the contaminants.

Measured pH values in the monitoring well samples ranged from 5.15 to 7.15 s.u. (Table 4), with an average of 6.3 s.u. Terracon measured no appreciable differences in wells screened in saprolite as compared to wells screened in bedrock, on-site wells compared to off-site wells, or wells adjacent to the Pilot Test Injection area compared to wells outside of the area. In general, the observed pH values were within the range conducive to in situ bioremediation (i.e., typically 5 to 9 s.u.).

Monitor wells MW-120 exhibited high conductivity and pH values that were likely due to grout contamination. Therefore, Terracon excluded the data from this well within our evaluation. Monitoring well MW-120 should be redeveloped to remove the suspected grout contamination, and thus, allowing the collection of biogeochemical parameter data more representative of typical groundwater conditions.

4.8.4.1.5 Temperature

Measured temperature values in the monitoring wells ranged from 18.4 degrees Celsius (°C) to 30.2°C during sampling (Table 4), with an average of 22°C. Average annual temperatures for shallow groundwater in the region are between 14 and 17°C (USEPA, 2021a). The measurements for wells at the Site are higher than annual averages for the region likely due to the collection period (i.e., Summer) and because the temperatures were measured within flow-through cells that were located above the ground surface, and thus probably were biased due to exposure to ambient atmospheric temperatures and sunlight.

4.8.4.1.6 Turbidity

Turbidity is the measure of suspended particles in water, in units of NTUs. Terracon recorded turbidity measurements when sampling the monitoring wells to determine when the purging activities improved sample quality by reducing the quantity of suspended particles. For the analysis of samples for metals, the goal was to purge the wells until turbidity values were reduced to less than 10 NTUs. Turbidity values in the monitoring well samples ranged from 0.88 to 113 NTUs, with an average value of 12 NTUs (Table 4). In general, the turbidity values measured in the monitoring well were conducive to sampling for dissolved metals; however, turbidity in several wells (MW-111, MW-131, MW-140, and TAMP-MW-8) did not reduce to below 10 NTUs after more than an hour of purging. Further development of these wells should be considered in the future if turbidity remains higher than 10 NTUs (i.e., value sufficient for evaluating dissolved metal concentrations without bias from suspended particles).

4.8.4.2 Total Organic Carbon

The TOC concentrations in groundwater samples indicate the availability of electron donors to help drive biological activity, such as anaerobic reductive dechlorination of chlorinated hydrocarbons. The presence of TOC at low concentrations (i.e., <10,000 micrograms per liter [µg/L] or <10 mg/L) is typically associated with naturally occurring organic matter found in solution (dissolved organic carbon). Very high TOC concentrations (i.e., <1,000,000 µg/L [<1,000 mg/L]) may indicate the presence of anthropogenic carbon sources used to supply electron donors (e.g., emulsified vegetable oil used in the pilot test area) at in situ remediation sites, or may also represent releases of petroleum hydrocarbons from leaking USTs.

TOC concentrations in the monitoring well samples ranged from non-detect (i.e., less than 1,500 µg/L) to 4,000 µg/L (Table 11). The highest detected TOC concentrations were in wells adjacent to the Pilot Test Injection area (MW-108, MW-109, and MW-115). High TOC concentrations were also detected in MW-107 and MW-120, but these were likely due to high concentration of CVOCs and petroleum-related constituents (i.e., benzene). The lowest TOC values were less than 1,000 µg/L and were in wells outside of the Pilot Test Injection area and contaminant plume hotspots.

In general, Terracon considers the TOC concentrations in the Pilot Test Injection area, with concentrations ranging from 2,800 µg/L (MW-115) to 4,000 µg/L (MW-109), as being relatively low concentrations, certainly not greater than the 1,000,000 µg/L target considered to be favorable for providing adequate electron donors to drive enhanced in situ reductive dechlorination reactions. Therefore, the wide-spread injection of additional electron donor would be required to create

conditions more favorable for achieving high rates of in situ biodegradation of the chlorinated compounds.

4.8.4.3 Methane, Ethene, and Ethane

The production of methane gas in a groundwater treatment zone is indicative of an anaerobic groundwater environment favorable to high rates of enhanced reductive dechlorination reactions. Ethene and ethane are end products created after the step-wise reductive dechlorination of PCE to TCE to cis-1,2-DCE and then to vinyl chloride. The presence of ethene and ethane in groundwater could indicate that reductive dechlorination of the COPCs is occurring within the CVOC plume.

Methane values in the monitoring well samples ranged from non-detect (i.e., <5.0 µg/L) to 6,100 µg/L (Table 11). The greatest methane values were detected in the monitoring wells adjacent to the Pilot Test Injection area (MW-108, MW-109, and MW-115), which ranged from 760 µg/L to 6,100 µg/L, indicating strong methanogenic conditions existed in this area of the Site. Lower concentrations of methane, generally below 50 µg/L, were detected in wells outside of the Pilot Test Injection area, which indicated that either low levels of methanogenesis were occurring naturally at the Site, or that methane was being transported to these locations from upgradient areas.

Ethene and ethane were also detected in the monitoring wells adjacent to the Pilot Test Injection area (MW-108, MW-109, and MW-115) indicating that anaerobic reduction of vinyl chloride (i.e., the end products of reductive dechlorination of PCE and its daughter products). Ethene and ethane were not detected in wells outside of the Pilot Test Injection area.

4.8.4.4 Select Metals

The following metals exceeded the 2L Standards in one or more of the monitoring well samples (Table 11):

- Barium: The detected concentration in MW-111 (5,900 µg/L) was greater than the 2L Standard of 700 µg/L. Concentrations detected in the other monitoring wells were less than 200 µg/L.
- Cadmium: The detection concentration in MW-118 (4.7 µg/L) was greater than the 2L Standard of 2 µg/L. Concentrations detected in the other monitoring wells ranged from non-detect (<0.25 µg/L) to 1.3 µg/L.
- Chromium: The detected concentrations in MW-11 (79 µg/L) and MW-111 (13 µg/L) were greater than the 2L Standard of 10 µg/L. Concentrations detected in the other monitoring wells ranged from non-detect (<2.5 µg/L) to 5.6 µg/L.
- Selenium: The detected concentration in MW-139 (53 µg/L) was above the 2L Standard of 20 µg/L. Concentrations detected in the other monitoring wells were less than 2.5 µg/L.

The metals listed above that exceeded the 2L Standards in one or more monitoring wells may represent COPCs; however, the detections above the 2L Standards were scattered across the Site and Terracon observed no trends based on the sample locations. Terracon believes the exceedances could be due to natural conditions and/or metals that were mobilized (i.e., solubilized) due to the anaerobic

conditions established in many areas of the Site. Arsenic, lead, mercury, and silver were not detected above the 2L Standards in the monitoring wells.

4.8.4.5 Volatile Organic Compounds

The laboratory detected numerous VOCs at concentrations greater than the 2L Standards in many of the monitoring well samples (Table 11). The following VOCs were detected above the 2L Standards in one or more monitoring well:

- PCE: Concentrations above the 2L Standard of 0.7 µg/L were detected in numerous on-site and off-site monitoring wells. The highest concentrations were in monitoring wells adjacent to the Waste Oil Transfer area and WAP source areas (MW-107, MW-120, and MW-136). Since 2017, the concentrations of PCE increased in MW-120 and decreased in MW-107. This was the first sample collected from MW-136 and the elevated PCE detection at greater depth indicates a vertical groundwater flow component in the apparent source area. Elevated PCE concentrations (i.e., greater than 10 times the 2L Standard) are primarily located in on-site monitoring wells; however, an elevated PCE concentration of 77 µg/L was detected in one off-site monitoring well (MW-139). Secondary off-site sources, as described in Section 2.2, may be contributing to the elevated PCE concentration in MW-139. PCE is considered a COPC for the Site.

- TCE: Concentrations above the 2L Standard of 3 µg/L were detected in numerous on-site and off-site monitoring wells. The highest detected concentrations were in wells adjacent to the Waste Oil Transfer area and WAP source areas (MW-107, MW-120, MW-136) followed by MW-110 in the northwest portion of the Site. Since 2014, the concentration of TCE in MW-107 and MW-110 decreased. The concentration in MW-120 increased since 2019 but has decreased overall since 2017. This is the first sample collected from MW-136 and the elevated TCE detection at greater depth indicates a vertical groundwater flow component in the apparent source area. In addition, concentrations greater than the 10 times the 2L Standard were detected in several off-site wells including MW-122, MW-124, MW-139, and MW-141. Secondary off-site sources, as described in Section 2.2, may be contributing to the TCE concentrations in these off-site wells based the high concentrations and apparent groundwater flow. This contaminant is considered a COPC.

- Cis-1,2-DCE: Concentrations above the 2L Standard of 70 µg/L were detected in MW-107, MW-108, MW-110, MW-115, MW-118, MW-120, MW-136, and MW-139 and ranged from 70 to 3,600 µg/L. The highest concentration was detected in MW-120. High concentrations were also detected in monitoring wells adjacent to the Pilot Test Injection Area (MW-108, MW-115, and MW-118) indicating that degradation of PCE was occurring in that area. This contaminant is a COPC for the Site.

- Vinyl Chloride: Concentrations above the 2L Standard of 0.03 µg/L were detected in MW-106, MW-108, MW-109, MW-115, MW-117, MW-118, and MW-120 and ranged from 3.5 to 3100 µg/L. The highest concentrations were detected in monitoring wells adjacent to the Pilot Test Injection Area (MW-108, MW-109, MW-115, and MW-118) indicating that degradation of PCE was occurring in that area. This contaminant is considered a COPC.

- 1,1-DCA: Concentrations above the 2L Standard of 6 µg/L were detected in MW-02, MW-107, MW-108, MW-131, MW-136, and MW-137 and ranged from 7.1 to 10 µg/L. 1,1-DCA was also detected below the 2L Standard in several other on-site and off-site monitoring wells. 1,1-DCA is considered to be a COPC due to its predominance in on-site monitoring wells and its frequent industrial use as an industrial solvent. 1,1-DCA is also generated from the anaerobic degradation of 1,1,1-TCA through the reductive dechlorination pathway. 1,1,1-TCA was present in select wells at the Site, albeit at low concentrations.

- 1,2-DCA: Concentrations above the 2L Standard of 0.4 µg/L were detected in MW-108, MW-118, MW-120, and MW-136 and ranged from 1.4 to 260 µg/L. The highest detected concentration was in the on-site monitoring well MW-120. 1,2-DCA was not detected in the other monitoring wells. 1,2-DCA is considered a COPC due to its presence on the Site and due to its historical use in leaded gasoline, that was used and stored on the Site in USTs.

- Carbon Tetrachloride: This compound was detected at 0.42 µg/L in MW-112 which is above the 2L Standard of 0.3 µg/L. The compound was not detected in the other monitoring wells, but has historically been detected in MW-112, indicating a possible localized source.

- Benzene: Concentrations above the 2L Standard of 1 µg/L were detected in MW-02, MW-118, MW-124, MW-130, MW-131, MW-137, and MW-141 and ranged from 0.46 to 4.2 µg/L. Benzene was also detected below the 2L Standard in MW-106 and MW-109. It is considered a COPC due to its presence on the Site from historical petroleum UST releases.

- MTBE: Concentrations above the 2L Standard of 20 µg/L were detected in MW-115, MW-118, and MW-120, and MW-136 and ranged from 25 to 180 µg/L. MTBE was also detected below the 2L Standard in MW-106, MW-108, MW-109, MW-122, and MW-141. MTBE is a COPC due to historical petroleum UST releases at the Site.

4.8.4.6 Semi-Volatile Organic Compounds

The following SVOCs exceeded the 2L Standards in one or more of the sampled monitoring wells:

- Bis(2-ethylhexyl)phthalate: The detected concentration in MW-106 (3.7 µg/L) was above the 2L Standard of 3 µg/L. This compound was not detected in the other sampled monitoring wells.

- Naphthalene: The detected concentration in MW-120 (20 µg/L) was above the 2L Standard of 6 µg/L. This compound was also detected in MW-106 and MW-137 albeit below the 2L Standard.

The compounds listed above represent COPCs due to their detection in on-site monitoring wells and exceedances of the 2L Standards; however, these compounds do not appear to be widely distributed and are primarily located in close proximity to the former UST 9 and Waste Oil Transfer Area. Other SVOCs were detected in the monitoring well samples, but were less than the 2L Standards.

4.9 Soil-Vapor Investigation

4.9.1 On TAMP Property

Based on the results of the RI activities in 2017 and 2019 (Arcadis, 2020), shallow soil vapor points in the northwest portion of the Site identified impacts in soil gas greater than the Non-Residential and Residential VI-SGSLs. Therefore, vapor intrusion is a concern for buildings on the TAMP property. Further evaluations would be required to assess whether additional testing and/or vapor intrusion mitigation systems would be required for existing and/or new structures to protect future occupants of the on-site buildings.

4.9.2 In the Surrounding Neighborhood

Terracon compared the analytical results of soil gas samples collected in July 2022 to the NCDEQ VI-SGSLs (July 2022 version). Toluene was detected in PSG-01 below the Residential and Industrial VI-SGSLs. Total petroleum hydrocarbons (TPH) C10-C35 range was detected in PSG-05; however, a VI-SGSL standard for this analyte does not exist in the July 2022 standards. According to Beacon Environmental, the TPH C10-C35 range included detections of Aliphatic C10-C15, cyclo-aliphatics, branched chain aliphatics, and a couple other petroleum-related aromatic compounds. VOCs were not detected above the laboratory LOQs in the PSG-02, PSG-03, and PSG-04 samples and CVOCs were not detected above the laboratory LOQs in all of the soil vapor samples.

The soil vapor results from Terracon's investigations in 2022 were comparable to the analytical results from off-site soil vapor samples collected in 2019 (Arcadis, 2020), although the 2022 samples covered a smaller area than the 2019 samples. The majority of detections in the off-site soil vapor samples collected by Arcadis were petroleum-related. The July 2022 sample locations are shown on Figure 2. A summary of the results from this investigation are included in Table 12. The laboratory analytical reports, including an image of the chromatogram of the TPH detection, are in Appendix N.

Soil vapor samples have not been collected beneath the former Lucent Technologies facility to the west of the Site (Parcel 139443).

4.10 Data Validation Results

Terracon reviewed and validated the analytical data collected during this RI in accordance with the Tarheel Army Missile Plant UFP-QAPP (Northwind JV and Terracon, 2022), DoD Quality Systems Manual Version 5.3, and analytical method requirements. Qualified data are presented in the analytical results tables (Tables 5 through 7 and Tables 9 through 12). The individual review narratives for each of the data packages and a summary of the PARCC parameters are in Appendix M for each matrix. The sample analytical results were considered usable as qualified based on our review of the data for the PARCC parameters and sensitivity.

5.0 Conceptual Site Model

5.1 Conceptual Site Model Setup

QAPP Worksheet #10 in the UFP-QAPP Work Plan (Northwind JV and Terracon, 2022)included a preliminary CSM to present the environmental framework for evaluating potential data gaps and investigation strategies for the TAMP Site. A CSM is a tool to assist in the development of the investigatory strategy and was intended to convey succinctly what is currently known about the site. Terracon prepared the CSM update herein, and in Appendix O as a result of the data collected throughout the 2022 calendar year. USEPA (2011) defines a the CSM as a comprehensive graphical and written summary of what is known or hypothesized about environmental contamination at a site and the relationships among key site information that are pertinent to decision-making. According to USACE (2012), the CSM should be a representation that changes and evolves over the life cycle of a project, and include both site investigation and cleanup activities. Essentially, the CSM should be a platform for presenting and evaluating potential data gaps and/or other uncertainties with regard to geology, hydrogeology and hydrology; contaminant sources, release mechanisms and fate and transport; potential receptors and exposure pathways.

Terracon developed the CSM for the Site using Microsoft® PowerPoint® format (Appendix O). This format is very effective as a CSM tool, because it is more portable and useable than lengthy written text imbedded into environmental reports. It is also an effective communication tool for Stakeholders and can be easy updated as the project progresses. The following items summarize the primary components of the CSM for the TAMP facility, along with abbreviated responses for some of the key CSM components (within more detailed information included in Appendix O or in other sections of this RI Report):

- What is a "Successful Outcome" for Project?
  - Define data gaps on the northern and western sides of the project
  - Provide data for a future Feasibility Study to select potential remedial alternatives for the Site
- Primary Stakeholders include:
  - United States Army Corps of Engineers
  - City of Burlington
  - Central Park Burlington, LLC (site owner)
  - Local community including nearby property owners
  - Northwind Engineering, LLC

- Stakeholders might use this CSM to:
  - Enable better understanding of the site conditions
  - Help to communicate project status & risk to City of Burlington and the local community
  - Identify potential data gaps in the Remedial Investigation
  - Establish a framework for a future Feasibility Study to select potential remedial alternatives for the Site
- Data Considered for the CSM Update:
  - 2019 Remedial Investigation by Arcadis (2020)
  - 1993 Comprehensive Site Assessment by Roy F. Weston, Inc. (Weston, 1993c)
  - Other historical reports, including reports by Weston (1992, 1993a, 1993b, 1994, 1995a, 1995b, 1998, 2005, and 2006), Solutions-IES (2004, 2005, and 2006), and USACE (2015)
- Facility Background, History, and Environmental Timeline:
  - Refer to the detailed information included in Section 2.0 and Tables 1 and 2
- Geologic Setting:
  - Refer to the detailed information included in Sections 2.5, 2.6, and 2.7
- Chemicals of Potential Concern:
  - Refer to the detailed information in Sections 4.8.4.4, 4.8.4.5 and 4.8.4.6
- Exposure Pathways and Results of HHRA/SLERA:
  - Detailed information for the HHRA and SLERA are in Section 6.0 and Appendix A.
    - The HHRA findings indicated that the COPCs, mainly TCE and PCE, have the potential to cause non-carcinogenic and carcinogenic risks to the on-site and off-site populations based on highly conservative assumptions.
    - The human-health exposure pathways that present the most concern are on-site exposure to contaminated soil and off-site exposure to surface water, relative to the other pathways.
    - The potential risk associated with the vapor intrusion exposure pathway, based on groundwater quality data, suggests a concern for both on-site and off-site properties. However, empirical data (i.e., results from soil-gas samples) indicated that this exposure pathway is not likely present for the off-site properties.

- SLERA for the off-site ecological receptors identified three chemicals of potential ecological concern (COPECs), including TCE, PCE, and vinyl chloride, which were well below their respective ecotoxicity screening values and, therefore, are protective of aquatic life.
- Based on the conservative assumptions and scientific/management decision points presented in the SLERA, we can conclude that ecological risks at TAMP are negligible, therefore, a baseline ecological risk assessment is not warranted.

- Data Gaps:
  - Refer to Section 7.2.
- Potential Alternative Remedial Strategies to include in future Feasibility Study:
  - Refer to Section 5.2.
- Potential Future Steps for 2023 and Beyond:
  - See Table 13.

5.2 CSM Findings and Preliminary Feasibility Study for Potential Remedial Technologies

The primary findings of the CSM include information in prior sections of this RI Report, as well as the data gaps listed in Section 7.2. It also presents the following potential remedial alternatives to be included in a future Feasibility Study:

- <u>Alt #1 (Soil Source Area)</u>
  Excavate PCE & TCE Impacted Soil in Waste Oil Transfer Area
  - Excavate soil that exceeded the Industrial PSRGs (i.e., 60 CY or 90 tons).
  - As a more conservative approach, excavate soil that exceeded the Residential PSRGs (i.e., 150 CY or 230 tons).

  Note: The soil volumes could be larger than these estimates, based on the need for sloping or benching the excavation side walls to ensure safe operating conditions. Also, the screening of excavation spoils during the removal action could determine that additional soil removals may be warranted to remove soils with high CVOC concentrations.

- <u>Alt #2 (Soil and Groundwater Source Areas)</u>
  Same As Alternative #1, plus
  - Construct an infiltration gallery in the bottom of the excavation.
  - Add amendments such as emulsified vegetable oil (or other electron donors) coupled with enriched microbial consortium containing Dehalococcoides sp.

- Add additional amendments 1-2 years later, as required to continue to drive reductive dechlorination reactions.

- Alt #3 (Soil and Groundwater Source Areas, Plus Site-Wide Groundwater Treatment) Same As Alternative #2, plus
  - Construct several treatment transects along the center of and perpendicular to the CVOC plume using multiple rows of ten or more injection wells screened in the bedrock zone. Each injection well transect (i.e., row of injection wells) would be located approximately 1-year travel time separation from the prior injection well transect.
  - Inject amendments into the injection wells, such as Emulsified Vegetable Oil (or other Electron Donors) coupled with enriched microbial consortium containing Dehalococcoides sp.
  - Add additional amendments in 1-2 years later, as required to continue to drive reductive dechlorination reactions in the shallow bedrock zone.

A preliminary timeline for the Feasibility Study and other environmental related activities for the Site are listed in the detailed CSM in Appendix O.

6.0 Human Health and Screening-Level Ecological Risk Assessment

Terracon (2022) completed a HHRA and SLERA update for the TAMP facility, using data from the RI activities performed in 2022, to updated Arcadis' findings as presented in the Draft Remedial Investigation Report dated April 2020. The findings of Terracon's Human-Health Risk Assessment and Screening-Level Ecological Risk Screening are in Appendix A. The purpose of this evaluation was to update the potential for current risks and hazards associated with exposures to contaminated environmental media (soil, groundwater, surface water, and soil gas/vapor intrusion) at the TAMP property (on site) and affected properties (off site) in the adjacent neighborhood. The following subsections describe the activities used to update the HHRA and SLERA completed by Arcadis' Draft Remedial Investigation Report dated April 2020 (Arcadis, 2020).

6.1 Human Health Risk Assessment

Terracon (2022) completed the HHRA update using data obtained during the RI activities conducted in 2022 to evaluate the potential for current risks and hazards associated with exposure to contaminated environmental media (soil, groundwater, surface water, and soil gas/vapor intrusion) at on-site and off-site properties associated with the TAMP facility. The HHRA followed methods in accordance with USEPA guidance documents (USEPA 1989, 2004, 2009, 2014, 2018) and the NCDEQ Risk Calculator (NCDEQ, 2021a and 2022a). The HHRA included a Conceptual Site Exposure Model (CSEM), identified COPCs, used NCDEQ's July 2022 Risk Calculator (NCDEQ, 2021a and 2022b) to evaluate viable exposure scenarios for on-site and off-site receptors. The HHRA also included an uncertainty analysis to discuss variability associated with the risk evaluation. In their 2020 HHRA, Arcadis (2020) concluded that the use of groundwater as a potable water source and direct contact with on-site soil drove risks that were above acceptable hazard indices and cancer risks, primarily due to the presence of high levels of TCE. Arcadis also concluded that all off-site risks resulting from vapor intrusion from COPCs detected in either groundwater or soil vapor were within or below the regulatory benchmarks.

Terracon's HHRA findings (Appendix A) indicated:

- The COPCs, mainly TCE and PCE, have the potential to cause non-carcinogenic and carcinogenic risks to the on-site and off-site populations based on highly conservative assumptions. The human-health exposure pathways that exceeded the risk criteria include:
    - On-Site Exposure Pathways:
        - Exposures to Soil: Resident, non-residential worker, construction worker, and recreator/trespasser.
        - Exposures to Surface Water (In Tunnels): Recreator/trespasser, and thus, a construction worker [**even though this pathway was not directly available in the Risk Calculator].

- Exposures to Vapor Intrusion via Groundwater to Indoor Air: Resident and non-residential worker.

- Off-Site Exposure Pathways:
  - Exposures to Surface Water: Recreator/trespasser.
  - Exposures to Vapor Intrusion via Groundwater to Indoor Air: Resident and non-residential worker.

- The human-health exposure pathways that present the most concern are on-site exposure to contaminated soil and off-site exposure to surface water, relative to the other pathways.
- The results from soil-gas samples did not indicate a risk through the vapor-intrusion pathway for the off-site properties where property owners permitted our access.

6.2 Screening-Level Ecological Risk Assessment

Terracon's SLERA update presents a revised evaluation of risks to the ecology in the area impacted by COPECs at TAMP using Terracon's dataset collected in 2022(Terracon, 2022). This SLERA update provides a conservative estimate of the potential for ecological risk. The SLERA process involved estimating the likelihood that a particular ecological risk exists or focuses on site-specific ecological risk assessments, where warranted. The SLERA followed NCDEQ's Guidelines for Performing Screening Level Ecological Risk Assessments within the North Carolina Division of Waste Management dated October 2003) (NCDENR, 2003).Because the TAMP is an industrial setting, ecological exposure pathways are not present at the on-site property, and access by fauna to contaminated soil and groundwater on the property is not feasible as the areas of COPEC impacted soil are paved with concrete and/or asphalt. The documented conditions in the unnamed tributary to Service Creek located approximately 220 feet west of the TAMP facility represents a completed pathway for exposure to VOCs in surface water. Groundwater was considered only for the potential for seeping into surface water along the unnamed tributary. The CSEM in (Exhibit 3 of Appendix A) shows a direct exposure pathway for aquatic flora and fauna that may be present in the unnamed tributary. The maximum reported concentrations for three COPECs included:

- PCE: 38 µg/L
- TCE: 44 µg/L
- Vinyl Chloride: 0.69 µg/L

The maximum concentrations for each COPEC were at least an order of magnitude or more below the bench ecotoxicity screening values (ESV) for both chronic and acute exposure scenarios. This finding is consistent with those reported by Arcadis (2020). Therefore, there is adequate information to conclude that ecological risks at TAMP are negligible, and a baseline ecological risk assessment is not warranted.

7.0 Conclusions, Data-Gap Analysis, and Recommendations

The following sections summarize Terracon's primary conclusions, data-gap analysis, and recommendations developed from the data collected during 2022 (and prior datasets from 2017 through 2019 [Arcadis, 2020]).

7.1 Summary of Conclusions

The following summarizes Terracon's primary conclusions based on the RI activities described in prior sections of this report:

- Based on the data Terracon collected in 2022 and Arcadis collected in 2017 through 2019, the extents of impacts in soil, groundwater, surface water, water in tunnels, and soil gas (both on and off the Site) are fairly well understood. Arcadis' on-site dataset included soil-gas samples only near buildings along the northern portion of the Site. Terracon's dataset included soil-gas samples only in the neighborhood north and northwest of the Site.

- Terracon closed the data gaps identified by Arcadis (2020) that included further delineation of the groundwater plume in the shallow (saprolite) and deep (bedrock) groundwater zones to the west and the deep (bedrock) groundwater zone to the northwest.

- Based on the windshield receptor survey and responses by City and County officials, the existence and use of water supply wells within 1,500 feet of the Site were highly unlikely. Also, the City of Burlington's Unified Development Ordinance and the 2018 North Carolina State Plumbing Code for residential construction restrict the installation and use of water supply wells when public water supplies are available.

- High frequency soil samples were collected in 2022 in the primary source area for the Site (i.e., the Waste Oil Transfer Area). The data in Figure 9 defined the extents of soil impacts in saprolite above the bedrock surface and provided a reasonable dataset to evaluate and select potential remedial alternatives for a potential future Feasibility Study for this specific area of the Site.

- Samples from soil boring RI-SB-17 exhibited very high concentrations of TCE that ranged from 6,900 mg/kg (4-6 feet bls) to 670 mg/kg (8-10 feet bls). The volume of impacted soil in this region ranges from 60 to 150 CY (90 to 230 tons), depending on whether the remedial soils for this area would be based on exceedances of the Industrial or Residential PSRGs.

- The COPC concentrations in the surface water samples increased downstream from SW-1A, peaked at SW-2A, and decreased downstream of SW-2A. This trend indicated that the main groundwater discharge point of the COPC plume is at or near SW-2A.

- The potentiometric surface data indicated that the unnamed tributary to Service Creek is a groundwater receptor because it receives groundwater from both the east and the west. This is consistent with LeGrand (2004), that describes groundwater transmission through the regolith and interconnected fractures in the underlying bedrock. Both components of groundwater should discharge through seepage into the unnamed tributary to Service Creek. Geologic Cross-Sections A-A' (Figure 15) and B-B' (Figure 16) also show converging groundwater flow, with discharge to the creek coming from both the east and the west.

- The extents of groundwater impacts are fairly well defined, except for the locations discussed in the Data-Gap Analysis (Section 7.2). The following VOCs were detected in one or more monitoring wells at concentrations greater than the 2L Standards PCE; TCE; cis-1,2-DCE; vinyl chloride; 1,1-DCA; 1,2-DCA; carbon tetrachloride; benzene; and MTBE. The SVOCs in the groundwater samples that exceeded the 2L Standards included bis(2-ethylhexyl)phthalate, in one sample, and naphthalene in two samples. The detections of bis(2-ethylhexyl)phthalate and naphthalene were at relatively low concentrations, as compared to the respective 2L Standards.

- The biogeochemical parameter results from the groundwater sampling activities indicated that most areas of the Site are aerobic, excluding the portion of the Site in the vicinity of the former in situ bioremediation pilot test. Even in the former pilot test area, the TOC concentrations were fairly low, and would not cause high rates of in situ bioremediation through the anaerobic reductive dechlorination reaction pathway.

- The human-health exposure pathways that present the most concern are on-site exposure to contaminated soil and off-site exposure to surface water, relative to the other pathways. Even though the potential risk for the vapor intrusion exposure pathway (based on groundwater quality data), suggests a concern for both on-site and off-site properties, empirical data (i.e., results from soil-gas samples) indicated that the vapor intrusion exposure pathway for the off-site properties is not a concern. Future development activities at the TAMP property should consider additional assessment and/or mitigation to address potential vapor intrusion concerns.

- The SLERA concluded that ecological risks at TAMP are negligible, and furthermore, a baseline ecological risk assessment is not warranted.

- A CSM was developed using Microsoft® PowerPoint® format (Appendix O) to provide a portable and effective communication tool for Stakeholders, which can be easily updated as the project progresses.

- Terracon developed a Data-Gap Analysis (in Section 7.2) that summarizes the primary data-gaps and uncertainties regarding the environmental conditions at the Site.

7.2 Data-Gap Analysis

This subsection presents the following data gaps that Terracon identified while evaluating the data and prior to preparation of this report:

- The potential migration pathway from TAMP to the westerly direction toward the former Lucent Technologies facility at 201 N. Cobb Avenue (Parcel 139443), which may be the result of either:
  - fractures or other natural features, and/or
  - existing storm sewer or sanitary sewer backfill that extends from the WAP to the south side of the former Lucent Technologies facility at 201 N. Cobb Avenue (Parcel 139443).
- Complete delineation of the western plume near the northwest corner Building 17 (due east of the Lucent Building) and near the northern and southern sides of the former Lucent Technologies facility.
- Vapor intrusion concerns for the former Lucent Technologies facility.
- Potential off-site sources potentially contributing to groundwater impacts might be the result of:
  - Former Lucent Technologies facility at 201 N. Cobb Avenue (Parcel 139443)
  - Former Elder Hosiery Mills at 139 Homewood Avenue (Parcel 139434)
  - Former dry cleaning city directory sites at 119 North Cobb Avenue (Parcel 139441) and 1846 North Church Street (Parcel 139750)
- The depth of the transition between saprolite and bedrock is not known with certainty, as indicated in Figure 16, due to discrepancies identified in boring logs from wells installed in this portion of the Site.
- The impact to contaminant migration due to tentative plans to dewater of the northern tunnel, per the Owner's suggestion. A deed restriction exists for groundwater recovery; and thus, the Owner should not dewater the tunnels without prior regulatory approvals.
- The variability of vapor intrusion data into houses during the winter-time period (versus summer).
- Potential residual CVOC impacts beneath the WAP that were unable to be evaluated due to destruction and filling in of the WAP during prior removal actions. The concrete and metal debris would need to be removed before additional assessment could occur directly beneath the WAP.
- The current residual petroleum-hydrocarbon concentrations in soil near former UST Nos. 1, 2, 3, 5, 6, 7, and 8.

7.3 Summary of Recommendations

This subsection presents the following recommendations for potential future work at the Site. Refer to Table 13 for additional information regarding potential future activities for the TAMP site.

- Conduct a Feasibility Study to screen and select potential remedial alternatives for the Site. This Feasibility Study might include remedial Alternative Nos. 1, 2, and 3 as presented in Section 5.2.
- Investigate the remaining data gaps identified in Section 7.2, which include:
  - Define the potential migration pathway from TAMP to the westerly direction toward the former Lucent Technologies facility at 201 N. Cobb Avenue (Parcel 139443), which may be the result of either:
    - fractures or other natural features, and/or
    - existing storm sewer or sewer backfill that extends from the WAP to the south side of the former Lucent facility at 201 N. Cobb Avenue (Parcel 139443).
  - Complete the delineation of the western plume with the installation of additional deep monitoring wells at the following locations:
    - near the northwest corner Building 17 (due east of the former Lucent Technologies Building) and
    - along the northern and southern sides of former Lucent Technologies Building.
  - Evaluate the potential vapor intrusion concerns with the former Lucent Technologies facility.
  - If VI samples are to be collected during future scopes of work, then Terracon recommends collecting the samples with summa canisters (in lieu of passive samplers [e.g., Beacon samplers]). This recommendation is based on greater data quality by summa canisters analyzed by Method TO-15, as compared to Beacon samplers analyzed by USEPA Method 8260C. Also, Arcadis (2020) reported a larger number of constituents during the soil-gas sampling events in August 2017, February 2019, and April 2019, as compared to the limited number of constituents (i.e., only toluene and TPH C10-C15) detected in July 2022 using Beacon samplers. Future consultants should obtain concurrence with the regulatory case manager because North Carolina Guidance (NCDEQ, 2018) states passive samplers may be used when shallow soil contamination or groundwater is present at less than 5 feet bls, and are "limited to field screening only during the investigation of the VI."
  - Investigate potential off-site sources contributing to groundwater impacts from the following properties:
    - Former Lucent facility at 201 N. Cobb Avenue (Parcel 139443)
    - Former Elder Hosiery Mills at 139 Homewood Avenue (Parcel 139434)
    - Former dry cleaning city directory sites at 119 North Cobb Avenue (Parcel 139441) and 1846 North Church Street (Parcel 139750)
  - Install one or more borings along Geologic Cross-Section A-A' (Figure 16) to define the depth of the transition between saprolite and bedrock.

- o Investigate the current concentrations of petroleum-hydrocarbon impacts in soil near former UST Nos. 1, 2, 3, 5, 6, 7, and 8.

- A deed restriction exists for groundwater recovery; and thus, the Owner should not dewater the tunnels without prior regulatory approvals.

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- Redevelop monitoring well MW-120 to remove the suspected grout contamination, and thus, allowing the collection of biogeochemical parameter data more representative of typical groundwater conditions.

- MW-136 has an excessively long, screen interval comprised on an open bore. This well is a potential pathway for contamination to reach deeper aquifer units. Therefore, Terracon recommends either:

  - o Abandoning the well or

  - o Performing down-hole geophysics to determine a depth interval that contains significant fractures, then install well screen and casing to the appropriate depths.

- If future monitoring wells are to be installed in the neighborhood to the North and West of the TAMP property, then the future consultants and/or the contracting entities should work with the City of Burlington at least 3 months in advance to permit the installations in the City-controlled right of way. This work should be performed consistent with City of Burlington requirements for right-of-way use applications and typical traffic-control plans (https://www.burlingtonnc.gov/998/Water-and-Sewer-Details).

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Tables

Table 1
Outline of Investigation Timeline from 1998 to 2020
Tarheel Army Missile Plant
Burlington, North Carolina

Year	Author (Company)	Document Date	Document Title	Type of Document	Summary	Source
1988	Camp, Dresser, and McKee (CDM)	Unknown	Phase I Environmental Site Assessment	Preliminary Site Assessment	The purpose was to evaluate the environmental conditions at the facility as a result of the use, storage, treatment and disposal of toxic and hazardous materials.	Consent Agreement for Tarheel Army Missile Plant, NCD# NC7 210 020 544, Burlington, NC dated February 24, 2004
	Environmental Science and Engineering, Inc.	2/1988	Preliminary Assessment/Site Inspection (PA/SI)	Preliminary Site Assessment	This was an update to the Initial Installation Assessment of the TAMP property. The assessment did not find evidence that indicates a potential for contaminant migration from TAMP; therefore, no site investigation by the U.S. Army Toxic and Hazardous Materials Agency (USATHAMA) is recommended at this time. The assessment did determine that the sump beneath the metal finishing area is being eroded by liquid wastes. Therefore, it is recommended that TAMP should conduct a thorough inspection of the sump and investigate the feasibility of applying an impervious protective coating to the sump floor and walls. It was also recommended that USATHAMA should not conduct a remedial investigation at this time.	
1991	Black & Veatch Waste Science Technologies	8/14/1992	Site Investigation Report (SIR)	Subsurface Investigation	The investigation included the installation of three monitoring wells, the drilling of 12 soil borings, collection and analyses of groundwater, surface water, soil, and sediment samples. Additional samples were analyzed and collected from various aboveground tanks, underground storage tanks and air pollution control devices. Findings were similar and/or identical to their 1994 Report.	Source Document.
1992	Roy F. Weston, Inc.	6/1992	Site Investigation at a Former Gasoline Underground Storage Location.	Subsurface Investigation	On April 9, 1992, Weston excavated and removed a small (approximately 100-gallon capacity) gasoline UST from the outside northeast corner of Building 3. The work included the removal of the UST, vent pipe, and a single fuel line leading from the UST. Inspection of the UST identified holes along the top, sides, and bottom of the tank, and the tank appeared to be empty. Soil sample results identified high concentrations in TPH-gasoline, benzene, toluene, ethylbenzene, and xylenes.	Source Document.
1993	North Carolina Department of Environment and Natural Resources (NCDENR)	3/1993	Notice of Violation (NOV)	Regulatory Order	Notice of Violation of NCAC, Title 15A, Subchapter 2L, issued to AT&T, Inc. by NCDENR, March 1993.	Letter from Weston Solutions dated August 6, 2013
	NCDENR	3/1993	Notice of Regulatory Requirements (NoRR)	Regulatory Order	Notice of Regulatory Requirements, issued to AT&T, Inc. by NCDENR, March 1993.	Letter from Weston Solutions dated August 6, 2013
	Black & Veatch Waste Science Technologies	Unknown	Site Investigation Report (SIR) Addendum	Subsurface Investigation	Four soil borings were advanced and an additional monitoring well was installed. Samples collected during this phase were analyzed for volatile organic compounds, semi-volatile organics, pesticides, PCBs, and metals.	Consent Agreement for Tarheel Army Missile Plant, NCD# NC7 210 020 544, Burlington, NC
	Roy F. Weston, Inc.	8/1993	Shallow Subsurface Investigation of Sump and Drain Line Areas Report	Subsurface Investigation	Prepared by WESTON for AT&T, Inc. and submitted to NCDENR in 1993 as an Appendix in the CSA, 1993 submittal. The report included the investigation of three sumps of the Waste Accumulation Pad and drain lines associated with the Wastewater Treatment Building. Elevated concentrations of PCE were identified in the samples beneath the sump. Concentrations of chromium, lead, and zinc were slightly elevated as compared to background soil samples concentrations. The metals concentrations did not appear to be have been released to soils at high concentrations.	Source Document.
	Roy F. Weston, Inc.	8/26/1993	Comprehensive Site Assessment (CSA) Subsurface Soil and Groundwater Investigation at the Waste Accumulation Pad and Underground Storage Tank Areas	Subsurface Investigation	CSA conducted in response to the March 1993 Notice of Violation (NOV) issued by the Department's Division ofEnvironmental Management (now the Division of Water Quality (DWQ). The NOV was issued due to petroleum contamination originating from an underground storage tank (UST) at the Site. The CSA also addressed contamination associated with the waste accumulation pad (WAP). The former UST appeared to have released petroleum hydrocarbons, including benzene, toluene, ethylbenzene and xylenes to surrounding soils in the near vicinity of the site. Directly beneath the former UST, TPH concentrations exceeded estimated allowable limits as calculated following the DEHNR Site Sensitivity Evaluation. The WAP appeared to have released C-VOCs, including PCE and TCE, to the soil in the vicinity of the WAP. Concentrations of C-VOCs, including PCE and TCE, were present in groundwater in the immediate vicinity and downgradient of the WAP at concentrations exceeding NCGWQSs for the respective compounds. WESTON recommended that AT&T proceed with the development of a Corrective Action Plan (CAP) in accordance with correspondence from DEHNR. Development of a CAP should follow guidelines presented in the Groundwater Section Guidelines For The Remediation of Soils and Groundwater. WESTON recommended that, if a pilot study is conducted as part of the CAP (discussed below), the CAP submittal deadline of 60 days indicated in DEHNR correspondence to AT&T should be negotiated with DEHNR. From conversations with DEHNR, alternate schedules could be negotiated to allow for the inclusion of a pilot study as part of a CAP. A SVE/Air Sparge pilot test was recommended in order to document system remedial effectiveness and aid in its design. Should soil vapor extraction or air sparging prove to be marginally effective in remediation of subsurface hydrocarbons, other remedial approaches or alternatives will be reevaluated. Additional hydrologic testing should be performed as part of the CAP. Existing data is based on slug testing, which did not significantly stress the aquifer, and is therefore subject to potential inaccuracies. More reliable hydrologic data is needed to assist in the design of a remedial system.	Source Document.

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Burlington, North Carolina

Year	Author (Company)	Document Date	Document Title	Type of Document	Summary	Source
1994	B&V Waste Science and Technology Corp.	6/1/1994	Preliminary AssessmentJSite Inspection (PA/SI)		B&V Waste Science and Technology Corp. (BVWST) conducted a site investigation at the Tarheel Army Missile Plant (TAMP) facility to determine if contamination of soil and groundwater had occurred due to past operational and disposal practices, and to provide data to aid in determining a disposal method for various storage tanks, air pollution control equipment and electrical transformers at the TAMP facility. BVWST collected environmental samples from the TAMP in December 1991, January 1992, and October 1993. Primary findings included: (i) Subsurface Soils - historical investigations determined that impacted soils were present at the facility. Beryllium was the only constituent that was detected in the soil samples above the proposed RCRA Corrective Action Level (for beryllium is 0.2 mg/kg). However, all of the beryllium concentrations in the soil samples were within the range of regional background concentrations in the southeastern United States. (ii) Groundwater - noted multiple exceedances of the NC Groundwater Standards. (iii) Surface Water - exceedences were noted for zinc and VOCs. (iv) Sediments - exceedences were noted for chloradane, antimony, beryllium, zinc, lead, and TRPHs.	Source Document.
1995	Weston Solutions, Inc.	8/6/2013	Unknown	Groundwater Monitoring	Semi-annual groundwater monitoring from 1995 through 2004, at which time the USAEC assumed the monitoring responsibilities while it conducted the in-situ bioremediation pilot test	Letter from Weston Solutions dated August 6, 2013
1996	Environmental Science and Engineering	1996	Final Environmental Assessment	Subsurface Investigation	Prepared by Environmental Science and Engineering, Inc. for the U.S. Army Corps of Engineers (USACE, 1996).	Letter from Weston Solutions dated August 6, 2013
1997	U.S. Army Corps of Engineers	12/1997	Abandonment of Two Wells and Additional Sampling at Former UST #3	Subsurface Investigation	The U.S. Army Corps of Engineers (USACE) contracted ICF Kaiser Engineers (ICF KE) to abandon two non-potable water wells, and to drill and sample one soil boring in the vicinity of the former Underground Storage Tank (UST) #3. The wells were no longer needed to produce water for the installation. The purposes of the soil boring was to collect soil and groundwater samples to determine the presence or absence of contamination near the UST #3 vent pipe and to verify the results of previous investigations. A small number of analytes exceeded North Carolina RCs and 2L Standards. Because TAMP may be considered a low priority site as discussed in Section 4, further action may not be required at this time in the vicinity of the vent pipe for UST #3. Although the site may be re-evaluated with the establishment of the North Carolina DEHNR risk-based program, no target analyte in the subsurface soil or groundwater samples was detected above the USEPA Region III RBCs, which indicates that risk to human health in the vicinity of the vent pipe for UST # 3 is unlikely based on the limited analytical results from this investigation. Therefore, the need for corrective action is unlikely.	Source Document.
2002	Weston Solutions, Inc.		Semiannual Monitoring Report, May 2001 to October 2001	Groundwater Monitoring	Prepared by WESTON for Lucent Technologies, Inc., submitted to NCDENR in 2002.	Letter from Weston Solutions dated August 6, 2013
2011	Weston Solutions, Inc.		Final Sitewide Groundwater Sampling Report and Building Nos. 2 and 3 Soil Boring Investigation		Prepared by WESTON for Alcatel-Lucent USA Inc. (ALU) in 2011.	Letter from Weston Solutions dated August 6, 2013
2015	U.S. Army Corps of Engineers	9/2015	Sampling Report	Remedial Investigation Report	In August 2014, USACE personnel collected samples from twenty two existing monitoring wells and one temporary screen point within the TAMP boundary. Samples were also collected from two temporary screen points, one well and three surface water locations downgradient of the TAMP to evaluate potential offsite migration. USACE crews attempted to install eight screen points but only encountered groundwater in two. In August 2015, USACE personnel installed six temporary monitoring wells west of the TAMP boundary and sampled them in August 2015. Concentrations of CVOCs persist within the TAMP boundary and appear to be migrating offsite to the west-northwest where the groundwater encounters an effluent stream. The effluent stream acts as groundwater discharge area and flow boundary. It is considered improbable that the analytes could migrate across the boundary and contaminate the area west of the stream. The fact that a detection above regulatory standards was found in the groundwater west of the stream suggests the possibility of other sources of contamination. In addition, it appears that contaminants may be moving along a preferential flow path towards the northeast corner of the property. A large diameter north-south oriented tunnel is believed to exist between the northeast corner of the facility and the building located immediately north of the source. It is possible that this tunnel has created a preferential flow path allowing contaminants to move from the source to the northeast corner before migrating offsite in the directions of groundwater flow.	Source Document.

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Tarheel Army Missile Plant
Burlington, North Carolina

Year	Author (Company)	Document Date	Document Title	Type of Document	Summary	Source
2017	North Carolina Department of Health and Human Services, Department of Public Health (DPH)	3/15/2017	Evaluation of Physical Hazards at the Tarheel Army Missile Plant (TAMP) Site.	Human Health Evaluation	The DPH Recommended: - The property owner should immediately restrict access to the site to only those who are involved in the site investigation or remedial activities. This includes repairing any breaches in buildings, doors, and perimeter fencing. - The property owner immediately restricts remedial workers' access to the buildings on-site until roofs and other potentially falling materials are stabilized or removed. Due to the age of the buildings on site, the presence of asbestos in building materials should be evaluated prior to any demolition or remodel work. - The property owner immediately post signs alerting remedial workers to physical hazards on site and appropriate personal protective equipment (PPE) needed on site. Signs should be maintained until physical hazards are removed. - Remedial workers at the site wear appropriate PPE to protect themselves from physical hazards on site.	Source Document.
	Arcadis	5/2017	Final Work Plan for Remedial Investigation and Feasibility Study	Remedial Investigation Work Plan	The proposed work included several phases of investigation including (I) water level measurements and baseline groundwater/surface water sampling, (II) monitoring well installation and groundwater sampling, and (III) soil sampling and vapor intrusion investigation.	Source Document.
2020	Arcadis	4/2020	Draft Remedial Investigation Report	Remedial Investigation Report	The work included several phases of investigation: (I) three water-level gauging events in June 2017, August 2017, and February 2019, and baseline groundwater/surface water sampling in June 2017, (II) installation of 16 new monitoring wells (MW-119 through MW-136 [excluding MW-125]) to further define the lateral extents of the plume, and (III) collection of soil vapor samples in February and April 2019.	Source Document.

Table 2
Outline of Remediation Timeline from 1998 to 2013
Tarheel Army Missile Plant,
Burlington, North Carolina

Year	Author (Company)	Document Date	Document Title	Type of Document	Summary	Source
1988	NCDEQ DWM Superfund Section	2/19/2004	Consent Agreement for Tarheel Army Missile Plant, NCD# NC7 210 020 544, Burlington, NC	Consent Agreement	Consent Agreement	Consent Agreement for Tarheel Army Missile Plant, NCD# NC7 210 020 544, Burlington, NC
1993	Roy F. Weston, Inc.	8/23/1993	Site Investigation at a Former Gasoline Underground Storage Tank (UST-9)	UST Closure Assessment	A 110-gallon gasoline UST, referred to as UST-9, was removed from the Site in April 1992. The UST was located outside of Building 20 and was used to service an emergency generator. Sampling during the UST removal indicated petroleum impacts in the soil and groundwater surrounding the UST-9 area (Four Seasons, 1992). Elevated concentations of TPH-Gasoline were detected in the UST Closure samples in April 9, 1992. A visible sheen was present on the water table.	Source Document
1994	Roy F. Weston, Inc.	11/22/1994	Corrective Action Plan (CAP) for the Waste Accumulation Pad and the Former Underground Storage Tank Areas	Corrective Action Plan	The CAP proposed the installation of a soil vapor extractiion/air sparging (SVE/AS) system to address the presence of volatile and semi-volatile organic compounds in the soil and groundwater. The CAP also included a well survey that did not identify active water supply wells within 1,500 feet of the site.	Source Document
1995	Not known	Not known	Not known	Corrective Action Plan Implementation	The SVE/AS system was installed in the fall of 1995, prior to the CAP approval. Analytical data to date show minimal decreases in concentration of chlorinated solvents in the soil and groundwater. Aromatic VOCs, however, are decreasing in concentration in the soil and groundwater.	Consent Agreement for Tarheel Army Missile Plant, NCD# NC7 210 020 544, Burlington, NC
	Roy F. Weston, Inc.	4/11/1995	Initial Site Charectorization Report for Underground Storage Tanks UST #5, #6, and #7	Initial Abatement Measures Report	Weston prepared this Initial Site Characterization Report to address petroleum hydrocarbon releases to the environment associated with USTs numbers 5, 6 and 7, which had been previously removed from the TAMP facility. The releases were first suspected during removal of the tanks as part of tank closure activities conducted on January 18, 1995. On March 2, 1995, approximately 316 tons of petroleum contaminated soil were transported from the TAMP to Stalite Environmental, Inc., located in Gold Hill, North Carolina for thermal reclamation. A monitoring well was advanced within the location of the former tanks, placed towards the western third of the excavation, where TPH - Gasoline concentrations in the soil at the base of the pit were most elevate. No sheen and no free product were visible in samples collected from the well. The monitoring well was then developed by pumping and bailing. TPH - Diesel was not detected in any samples at the site; therefore, the data indicate that diesel fuel has not been released to the environment. TPH - Gasoline was detected in five soil samples collected from the base of the excavation; one or possibly both of the former gasoline-containing USTs appears to have released gasoline to the soils underlying the former USTs. The lateral extent of impacted soil had been delineate. Partial remediation of the site has been effected through the removal of all impacted soils to a depth of approximately 12 feet BGS. No free product and no sheen were observed on the surface of the groundwater in wells located in the vicinity of the former USTs. The groundwater monitoring plan presented in the CAP includes the installation of four additional monitor wells, with one of,the planned wells to be located directly downgradient of well MW-113. No additional investigation or other activities associated with the former USTs 5, 6, and 7 are recommended.	Source Document
	Roy F. Weston, Inc.	6/23/1995	Initial Site Charectorization Report for Underground Storage Tanks UST #3 and #8	Initial Abatement Measures Report	Weston prepared the Initial Abatement Measures Report to address a release of petroleum hydrocarbons to the environment. The release is associated with former underground storage tank (UST) number 8, now removed from the TAMP, and the supply piping that connected UST number 3 with a day tank located inside Building number 1A. Both tanks were used to store diesel fuel. No free product and no sheen were observed on the surface of the groundwater in borings and wells located in the vicinity of the former UST 3 vent pipe or former UST 8 . The TPH concentrations of TPH (as diesel range organics) and TPH (as gasoline range organics) in soil at the former UST 3 site did not exceed the Final TPH Cleanup levels identified on the Site Sensitivity Evaluation (SSE) Form. No further investigation was warranted and no remediation of soil or groundwater was recommended for UST 3. At UST 8, TPH - Diesel appearred to be generally limited the immediate vicinity of the UST 8 excavation, but also extended north of the former UST to at least 45 feet north of UST 8. Records of petroleum USTs maintained by the NCDEHNR- Underground Storage Tank Division originally indicated that AT&T Technologies, Inc. was the owner of all tanks at the TAMP. This information was in error, as AT&T leased the property from MICOM and never owned the property; the tanks were included under the facility lease and remained with the property when AT&T's lease expired in March 1992. This error was corrected in a letter dated 4 February 1993, submitted to DEHNR-UST by AT&T. Attached to this letter was the annual bill for tank fees, marked to reflect the corrected ownership of the tanks. The February 1993 letter (with attached bill) are provided in Appendix A.	Source Document

Table 2
Outline of Remediation Timeline from 1998 to 2013
Tarheel Army Missile Plant,
Burlington, North Carolina

Year	Author (Company)	Document Date	Document Title	Type of Document	Summary	Source
1996	Weston Solutions, Inc.	8/6/2013	Not known	Corrective Action Plan Implementation	Operation of a SVE system was conducted from 1996 through 2004.	Letter from Weston Solutions dated August 6, 2013
1998	Weston Solutions, Inc.	7/24/1998	Quarterly Monitoring Report for February 1998 to April 1998	Corrective Action Plan Implementation	Weston prepared this quarterly monitoring report to document monitoring activities and evaluate remediation progress of the soil and groundwater remediation system (AS/SVE) over the period of February 1998 through April 1998. After nine quarters of system operation, concentrations of VOCs in groundwater at the site have decreased at most monitoring locations, relative to baseline, pre-remediation concentrations. The primary recommendations in report included: (i) Continue operation and monitoring of the remediation system in all areas of the site, including continued pulsed operation of the soil vapor extraction system and the air sparging system. (ii) Proceed with the evaluation of potentially applicable remedial options for use with respect to wells MW-104, MW-110, MW-111, and MW-112 in the northwest comer of the facility and implement the remedial option selected by the evaluation.	Source Document
	Weston Solutions, Inc.	1988	CAP Addendum	Corrective Action Plan	The CAP was modified in June 1998 (in the CAP Addendum) to include the installation of four pumps (the P&T system) in existing monitoring wells in order to provide hydraulic gradient control of the plume in the northwest comer of the Site.	Consent Agreement for Tarheel Army Missile Plant, NCD# NC7 210 020 544, Burlington, NC and Letter from Weston Solutions dated August 6, 2013
					The CAP and CAP Addendum were approved by the DWQ in October 1998. Activities required by the CAP and the CAP addendum are ongoing.	Consent Agreement for Tarheel Army Missile Plant, NCD# NC7 210 020 544, Burlington, NC
1999			Not known	Corrective Action Plan Implementation	Operation of a groundwater pump and treat extraction system conducted from 1999 to the summer of 2013.	Letter from Weston Solutions dated August 6, 2013
2002					In August 2002, the Army and Division agreed to a Remedial Action Plan Outline (RAPO) setting forth additional remedial action to be taken by the Army with respect to chlorinated solvent contamination in the groundwater at the Site. The RAPO is attached hereto as Exhibit B and is referenced further in Section V below (Work To Be Performed).	Consent Agreement for Tarheel Army Missile Plant, NCD# NC7 210 020 544, Burlington, NC
2003	Weston Solutions, Inc.		TAMP UST Closure Plan	UST Closure Documentation	Prepared by WESTON for Lucent Technologies, Inc., submitted to NCDENR in 2003.	Letter from Weston Solutions dated August 6, 2013
	Solutions-IES, Inc	12/2003	Soil Sampling Plan	Remediation Status Report	The objective of the December 2003 Soil Sampling Plan prepared by Solutions-IES was to evaluate whether the SVE/AS system has reduced contaminant concentrations in the vadose zone of soil in the vicinity of the WAP and UST 9 to levels that are below the soil cleanup criteria (i.e., the target remedial endpoints). To accomplish this objective, soil samples would be collected at the same locations that were initially sampled in 1993.	Source Document
	C.C. Johnson & Malhorta	5/21/2003	Tarheel Army Missile Plant Remedial Action Plan, Final Report	Remedial Action Plan	A preliminary evaluation ofalternative remedial actions was performed and presented to the NCDENR. A wide range ofalternatives were screened. The most feasible alternatives for remediating soil and groundwater were retained for further evaluation. The soil remediation alternatives evaluated were: • continued operation ofthe SVE/ AS system, and • capping. Given that soil remediation was almost complete anyway, the continued operation of the SVE/AS system was recommended as the best alternative. The groundwater remediation alternatives evaluated were: • monitored natural attenuation while continuing operation ofthe pump and treat and SVEIAS systems, • carbon dioxide sparging, • in situ anaerobic bioremediation using molasses, • in situ anaerobic bioremediation using edible oil, • in situ anaerobic bioremediation using HRC, • in situ chemical oxidation, • in situ aerobic cometabolic bioremediation, and • in situ aerobic bioremediation using engineered bacteria. In situ bioremediation using edible oil was recommended as the best alternative.	Source Document

Table 2
Outline of Remediation Timeline from 1998 to 2013
Tarheel Army Missile Plant,
Burlington, North Carolina

Year	Author (Company)	Document Date	Document Title	Type of Document	Summary	Source
2004	Unknown		SVE Temporary Shutdown Letter Request	Corrective Action Plan Implementation	To facilitate anaerobic bioremediation pilot study, made by Lucent Technologies, Inc. and approved by NCDENR, 2004.	Letter from Weston Solutions dated August 6, 2013
	Solutions-IES, Inc	2004	Remediation Work Plan	Remedial Action Plan for Pilot Test	The pilot study was designed to reduce CVOCs in a large area of ~100 feet by ~100 feet, and ~10-foot thick zone extending from the top of bedrock upward through the transition zone and extending a short distance into the saprolite. The pilot test design included injection of 2,640 gallons (~22,000 lbs) of EOS® concentrate with 212,560 gallons of water. The design included eight injection/recovery wells installed approximately 30 to 35 feet apart. The first phase of EOS® injection began on June 29, 2004. The second injection phase began on September 10, 2004. The design consisted of EOS® injection followed by temporary recirculation of groundwater ("chase water") recovered from the test area to distribute the substrate throughout the targeted treatment zone. This was performed to overcome several design challenges: an underground tunnel, the presence of subsurface utilities, and a relatively low-yielding aquifer.	Report of Groundwater Remediation Pilot Test Effectiveness (Solutions-IES, Inc, 2005)
	Solutions-IES, Inc	10/29/2004	Soil Sample Results	AS/SVE Pilot Test Evaluation	Solutions-IES collected soil samples to evaluate whether the SVE/AS system had reduced contaminant concentrations in the vadose zone of soil in the vicinity of the WAP and UST 9 to levels that below the soil cleanup criteria (i.e., the target remedial endpoints). To accomplish this objective, Solutions-IES collected soil samples at the same locations initially sampled in 1993. The 2004 data suggested operation of the AS/SVE system and natural processes have successfully reduced the concentration of contaminants in soil to levels that were below the target remedial endpoints for 10 of the 12 locations. Should further reduction of the contaminant concentrations be warranted along the north wall of Building No.2, other remediation methods may prove to be more effective than continued use of the existing SVE/AS system.	
	NCDENR	2004	Underground Injection Permit WI00037	Corrective Action Plan Implementation	Issued to Solutions-IES, Inc. and USAEC for injection and recirculation of bioremediation fluids, 2004.	Letter from Weston Solutions dated August 6, 2013
2005					United States Army Environmental Center (USAEC) conducted an in-situ bioremediation pilot test from 2005 to 2007 pursuant to an agreed Consent Order with NCDENR.	Letter from Weston Solutions dated August 6, 2013
	Weston Solutions, Inc.	6/13/2005	Soil Cleanup Report with Site Closure Request (i.e., for USTs 5, 6, 7, 8, and 9)	Corrective Action Plan Implementation	WESTON collected soil samples from USTs 5, 6, 7, 9, and 9 in January 2005 to assess closure status of the USTs. Soil analytical results from USTs 5, 6, and 7 indicated concentrations were below Industrial/Commercial Clean-up levels, but not the Residential Clean-up Levels. Soil analytical results for USTs 8 and 9 indicated concentrations were below both the Residential Clean-up Levels and Industrial/Commercial Clean-up levels. Therefore, Lucent provided public notice by a No Further Action Letter (Appendix C in the report) in accordance with North Carolina 15A NCAC 2L .OI159k) to the Alamance County Health Director, and contiguous property owners.	Source Document
	Solutions-IES, Inc	11/2005	Report of Groundwater Remediation Pilot Test Effectiveness	Corrective Action Plan Implementation	THE EOS® pilot test created conditions favorable for MNA of CVOCs within the pilot test treatment area and approximately 100 to 150 feet downgradient. As expected, the northwest side of the site (MW-I10 vicinity) was unaffected.	Source Document

Table 2
Outline of Remediation Timeline from 1998 to 2013
Tarheel Army Missile Plant,
Burlington, North Carolina

Year	Author (Company)	Document Date	Document Title	Type of Document	Summary	Source
2006	Solutions-IES, Inc	8/11/2006	Interim Progress Report for Groundwater Remediation and Bioaugmentation Activities	Corrective Action Plan Implementation	Elevated TCE concentrations have been successfully addressed in the pilot test area using EOS®. However, cis-1,2-DCE and VC have persisted. Although there was evidence that a native Dehalococcoides spp. population was stimulated by the original introduction ofEOS® substrate, the degradation of the daughter products to ethene was incomplete. Therefore, bioaugmentation was undertaken. Initial results suggested that the recent bioaugmentation was effective in further removing the daughter CVOCs. Cis-1,2-DCE remained below the 2L Standard in all pilot test area wells. VC concentrations decreased in virtually all of the monitored wells. As of April 2006, two pilot test area wells and four other site monitoring wells are the only wells that contain detectable concentrations of VC. However, any detectable concentration exceeds the 2L Standard. Future sampling of the pilot test wells will be used to continue to evaluate contaminant trends at the site and the impact of the KB-I (Dehalococcoides) inoculant.	Source Document
	Weston Solutions, Inc.	2006	Soil Cleanup Report Addendum/Site Closure Request	Corrective Action Plan Implementation	Prepared by WESTON for Lucent Technologies, Inc., submitted to NCDENR UST Section, 2006.	Letter from Weston Solutions dated August 6, 2013
2007	Solutions-IES, Inc	2007	Interim Progress Report for Groundwater Remediation and Bioaugmentation Activities	Corrective Action Plan Implementation	Prepared by Solutions-IES, Inc. for USAEC, 2007	Letter from Weston Solutions dated August 6, 2013
	Weston Solutions, Inc.	2007	Notice of Residual Petroleum	Corrective Action Plan Implementation	Prepared by WESTON for Lucent Technologies, Inc., submitted to NCDENR UST Section, 2007.	Letter from Weston Solutions dated August 6, 2013
	NCDENR	2007	UST Section Approval Letter for UST NFA/NORP Request	Regulatory Approval		Letter from Weston Solutions dated August 6, 2013
2012	Lucent	12/2012	Quarterly Pump and Treat Effluent Report	O&M Report		Letter from Weston Solutions dated August 6, 2013
2013	Kathleen M. Whitby, Spencer, Fane, Britt, & Browne LLP	6/28/2013	Notice to Preserve Environmental Remediation Equipment and Claim of Response Costs	Regulatory Correspondence	Spencer, Fane, Britt, & Browne LLP (Attorney) representing Alcatel-Lucent USA, Inc. notified Jay Jones of American Media International, LLC (a press company) and Freedom Fuels LLC that Freedom Fuels LLC has purchased the TAMP property, and intends to perform demolition and scrap recovery activities at the facility. John Walsh of the NCDENR-Inactive Sites Branch was CC:'d on the transmittal. Spencer, Fane, Britt, & Browne LLP was informating Freedom Fuels LLC that the remediation equipment should not be disturbed and than surface and subsurface soils and groundwater at the TAMP facility may be impacted with hazardous substances and petroleum compounds. In addition, they will require reimbursement for all engineering and oversight expenses incurred in attempting to preserve the installed remediation systems now, and to restore, repair and reinstall them after the demolition is concluded. These expenses all qualify as "response costs" under the Superfund law and would not be necessary, but for the demolition activities currently ongoing at the facility.	Source Document
	John Walsh, NCDENR-Inactive Sites Branch	7/12/2013	Response Letter to Spencer, Fane, Britt, & Browne LLP	Regulatory Correspondence	John Walsh informed Kathleen Whitby that the remedial activities being conducted by Alcatel—Lucent USA, Inc. (ALU) at the TAMP Site were being performed independently without state oversight and approval. If ALU would like to receive state approval for future assessment and cleanup activities at the Site, then they can enter into the Inactive Hazardous Sites Branch's Voluntary Cleanup Program. John informed ALU that to participate in the voluntary cleanup program, ALU would need to enter into an administrative agreement with the Branch. Depending on the severity of the Site, oversight and approval ofthe work could also proceed through the "privatized" oversight program known as the Registered Environmental Consultant Program, or under direct oversight by the Branch staff.	Source Document

Table 3
Monitoring Well Construction Information and Groundwater Elevations (June 2017 to October 2022)
Tarheel Army Missile Plant
Burlington, North Carolina

										Measurement Date:	6/5/2017		8/1/2017		2/6/2019		8/8/2022		10/27/2022	
Well ID	Hydrostatigraphic Unit	Status	Latitude (°North)	Longitude (°West)	Top of Casing Elevation (Feet msl)	Screen Interval (Feet btoc)			Depth of Well (Feet bls)		Depth to Water (Feet btoc)	Groundwater Elevation (Feet msl)	Depth to Water (Feet btoc)	Groundwater Elevation (Feet msl)	Depth to Water (Feet btoc)	Groundwater Elevation (Feet msl)	Depth to Water (Feet btoc)	Groundwater Elevation (Feet msl)	Depth to Water (Feet btoc)	Groundwater Elevation (Feet msl)
MP-01	--	Active	36.0981942	-79.40754842	604.05	5.5	-	15.5	16		10.25	593.80	10.62	593.43	9.80	594.25	10.26	593.79	10.68	593.37
MP-02	--	Active	36.09813614	-79.40762409	604.12	5.5	-	15.5	16		10.28	593.84	10.68	593.44	9.59	594.53	10.27	593.85	10.74	593.38
MW-02	Saprolite	Active	36.09911955	-79.40673891	596.91	7	-	17	18.5		4.32	592.59	4.84	592.07	--	--	4.67	592.24	5.28	591.63
MW-05	Saprolite	Active	36.09670507	-79.40670303	610.42	13.5	-	23.5	24		15.20	595.22	15.53	594.89	13.39	597.03	15.65	594.77	16.21	594.21
MW-11	Saprolite	Active	36.09809794	-79.40748518	604.61	10	-	20	20.5		10.85	593.76	11.16	593.45	10.36	594.25	10.82	593.79	11.24	593.37
MW-101	Saprolite	Active	36.09813419	-79.40896791	604.80	14.9	-	24.9	24.9		13.25	591.55	14.30	590.50	12.62	592.18	13.84	590.96	14.46	590.34
MW-102	Saprolite	Active	36.09872319	-79.40862565	595.76	6	-	16	16		6.08	589.68	6.46	589.30	5.93	589.83	6.21	589.55	6.15	589.61
MW-103	Saprolite	Active	36.09866206	-79.40718678	595.69	9	-	19	19		2.83	592.86	3.18	592.51	2.75	592.94	3.38	592.31	3.46	592.23
MW-104	Bedrock	Active	36.09887155	-79.40944215	602.90	17	-	27	27		23.70	579.20	23.33	579.57	23.04	579.86	24.24	578.66	24.45	578.45
MW-105	Saprolite	Active	36.09694877	-79.4094053	608.31	17.5	-	27.5	27.5		22.07	586.24	22.38	585.93	20.41	587.90	22.30	586.01	22.57	585.74
MW-106	Saprolite	Active	36.09810737	-79.40795233	604.79	6.5	-	16.5	16.5		10.00	594.79	10.64	594.15	10.21	594.58	10.38	594.41	10.63	594.16
MW-107	Saprolite	Active	36.09816628	-79.40758369	604.15	13	-	23	23		10.22	593.93	10.60	593.55	9.74	594.41	10.21	593.94	10.68	593.47
MW-108	Saprolite	Active	36.0984332	-79.40744626	599.45	5.5	-	0	15.5		6.35	593.10	6.71	592.74	6.28	593.17	6.61	592.84	6.83	592.62
MW-109	Saprolite	Active	36.09853277	-79.40806619	597.31	4.5	-	14.5	14.5		4.90	592.41	5.23	592.08	--	--	5.18	592.13	5.31	592.00
MW-110	Bedrock	Active	36.09887346	-79.40887012	603.25	25	-	35	35		20.75	582.50	21.12	582.13	20.11	583.14	21.56	581.69	21.75	581.50
MW-111	Bedrock	Active	36.09863677	-79.40900431	603.82	25	-	35	35		22.55	581.27	22.63	581.19	21.35	582.47	22.80	581.02	23.20	580.62
MW-112	Bedrock	Active	36.09901925	-79.40963245	602.63	25	-	35	35		28.25	574.38	28.84	573.79	26.77	575.86	9.23	593.40	29.64	572.99
MW-113	Saprolite	Active	36.09840357	-79.4072701	603.06	18.6	-	28.6	28.6		9.72	593.34	9.97	593.09	6.35	596.71	9.82	593.24	10.11	592.95
MW-114	Saprolite	Active	36.09909148	-79.40692155	595.93	14	-	24	24		3.85	592.08	4.18	591.75	3.24	592.69	3.82	592.11	4.71	591.22
MW-115	Saprolite	Active	36.09860844	-79.40761639	596.51	4.5	-	14.5	14.5		3.82	592.69	5.65	590.86	4.84	591.67	4.50	592.01	4.34	592.17
MW-116	Saprolite	Active	36.09838224	-79.40707705	603.76	23	-	33	33		10.28	593.48	10.59	593.17	6.43	597.33	10.44	593.32	10.83	592.93
MW-117	Saprolite	Active	36.09824123	-79.40817302	604.04	13	-	23	23		9.90	594.14	10.54	593.50	10.64	593.40	10.46	593.58	10.51	593.53
MW-118	Saprolite	Active	36.09893396	-79.40756088	597.01	8	-	18	18		4.15	592.86	4.65	592.36	4.13	592.88	4.65	592.36	4.71	592.30
MW-119	Saprolite	Active	36.10066363	-79.40935989	580.18	10	-	20	20		--	--	8.03	572.15	5.19	574.99	9.14	571.04	8.67	571.51
MW-120	Bedrock	Active	36.0980585	-79.40772946	604.73	31.5	-	36.5	36.5		--	--	11.18	593.55	10.22	594.51	10.81	593.92	11.24	593.49
MW-121	Bedrock	Active	36.09886166	-79.40893885	602.49	53	-	58	58		--	--	21.13	581.36	20.22	582.27	21.76	580.73	21.72	580.77
MW-122	Bedrock	Active	36.09844294	-79.41175224	587.12	26	-	36	36		--	--	12.70	574.42	11.53	575.59	12.61	574.51	12.58	574.54
MW-123	Bedrock	Active	36.099608	-79.411511	586.05	28	-	38	38		--	--	16.32	569.73	15.51	570.54	15.87	570.18	15.84	570.21
MW-124	Bedrock	Active	36.099622	-79.410811	575.25	35	-	45	45		--	--	10.22	565.03	8.98	566.27	5.86	569.39	9.99	565.26
MW-125	--	Abandoned	36.09965193	-79.40983769	--	NA	-	NA	53		--	--	--	--	--	--	--	--	--	--
MW-126	Saprolite	Active	36.10112556	-79.41147101	569.63	5	-	10	10		--	--	--	--	6.20	563.43	9.17	560.46	9.85	559.78
MW-127	Saprolite	Active	36.0998544	-79.41102795	578.73	9	-	19	19		--	--	--	--	15.37	563.36	16.83	561.90	16.67	562.06
MW-128	Saprolite	Active	36.09913391	-79.41118221	578.84	6	-	11	11		--	--	--	--	8.24	570.60	10.18	568.66	10.18	568.66
MW-129	Saprolite	Active	36.099667	-79.409831	587.06	11	-	21	21		--	--	--	--	12.90	574.16	17.01 (1)	570.05	17.09	569.97
MW-130	Saprolite	Active	36.099742	-79.40825	587.44	5	-	20	24		--	--	--	--	3.20	584.24	4.65	582.79	4.66	582.78
MW-131	Saprolite	Active	36.09959912	-79.40723398	590.10	6	-	16	16		--	--	--	--	2.87	587.23	4.26	585.84	4.25	585.85
MW-132	Saprolite	Active	36.09895453	-79.40958598	603.63	16	-	26	26		--	--	--	--	23.98	579.65	25.78	577.85	26.05	577.58
MW-133	Bedrock	Active	36.09987249	-79.41103066	578.60	20	-	30	30		--	--	--	--	15.39	563.21	16.74	561.86	16.63	561.97
MW-134	Bedrock	Active	36.10092362	-79.40929525	585.49	20	-	30	30		--	--	--	--	--	--	13.84	571.65	14.08	571.41
MW-135	Saprolite	Active	36.10087273	-79.40832204	598.09	15	-	25	25		--	--	--	--	--	--	19.21	578.88	19.54	578.55
MW-136	Bedrock	Active	36.09816389	-79.40762896	604.62	41.3	-	71.3	71.3		--	--	--	--	50.08	554.54	9.95	594.67	10.59	594.03
MW-137	Saprolite	Active	36.100114	-79.40765	587.55	3.5	-	13.5	13.5		--	--	--	--	--	--	3.36	584.19	3.79	583.76
MW-138	Saprolite	Active	36.099447	-79.411194	581.37	4	-	14	14		--	--	--	--	--	--	12.56	568.81	12.86	568.51
MW-139	Bedrock	Active	36.098219	-79.410686	579.22	15	-	20	20		--	--	--	--	--	--	7.25	571.97	7.28	571.94
MW-140	Bedrock	Active	36.099706	-79.409158	592.78	30	-	50	50		--	--	--	--	--	--	18.19	574.59	17.09	575.69
MW-141	Bedrock	Active	36.099467	-79.410147	580.43	15	-	20	20		--	--	--	--	--	--	12.94	567.49	12.28	568.15
MW-SP-3	--	Active	36.10018532	-79.41041194	--	2	-	9	9		--	--	--	--	--	--	4.80	--	4.96	
PZ-07	--	Active	36.09884016	-79.40898869	602.60	37	-	45	45		21.35	581.25	21.40	581.20	20.54	582.06	21.78	580.82	21.97	580.63
TAMP-MW-01	Saprolite	Active	36.09712738	-79.41102751	585.93	6.3	-	11.3	11.3		--	--	--	--	--	--	5.97	579.96	6.20	579.73
TAMP-MW-02	Saprolite	Active	36.09753934	-79.41105331	582.18	2.9	-	7.9	7.9		6.55	575.63	3.94	578.24	--	--	3.30	578.88	3.66	578.52
TAMP-MW-03	Saprolite	Active	36.09841228	-79.41123377	576.58	1.75	-	6.75	6.75		--	--	3.96	572.62	3.81	572.77	3.71	572.87	3.78	572.80
TAMP-MW-04	Saprolite	Not Located	36.09890971	-79.41116861	577.53	2	-	7	7		--	--	6.68	570.85	--	--	CNL	--	CNL	--
TAMP-MW-05	Saprolite	Destroyed	36.09947834	-79.41116813	580.60	5.3	-	15.3	15.3		--	--	--	--	--	--	Destroyed	--	Destroyed	--
TAMP-MW-06	Saprolite	Not Located	36.09961454	-79.41069156	574.00	5.4	-	10.4	10.4		7.65	566.35	9.16	564.84	--	--	CNL	--	CNL	--
TAMP-MW-07	Saprolite	Active	36.099736	-79.407836	588.00	8.8	-	23.8	27.4		6.40	581.60	3.68	584.32	3.05	584.95	3.62	584.38	3.68	584.32
TAMP-MW-08	Saprolite	Active	36.099675	-79.409125	593.02	7.8	-	22.8	23.1		19.23	573.79	16.73	576.29	16.10	576.92	16.87	576.15	16.98	576.04

Notes:
(1) Depth-to-water data in August 2022 for MW-129 was collected on 8/10/2022.
Feet msl = Feet above mean sea level.
Feet btoc = Feet below top-of-casing elevation for each well.
Feet bls = Feet below land surface.
NA: Not applicable.
--: Unknown or not measured
Coordinates and elevations for monitoring wells TAMP-MW-3, TAMP-MW-7, TAMP-MW-8, MW-123, MW-124, MW-129, MW-130, and MW-137 through MW-141 were surveyed on August 15, 2022 using the horizontal NAD83 (2011) and vertical NAVD88 reference datums.

Table 4
Groundwater Field Parameters (August 2022)
Tarheel Army Missile Plant
Burlington, North Carolina

	Well ID:	MW-02	MW-05	MW-101	MW-102	MW-103	MW-106	MW-107	MW-108	MW-109	MW-11
	Sample Date:	8/8/2022	8/9/2022	8/9/2022	8/9/2022	8/10/2022	8/10/2022	8/10/2022	8/10/2022	8/9/2022	8/10/2022
Field Parameter	Unit	Saprolite	Saprolite	Saprolite	Saprolite	Saprolite	Saprolite	Saprolite	Saprolite	Saprolite	Saprolite
Conductivity	µS/cm	181	101	249	79	254	184	320	537	529	188
DO	mg/L	ERR	1.45	ERR	ERR	0.81	ERR	0.11	0.9	ERR	0.92
ORP	mV	149.4	198.2	113.2	171.8	99.7	22.6	58.5	-107.6	-74.6	194.4
pH	pH	6.09	5.77	6.22	5.65	6.18	6.53	6.89	6.50	6.82	5.72
Temperature	C	21.87	18.4	21.24	25.74	24.44	21.37	25.38	22.94	25.61	22.75
Turbidity	NTU	5.09	7.59	1.59	3.16	0.88	2.19	2.6	9.76	5.7	8.42

Notes:
Conductivity = Electrical Conductivity in units of microSiemens per centimeter (µS/cm).
DO = Dissolved oxygen in units of milligrams per liter (mg/L).
ORP = Oxidation-reduction potential in units of milliVolt (mV).
C: Celsius
NTU = Nephelometric turbidity units
NA = Not analyzed.
ERR = One of the DO meters developed an error during use that could not be resolved. Thus, select DO readings were unuseable.

Table 4
Groundwater Field Parameters (August 2022)
Tarheel Army Missile Plant
Burlington, North Carolina

	Well ID:	MW-110	MW-111	MW-112	MW-115	MW-116	MW-117	MW-118	MW-119	MW-120	MW-121
	Sample Date:	8/8/2022	8/9/2022	8/9/2022	8/9/2022	8/10/2022	8/9/2022	8/8/2022	8/9/2022	8/10/2022	8/9/2022
Field Parameter	Unit	Bedrock	Bedrock	Bedrock	Saprolite	Saprolite	Saprolite	Saprolite	Saprolite	Bedrock	Bedrock
Conductivity	µS/cm	124	105	98	630	171	582	1	886	1010	205
DO	mg/L	NA	0.95	ERR	ERR	ERR	0.88	1.18	1.77	0.95	1.11
ORP	mV	NA	160.5	146.5	132.1	138.1	60.6	18.5	121.2	160.3	34
pH	pH	6.18	5.96	6.10	6.92	6.02	7.02	6.26	6.35	11.65	6.80
Temperature	C	21.95	23.4	19.21	26.41	20.16	25.33	21.18	21.04	23.02	22.04
Turbidity	NTU	4.01	113	6.53	5.31	9.32	4.37	7.55	5.21	2.78	10.9

Notes:
Conductivity = Electrical Conductivity in units of microSiemens per centimeter (µS/cm).
DO = Dissolved oxygen in units of milligrams per liter (mg/L).
ORP = Oxidation-reduction potential in units of milliVolt (mV).
C: Celsius
NTU = Nephelometric turbidity units
NA = Not analyzed.
ERR = One of the DO meters developed an error during use that could not be resolved. Thus, select DO readings were unuseable.

Table 4
Groundwater Field Parameters (August 2022)
Tarheel Army Missile Plant
Burlington, North Carolina

	Well ID:	MW-122	MW-124	MW-127	MW-130	MW-131	MW-132	MW-133	MW-136	MW-137	MW-138
	Sample Date:	8/9/2022	8/10/2022	8/9/2022	8/9/2022	8/9/2022	8/10/2022	8/9/2022	8/10/2022	8/8/2022	8/8/2022
Field Parameter	Unit	Bedrock	Bedrock	Saprolite	Saprolite	Saprolite	Saprolite	Bedrock	Bedrock	Saprolite	Saprolite
Conductivity	µS/cm	603	295	273	366	420	32	500	8809	745	226
DO	mg/L	0.04	0.04	0.4	0.21	2.2	1.17	0.15	4.57	1.72	2.49
ORP	mV	126.7	135.1	110	139.6	136.3	247.1	104.4	45.7	35.8	115.7
pH	pH	6.85	7.15	5.80	5.93	6.16	5.15	6.21	12.59	6.50	5.91
Temperature	C	21.64	19.29	19.6	21.47	21.89	19.45	22.72	31.18	30.2	25.07
Turbidity	NTU	NA	NA	NA	9.23	29.3	14	NA	NA	3.71	NA

Notes:
Conductivity = Electrical Conductivity in units of microSiemens per centimeter (µS/cm).
DO = Dissolved oxygen in units of milligrams per liter (mg/L).
ORP = Oxidation-reduction potential in units of milliVolt (mV).
C: Celsius
NTU = Nephelometric turbidity units
NA = Not analyzed.

Table 4
Groundwater Field Parameters (August 2022)
Tarheel Army Missile Plant
Burlington, North Carolina

	Well ID:	MW-139	MW-140	MW-141	TAMP-MW-08
	Sample Date:	8/10/2022	8/8/2022	8/10/2022	8/8/2022
Field Parameter	Unit	Bedrock	Bedrock	Bedrock	Saprolite
Conductivity	µS/cm	172	590	372	349
DO	mg/L	1.14	6.74	0.85	2.53
ORP	mV	120.7	142.5	123.6	103.2
pH	pH	5.83	7.07	6.95	5.85
Temperature	C	20.4	20.82	20.13	23.16
Turbidity	NTU	1.7	29.4	1.41	28.8

Notes:
Conductivity = Electrical Conductivity in units of microSiemens per centimeter (µS/cm).
DO = Dissolved oxygen in units of milligrams per liter (mg/L).
ORP = Oxidation-reduction potential in units of milliVolt (mV).
C: Celsius
NTU = Nephelometric turbidity units
NA = Not analyzed.

Table 5
Elevations and Analytical Results of Surface Water Samples (June 2017 to October 2022)
Tarheel Army Missile Plant
Burlington, North Carolina

				Sample Location	**SW-01A**		**SW-01B**		**SW-01**				
				Sample Date	8/9/2022	10/27/2022	8/9/2022	10/27/2022	6/8/2017	2/8/2019	3/21/2022	8/9/2022	10/27/2022
				Latitude	36.097881	36.097881	36.097903	36.097903	36.098231	36.098231	36.098231	36.098231	36.098231
				Longitude	79.410669	79.410669	79.41065	79.41065	79.410892	79.410892	79.410892	79.410892	79.410892
				Elevation (Feet msl) (1)	572.34		573.93		569.44		568.88		
				Depth To Stream Bottom (2)	0.09	0.42	0.02	0.17	0.44	0.83	0.28	0.34	0.67
				Top of Water Elevation (Feet msl)	572.43	572.76	573.95	574.1	569.88	570.27	569.16	569.22	569.55
Analyte	**Unit**	**2B Standard**	**EPA NRWQC**	**NC ISTV**									
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/l	**NE**	**NE**	**710,000**	< 0.84	< 0.84	< 0.84	< 0.84	< 0.8	**0.82**	**0.52 J**	< 0.84	**0.52 J+**
Acetone	ug/l	**NE**	**NE**	**3,100**	< 10	< 10	< 10	**8.3 J**	**3.1**	< 2	< 10	< 10	< 10
Chloride	ug/l	**250,000**	**NE**	**NE**	NA	NA	NA	NA	**15,000**	NA	NA	NA	NA
Chloroform	ug/l	**NE**	**60**	**NE**	< 0.80	< 0.80	< 0.80	< 0.80	< 0.8	< 0.4	< 0.80	< 0.80	< 0.80
Cis-1,2-Dichloroethene	ug/l	**NE**	**NE**	**60**	**0.60 J**	**0.79 J**	< 0.80	< 0.80	**2.0**	**6.3**	**4.2**	**3.2**	**11**
Tetrachloroethene	ug/l	**0.7**	**NE**	**NE**	< 0.80	< 0.80	< 0.80	**0.49 J**	**0.94**	**15**	**4.9**	**3.3**	**8.1**
Trichloroethene	ug/l	**2.5**	**NE**	**NE**	< 0.80	**0.65 J**	**0.64 J**	**0.94 J**	**1.9**	**18**	**11**	**7.2**	**23**
Trichlorofluoromethane	ug/l	**NE**	**NE**	**9,100**	< 0.80	< 0.80	< 0.80	< 0.80	< 0.8	< 0.4	< 0.80	< 0.80	< 0.80
Vinyl Chloride	ug/l	**0.025**	**NE**	**NE**	< 0.80	< 0.80	< 0.80	< 0.80	< 0.8	< 0.4	< 0.80	< 0.80	< 0.80

Notes:

Data collected in 2017, 2018, and 2019 were obtained from Arcadis (2020). Validation flags, if present in the data, were obtained from that prior work.

(1) Elevation data for 2017 and 2019 sample locations obtained from Arcadis (2020). Elevation data for 2022 sample locations were measured by Regional Land Surveying, Inc. and represent the surface of rock in stream bottom.

(2) Gauging data for the surface water samples represent depth of water above the datum on surface of rock in stream bottom.

Feet msl = Feet above mean sea level.

2B Standard = Subtitle 15A North Carolina Administrative Code (NCAC) 02B Surface Water and Wetland Standards. Effective Date September 1, 2022.

USEPA = United States Environmental Protection Agency.

NRWQC = Nationally Recommended Water Quality Criteria (https://deq.nc.gov/ncstdstable07262021).

NC ISTV = North Carolina In-Stream Target Values for Surface Waters (https://deq.nc.gov/ncstdstable07262021).

Only constituents that were detected above the Laboratory Limit of Quantitation (LoQ) are shown.

ug/L = Microgram per liter.

NE = Standard not established.

NA = Not Analyzed.

Validation qualifiers included:

Non detects shown as < LoQ.

Bold = values detected at >LoQ.

J = Qualified as estimated.

J- = Qualified as estimated, with the estimated value biased low.

J+ = Qualified as estimated, with the estimated value biased high.

Shaded values (if present) exceeded the referenced standard.

Table 5
Elevations and Analytical Results of Surface Water Samples (June 2017 to October 2022)
Tarheel Army Missile Plant
Burlington, North Carolina

				Sample Location	SW-02A / SW-02A (DUP)					SW-02					
				Sample Date	3/21/2022	8/9/2022	8/9/2022	10/27/2022	10/27/2022	6/8/2017	2/7/2019	3/21/2022	3/21/2022	8/9/2022	10/27/2022
				Latitude	36.09885	36.09885	36.09885	36.09885	36.09885	36.099647	36.099647	36.099647	36.099647	36.099647	36.099647
				Longitude	79.410853	79.410853	79.410853	79.410853	79.410853	79.410539	79.410539	79.410539	79.410539	79.410539	79.410539
				Elevation (Feet msl) (1)	566.43					562.22		563.93			
				Depth To Stream Bottom (2)	0.30	0.30		0.40		0.34	0.87	0.12		0.09	0.15
				Top of Water Elevation (Feet msl)	566.73	566.68		566.83		562.56	563.09	564.05		564.02	564.08
Analyte	**Unit**	**2B Standard**	**EPA NRWQC**	**NC ISTV**											
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/l	NE	NE	710,000	**0.50 J**	**0.86 J**	**0.84 J**	**1.3 J-**	**1.4 J+**	< 0.8	< 0.42	< 0.84	< 0.84	< 0.84	**0.45 J+**
Acetone	ug/l	NE	NE	3,100	< 10	< 10	< 10	< 10	< 10	**3.3**	< 2	< 10	< 10	< 10	< 10
Chloride	ug/l	250,000	NE	NE	NA	NA	NA	NA	NA	**15,000**	NA	NA	NA	NA	NA
Chloroform	ug/l	NE	60	NE	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.8	< 0.4	< 0.80	< 0.80	< 0.80	< 0.80
Cis-1,2-Dichloroethene	ug/l	NE	NE	60	**3.1**	**12**	**13**	**11**	**11**	**4.8**	**2.8**	**2.8**	**2.8**	**3.8**	**4.6**
Tetrachloroethene	ug/l	0.7	NE	NE	**9.5**	**30**	**33**	**38**	**38**	**9.3**	**7.5**	**6.2**	**6.2**	**9.4**	**12**
Trichloroethene	ug/l	2.5	NE	NE	**13**	**37**	**40**	**44**	**44**	**8.8**	**7**	**6.8**	**6.8**	**11**	**13**
Trichlorofluoromethane	ug/l	NE	NE	9,100	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.8	< 0.4	< 0.80	< 0.80	< 0.80	< 0.80
Vinyl Chloride	ug/l	0.025	NE	NE	< 0.80	**0.61 J**	**0.69 J**	< 0.80	< 0.80	< 0.8	< 0.4	< 0.80	< 0.80	< 0.80	< 0.80

Notes:

Data collected in 2017, 2018, and 2019 were obtained from Arcadis (2020). Validation flags, if present in the data, were obtained from that prior work.

(1) Elevation data for 2017 and 2019 sample locations obtained from Arcadis (2020). Elevation data for 2022 sample locations were measured by Regional Land Surveying, Inc. and represent the surface of rock in stream bottom.

(2) Gauging data for the surface water samples represent depth of water above the datum on surface of rock in stream bottom.

Feet msl = Feet above mean sea level.

2B Standard = Subtitle 15A North Carolina Administrative Code (NCAC) 02B Surface Water and Wetland Standards. Effective Date September 1, 2022.

USEPA = United States Environmental Protection Agency.

NRWQC = Nationally Recommended Water Quality Criteria (https://deq.nc.gov/ncstdstable07262021).

NC ISTV = North Carolina In-Stream Target Values for Surface Waters (https://deq.nc.gov/ncstdstable07262021).

Only constituents that were detected above the Laboratory Limit of Quantitation (LoQ) are shown.

ug/L = Microgram per liter.

NE = Standard not established.

NA = Not Analyzed.

Validation qualifiers included:

Non detects shown as < LoQ.

Bold = values detected at >LoQ.

J = Qualified as estimated.

J- = Qualified as estimated, with the estimated value biased low.

J+ = Qualified as estimated, with the estimated value biased high.

Shaded values (if present) exceeded the referenced standard.

Table 5
Elevations and Analytical Results of Surface Water Samples (June 2017 to October 2022)
Tarheel Army Missile Plant
Burlington, North Carolina

				Sample Location	SW-03					SW-03B	SW-03A		SW-04
				Sample Date	6/8/2017	2/7/2019	3/21/2022	8/9/2022	10/27/2022	3/21/2022	3/21/2022	10/27/2022	2/7/2019
				Latitude	36.100214	36.100214	36.100214	36.100214	36.100214	36.100291672	36.101892	36.101892	36.100747
				Longitude	79.410564	79.410564	79.410564	79.410564	-79.410564	-79.410417637	79.41095	-79.41095	-79.410811
				Elevation (Feet msl) (1)	559.92		560.03			NM	552.09		NM
				Depth To Stream Bottom (2)	0.51	0.50	0.29	0.16	0.25	NM	0.51	0.31	NM
				Top of Water Elevation (Feet msl)	560.43	560.42	560.32	560.19	560.28	--	552.60	552.40	--
Analyte	**Unit**	**2B Standard**	**EPA NRWQC**	**NC ISTV**									
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/l	NE	NE	710,000	< 0.8	< 0.42	< 0.84	< 0.84	< 0.84	< 0.84	< 0.84	< 0.84	< 0.42
Acetone	ug/l	NE	NE	3,100	**3.6**	< 2	< 10	**6.9 J+**	< 10	< 10	< 10	< 10	< 2
Chloride	ug/l	250,000	NE	NE	**15000**	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	ug/l	NE	60	NE	< 0.8	< 0.4	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.4
Cis-1,2-Dichloroethene	ug/l	NE	NE	60	**2.1**	**1.7**	**1.7**	**0.96 J**	**2.3**	< 0.80	< 0.80	< 0.80	**0.71**
Tetrachloroethene	ug/l	0.7	NE	NE	**4.1**	**3.9**	**3.7**	**2.5**	**6.2**	< 0.80	**0.86 J**	**0.64 J**	**1.8**
Trichloroethene	ug/l	2.5	NE	NE	**4.4**	**4.6**	**4.7**	**3.5**	**8.3**	< 0.80	**1.1**	**0.77 J**	**2**
Trichlorofluoromethane	ug/l	NE	NE	9,100	< 0.8	< 0.4	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.4
Vinyl Chloride	ug/l	0.025	NE	NE	< 0.8	< 0.4	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.4

Notes:

Data collected in 2017, 2018, and 2019 were obtained from Arcadis (2020). Validation flags, if present in the data, were obtained from that prior work.

(1) Elevation data for 2017 and 2019 sample locations obtained from Arcadis (2020). Elevation data for 2022 sample locations were measured by Regional Land Surveying, Inc. and represent the surface of rock in stream bottom.

(2) Gauging data for the surface water samples represent depth of water above the datum on surface of rock in stream bottom.

Feet msl = Feet above mean sea level.

2B Standard = Subtitle 15A North Carolina Administrative Code (NCAC) 02B Surface Water and Wetland Standards. Effective Date September 1, 2022.

USEPA = United States Environmental Protection Agency.

NRWQC = Nationally Recommended Water Quality Criteria (https://deq.nc.gov/ncstdstable07262021).

NC ISTV = North Carolina In-Stream Target Values for Surface Waters (https://deq.nc.gov/ncstdstable07262021).

Only constituents that were detected above the Laboratory Limit of Quantitation (LoQ) are shown.

ug/L = Microgram per liter.

NE = Standard not established.

NA = Not Analyzed.

Validation qualifiers included:

Non detects shown as < LoQ.

Bold = values detected at >LoQ.

J = Qualified as estimated.

J- = Qualified as estimated, with the estimated value biased low.

J+ = Qualified as estimated, with the estimated value biased high.

Shaded values (if present) exceeded the referenced standard.

Table 6
Analytical Results of Background Soil Samples
Tarheel Army Missile Plant
Burlington, North Carolina

						Sample ID	RI-GW-01A (0-4)	RI-GW-01D (0-4)	RI-GW-01D (11-13)	RI-GW-02 (0-4)	RI-GW-02 (14-16)
						Sample Date	6/23/2022	6/23/2022	6/23/2022	6/23/2022	6/23/2022
						Latitude	36.0999321	36.1001162	36.1001162	36.0996557	36.0996557
						Longitude	-79.4080234	-79.4076571	-79.4076571	-79.4066874	-79.4066874
Analyte	Unit	PSRG - GW Protection	PSRG Res	PSRG Ind	Natural Range (1)	Natural Mean (1)					
WBLACK											
Total Organic Carbon	mg/kg	NE	NE	NE	NE	NE	NA	NA	NA	NA	< 100
SW6020											
Arsenic	mg/kg	5.84	0.677	3.0	0.6 - 35.9	3.4	0.35 J	0.40 J	0.73	2.0	NA
Barium	mg/kg	577	3,130	46,600	9 - 3,150	343	69	41	180 J+	10	NA
Cadmium	mg/kg	3.0	1.4	20	0.1 - 0.4	0.17	< 0.058	< 0.053	0.066 J	0.028 J	NA
Chromium	mg/kg	360,000	23,000	350,000	1 - 431	33.5	7.5 J	13	17	27	NA
Lead	mg/kg	270	400 (2)	NE	1.5 - 114	19.4	2.9	3.2	0.76 J	11	NA
Selenium	mg/kg	2.08	78.2	1170	0.2 - 5.7	0.58	0.52 J	1.3	1.5	0.50 J	NA
Silver	mg/kg	3.4	78.2	1170	ND	ND	< 0.12	< 0.11	< 0.11	< 0.13	NA

Notes:
PSRG - GW Protection = Preliminary Soil Remediation Goal (PSRG) based on the protection of leaching to groundwater.
PSRG Res = PSRG for the protection of human health based on residential exposure scenarios.
PSRG Ind = PSRG for the protection of human health based on commercial / industrial exposure scenarios.
(1) Natural Range and Natural Mean values were calculated from USGS soil data from North Carolina.
Source: Smith, D.B., Cannon, W.F., Woodruff, L.G., Solano, Federico, Kilburn, J.E., and Fey, D.L., 2013. Geochemical and Mineralogical Data for Soils of the Conterminous United States: U.S. Geological Survey Data Series 801, 19 p., http://pubs.usgs.gov/ds/801/.USGS
mg/kg = Microgram per kilogram.
NE = Standard not established.
(2) PSRG value selected because untreated water wells are not present at the Site, in accordance with North Carolina Department of Environmental Quality Preliminary Soil Remediation Goals (PSRGs) Tables (July 2022).
Only constituents that were detected above the Laboratory Limit of Quantitation (LoQ) are shown.
NA = Not analyzed.
Validation qualifiers included:
Non detects shown as < LoQ.
Bold = values detected at >LoQ.
J = Qualified as estimated.
J+ = Qualified as estimated, with the estimated value biased high.
Shaded values (if present) exceeded the referenced standard.

Table 6
Analytical Results of Background Soil Samples
Tarheel Army Missile Plant
Burlington, North Carolina

						Sample ID	RI-GW-03 (0-6)	RI-GW-04 (0-6)	RI-GW-04 (12-15)	RI-GW-05 (0-4)	RI-GW-05 (8-12)
						Sample Date	6/23/2022	6/23/2022	6/23/2022	6/23/2022	6/23/2022
						Latitude	36.0999361	36.0987943	36.098794308	36.098218886	36.098218886
						Longitude	-79.4094465	-79.4097798	-79.409779793	-79.410694534	-79.410694534
Analyte	Unit	PSRG - GW Protection	PSRG Res	PSRG Ind	Natural Range (1)	Natural Mean (1)					
WBLACK											
Total Organic Carbon	mg/kg	NE	NE	NE	NE	NE	NA	NA	360	NA	3000
SW6020											
Arsenic	mg/kg	5.84	0.677	3.0	0.6 - 35.9	3.4	1.2	2.0	NA	1.4	NA
Barium	mg/kg	577	3,130	46,600	9 - 3,150	343	100	45	NA	83	NA
Cadmium	mg/kg	3.0	1.4	20	0.1 - 0.4	0.17	< 0.063	< 0.072	NA	< 0.063	NA
Chromium	mg/kg	360,000	23,000	350,000	1 - 431	33.5	7.8	22	NA	35	NA
Lead	mg/kg	270	400 (2)	NE	1.5 - 114	19.4	4.2	7.0	NA	5.4	NA
Selenium	mg/kg	2.08	78.2	1170	0.2 - 5.7	0.58	2.7	0.79 J	NA	0.92 J	NA
Silver	mg/kg	3.4	78.2	1170	ND	ND	< 0.12	< 0.15	NA	< 0.13	NA

Notes:
PSRG - GW Protection = Preliminary Soil Remediation Goal (PSRG) based on the protection of leaching to groundwater.
PSRG Res = PSRG for the protection of human health based on residential exposure scenarios.
PSRG Ind = PSRG for the protection of human health based on commercial / industrial exposure scenarios.
(1) Natural Range and Natural Mean values were calculated from USGS soil data from North Carolina.
Source: Smith, D.B., Cannon, W.F., Woodruff, L.G., Solano, Federico, Kilburn, J.E., and Fey, D.L., 2013. Geochemical and Mineralogical Data for Soils of the Conterminous United States: U.S. Geological Survey Data Series 801, 19 p., http://pubs.usgs.gov/ds/801/.USGS
mg/kg = Microgram per kilogram.
NE = Standard not established.
(2) PSRG value selected because untreated water wells are not present at the Site, in accordance with North Carolina Department of Environmental Quality Preliminary Soil Remediation Goals (PSRGs) Tables (July 2022).
Only constituents that were detected above the Laboratory Limit of Quantitation (LoQ) are shown.
NA = Not analyzed.
Validation qualifiers included:
Non detects shown as < LoQ.
Bold = values detected at >LoQ.
J = Qualified as estimated.
J+ = Qualified as estimated, with the estimated value biased high.
Shaded values (if present) exceeded the referenced standard.

Table 6
Analytical Results of Background Soil Samples
Tarheel Army Missile Plant
Burlington, North Carolina

						Sample ID	RI-GW-06 (0-6)	RI-GW-06 (6-8)	RI-GW-07 (0-4)	RI-GW-07 (14-16)
						Sample Date	6/24/2022	6/24/2022	6/24/2022	6/24/2022
						Latitude	36.097938331	36.097938331	36.097952889	36.097952889
						Longitude	-79.410605798	-79.410605798	-79.409795095	-79.409795095
Analyte	Unit	PSRG - GW Protection	PSRG Res	PSRG Ind	Natural Range (1)	Natural Mean (1)				
WBLACK										
Total Organic Carbon	mg/kg	NE	NE	NE	NE	NE	NA	2000	NA	510
SW6020										
Arsenic	mg/kg	5.84	0.677	3.0	0.6 - 35.9	3.4	2.7	NA	1.3	NA
Barium	mg/kg	577	3,130	46,600	9 - 3,150	343	64	NA	58	NA
Cadmium	mg/kg	3.0	1.4	20	0.1 - 0.4	0.17	0.12	NA	0.051 J	NA
Chromium	mg/kg	360,000	23,000	350,000	1 - 431	33.5	20	NA	38	NA
Lead	mg/kg	270	400 (2)	NE	1.5 - 114	19.4	10	NA	7.6	NA
Selenium	mg/kg	2.08	78.2	1170	0.2 - 5.7	0.58	1.1	NA	0.74 J	NA
Silver	mg/kg	3.4	78.2	1170	ND	ND	< 0.11	NA	< 0.13	NA

Notes:
PSRG - GW Protection = Preliminary Soil Remediation Goal (PSRG) based on the protection of leaching to groundwater.
PSRG Res = PSRG for the protection of human health based on residential exposure scenarios.
PSRG Ind = PSRG for the protection of human health based on commercial / industrial exposure scenarios.
(1) Natural Range and Natural Mean values were calculated from USGS soil data from North Carolina.
Source: Smith, D.B., Cannon, W.F., Woodruff, L.G., Solano, Federico, Kilburn, J.E., and Fey, D.L., 2013. Geochemical and Mineralogical Data for Soils of the Conterminous United States: U.S. Geological Survey Data Series 801, 19 p., http://pubs.usgs.gov/ds/801/.USGS
mg/kg = Microgram per kilogram.
NE = Standard not established.
(2) PSRG value selected because untreated water wells are not present at the Site, in accordance with North Carolina Department of Environmental Quality Preliminary Soil Remediation Goals (PSRGs) Tables (July 2022).
Only constituents that were detected above the Laboratory Limit of Quantitation (LoQ) are shown.
NA = Not analyzed.
Validation qualifiers included:
Non detects shown as < LoQ.
Bold = values detected at >LoQ.
J = Qualified as estimated.
J+ = Qualified as estimated, with the estimated value biased high.
Shaded values (if present) exceeded the referenced standard.

Table 7
Analytical Results of Soil Samples
Tarheel Army Missile Plant
Burlington, North Carolina

				Sample ID	RI-SB-01 (2-8)	RI-SB-01 (4-6)	RI-SB-01 (10-12)	RI-SB-02 (2-8)	RI-SB-02 (2-4)	RI-SB-02 (4-6)	RI-SB-02 (6-8)	DUP-SB-01	RI-SB-03 (2-6)
				Sample Date	6/20/2022	6/20/2022	6/20/2022	6/20/2022	6/20/2022	6/20/2022	6/20/2022	6/21/2022	6/20/2022
				Latitude	36.09810633	36.09810633	36.09810633	36.09806018	36.09806018	36.09806018	36.09806018	36.09806018	36.09808888
				Longitude	-79.40798101	-79.40798101	-79.40798101	-79.40770885	-79.40770885	-79.40770885	-79.40770885	-79.40770885	-79.4077329
Analyte	Unit	PSRG - GW Protection	PSRG Res	PSRG Ind									
SW6020													
Arsenic	mg/kg	5.84	0.677	3	0.99	NA	NA	3.0	NA	NA	NA	NA	2.0
Barium	mg/kg	577	3130	46600	39	NA	NA	160	NA	NA	NA	NA	140
Cadmium	mg/kg	NE	NE	NE	< 0.058	NA	NA	< 0.77	NA	NA	NA	NA	< 0.67
Chromium	mg/kg	NE	NE	NE	12	NA	NA	15	NA	NA	NA	NA	14
Lead	mg/kg	270	NE	NE	4.1	NA	NA	3.8	NA	NA	NA	NA	3.2
Selenium	mg/kg	2.08	78.2	1170	0.76 J	NA	NA	5.6	NA	NA	NA	NA	6.2
Silver	mg/kg	3.4	78.2	1170	< 0.12	NA	NA	< 0.16	NA	NA	NA	NA	< 0.13
SW8260D													
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	9830	1420	5960	NA	< 0.0059	< 0.0036	NA	< 0.0050	< 0.0042	< 0.0041	0.0084	NA
1,1-Dichloroethane	mg/kg	0.034	3.77	16.5	NA	< 0.0059	< 0.0036	NA	< 0.0050	< 0.0042	< 0.0041	< 0.0045	NA
1,1-Dichloroethene	mg/kg	2.49	48.1	211	NA	< 0.0059	< 0.0036	NA	< 0.0050	< 0.0042	< 0.0041	< 0.0045	NA
2-Butanone	mg/kg	16.7	5540	40500	NA	< 0.012	< 0.0072	NA	0.018 J	< 0.0084	< 0.0080	< 0.0088	NA
Acetone	mg/kg	24.6	14100	210000	NA	0.014 J	< 0.014	NA	0.11	0.019 J	0.11	< 0.018	NA
Carbon Disulfide	mg/kg	4.12	162	736	NA	< 0.0059	< 0.0036	NA	< 0.0050	< 0.0042	< 0.0041	< 0.0045	NA
Cis-1,2-Dichloroethene	mg/kg	0.411	31.3	467	NA	< 0.0059	< 0.0036	NA	0.0052 J	0.0091	0.033	0.011	NA
Cyclohexane	mg/kg	NE	1380	5810	NA	< 0.0059	< 0.0036	NA	< 0.0050	< 0.0042	< 0.0041	< 0.0045	NA
Ethylbenzene	mg/kg	13.4	6.12	26.9	NA	< 0.0059	< 0.0036	NA	< 0.0050	< 0.0042	< 0.0041	< 0.0045	NA
Isopropylbenzene	mg/kg	2.29	408	2110	NA	< 0.0059	< 0.0036	NA	< 0.0050	< 0.0042	< 0.0041	< 0.0045	NA
Methylcyclohexane	mg/kg	NE	NE	NE	NA	< 0.0059	< 0.0036	NA	0.0028 J	< 0.0042	< 0.0041	< 0.0045	NA
Tetrachloroethene	mg/kg	0.00634	17.1	82.4	NA	< 0.0059	< 0.0036	NA	< 0.0050	< 0.0042	< 0.0041	< 0.0045	NA
Toluene	mg/kg	8.3	991	9660	NA	< 0.0059	< 0.0036	NA	< 0.0050	< 0.0042	< 0.0041	< 0.0045	NA
Total Xylenes	mg/kg	9.89	122	529	NA	< 0.012	< 0.0073	NA	0.0066 J	< 0.0080	< 0.0080	< 0.0088	NA
Trans-1,2-Dichloroethene	mg/kg	0.625	14.8	64.2	NA	< 0.0059	< 0.0036	NA	< 0.0050	< 0.0042	< 0.0041	< 0.0045	NA
Trichloroethene	mg/kg	0.0214	0.871	3.98	NA	< 0.0059	< 0.0036	NA	< 0.0050	0.021	0.82	0.39	NA
Vinyl Chloride	mg/kg	0.000205	0.0605	1.74	NA	< 0.0090	< 0.0055	NA	0.021	0.035	< 0.0060	< 0.0066	NA
SW8270E													
2-Methylnaphthalene	mg/kg	3.09	47.8	603	< 0.012	NA	NA	0.073	NA	NA	NA	NA	< 0.013
Acenaphthene	mg/kg	16.4	717	9040	< 0.012	NA	NA	0.03	NA	NA	NA	NA	< 0.013
Acenaphthylene	mg/kg	NE	NE	NE	0.025	NA	NA	0.01 J	NA	NA	NA	NA	< 0.013
Anthracene	mg/kg	1320	3590	45200	0.0080 J	NA	NA	0.033	NA	NA	NA	NA	< 0.013
Benzo(a)anthracene	mg/kg	0.354	1.13	20.6	< 0.012	NA	NA	0.022	NA	NA	NA	NA	< 0.013
Benzo(a)pyrene	mg/kg	0.118	0.115	2.11	0.027	NA	NA	0.019	NA	NA	NA	NA	< 0.013
Benzo(b)fluoranthene	mg/kg	1.2	1.15	21.1	0.021	NA	NA	0.018 J	NA	NA	NA	NA	< 0.013
Benzo(g,h,i)perylene	mg/kg	NE	NE	NE	0.032	NA	NA	0.015 J	NA	NA	NA	NA	< 0.013
Benzo(k)fluoranthene	mg/kg	11.8	11.5	211	0.0056 J	NA	NA	< 0.011	NA	NA	NA	NA	< 0.0094
Caprolactam	mg/kg	19.9	6320	82000	< 0.058	NA	NA	< 0.069	NA	NA	NA	NA	< 0.062
Carbazole	mg/kg	NE	NE	NE	< 0.058	NA	NA	< 0.069	NA	NA	NA	NA	< 0.062
Chrysene	mg/kg	36.1	115	2110	< 0.0089	NA	NA	0.027	NA	NA	NA	NA	< 0.0094
Dibenzofuran	mg/kg	10.4	15.6	234	< 0.058	NA	NA	< 0.069	NA	NA	NA	NA	< 0.062
Di-N-Butylphthalate	mg/kg	35.2	1260	16400	< 0.058	NA	NA	< 0.069	NA	NA	NA	NA	< 0.062
Fluoranthene	mg/kg	667	478	6030	0.0089 J	NA	NA	0.039	NA	NA	NA	NA	< 0.0094
Fluorene	mg/kg	111	478	6030	< 0.012	NA	NA	0.046	NA	NA	NA	NA	< 0.013
Indeno(1,2,3-Cd)Pyrene	mg/kg	3.9	1.15	21.1	0.018	NA	NA	0.0096 J	NA	NA	NA	NA	< 0.013
Naphthalene	mg/kg	0.395	2.08	8.84	< 0.012	NA	NA	0.051	NA	NA	NA	NA	< 0.013
Phenanthrene	mg/kg	NE	NE	NE	< 0.012	NA	NA	0.12	NA	NA	NA	NA	< 0.013
Pyrene	mg/kg	436	359	4520	0.018	NA	NA	0.062	NA	NA	NA	NA	0.0086 J

Notes:
PSRG - GW Protection = Preliminary Soil Remediation Goal (PSRG) based on the protection of leaching to groundwater.
PSRG Res = PSRG for the protection of human health based on residential exposure scenarios.
PSRG Ind = PSRG for the protection of human health based on commercial / industrial exposure scenarios.
Duplicate sample DUP-SB-01 collected from sample RI-SB-02 (6-8).
Duplicate sample DUP-SB-02 collected from sample RI-SB-16 (4-6).
Duplicate sample DUP-SB-03 collected from sample RI-SB-19 (2-4).
Only constituents that were detected above the Laboratory Limit of Quantitation (LoQ) are shown.
mg/kg = Milligram per kilogram.
NE = Standard not established.
NA = Not analyzed.
Validation qualifiers included:
Non detects shown as < LoQ.
Bold = values detected at >LoQ.
J = Qualified as estimated.
J- = Qualified as estimated, with the estimated value biased low.
J+ = Qualified as estimated, with the estimated value biased high.
Shaded values (if present) exceeded the referenced standard.

Table 7
Analytical Results of Soil Samples
Tarheel Army Missile Plant
Burlington, North Carolina

				Sample ID	RI-SB-03 (6-8)	RI-SB-03 (16-18)	RI-SB-04 (6-8)	RI-SB-04 (14-16)	RI-SB-05 (2-8)	RI-SB-05 (2-4)	RI-SB-05 (10-12)	RI-SB-06 (4-8)	RI-SB-06 (4-6)
				Sample Date	6/20/2022	6/20/2022	6/20/2022	6/20/2022	6/20/2022	6/20/2022	6/20/2022	6/20/2022	6/20/2022
				Latitude	36.09808888	36.09808888	36.09810869	36.09810869	36.09811042	36.09811042	36.09811042	36.09811384	36.09811384
				Longitude	-79.4077329	-79.4077329	-79.40768828	-79.40768828	-79.40764576	-79.40764576	-79.40764576	-79.40758114	-79.40758114
Analyte	Unit	PSRG - GW Protection	PSRG Res	PSRG Ind									
SW6020													
Arsenic	mg/kg	5.84	0.677	3	NA	NA	NA	NA	0.37 J	NA	NA	1.5	NA
Barium	mg/kg	577	3130	46600	NA	NA	NA	NA	120	NA	NA	140	NA
Cadmium	mg/kg	NE	NE	NE	NA	NA	NA	NA	< 0.67	NA	NA	< 0.58	NA
Chromium	mg/kg	NE	NE	NE	NA	NA	NA	NA	7.6	NA	NA	47	NA
Lead	mg/kg	270	NE	NE	NA	NA	NA	NA	< 1.5	NA	NA	2.2	NA
Selenium	mg/kg	2.08	78.2	1170	NA	NA	NA	NA	1.8	NA	NA	5.2	NA
Silver	mg/kg	3.4	78.2	1170	NA	NA	NA	NA	< 0.14	NA	NA	< 0.11	NA
SW8260D													
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	9830	1420	5960	< 0.0047	< 0.0048	< 0.0038	< 0.0042	NA	< 0.0046	< 0.0049	NA	< 0.0040
1,1-Dichloroethane	mg/kg	0.034	3.77	16.5	< 0.0047	< 0.0048	< 0.0038	< 0.0042	NA	< 0.0046	< 0.0049	NA	< 0.0040
1,1-Dichloroethene	mg/kg	2.49	48.1	211	< 0.0047	< 0.0048	< 0.0038	< 0.0042	NA	< 0.0046	< 0.0049	NA	< 0.0040
2-Butanone	mg/kg	16.7	5540	40500	< 0.0096	< 0.0096	< 0.0076	< 0.0084	NA	< 0.0092	< 0.0096	NA	< 0.0080
Acetone	mg/kg	24.6	14100	210000	0.014 J	< 0.019	< 0.015	< 0.017	NA	< 0.018	< 0.019	NA	< 0.016
Carbon Disulfide	mg/kg	4.12	162	736	< 0.0047	< 0.0048	< 0.0038	< 0.0042	NA	< 0.0046	< 0.0049	NA	< 0.0040
Cis-1,2-Dichloroethene	mg/kg	0.411	31.3	467	0.013	0.099	0.0023 J	0.0085	NA	< 0.0046	< 0.0049	NA	< 0.0040
Cyclohexane	mg/kg	NE	1380	5810	< 0.0047	< 0.0048	< 0.0038	< 0.0042	NA	< 0.0046	< 0.0049	NA	< 0.0040
Ethylbenzene	mg/kg	13.4	6.12	26.9	< 0.0047	< 0.0048	< 0.0038	< 0.0042	NA	< 0.0046	< 0.0049	NA	< 0.0040
Isopropylbenzene	mg/kg	2.29	408	2110	< 0.0047	< 0.0048	< 0.0038	< 0.0042	NA	< 0.0046	< 0.0049	NA	< 0.0040
Methylcyclohexane	mg/kg	NE	NE	NE	< 0.0047	< 0.0048	< 0.0038	< 0.0042	NA	< 0.0046	< 0.0049	NA	< 0.0040
Tetrachloroethene	mg/kg	0.00634	17.1	82.4	< 0.0047	0.68	< 0.0038	< 0.0042	NA	0.0030 J	< 0.0049	NA	< 0.0040
Toluene	mg/kg	8.3	991	9660	< 0.0047	< 0.0048	< 0.0038	< 0.0042	NA	< 0.0046	< 0.0049	NA	< 0.0040
Total Xylenes	mg/kg	9.89	122	529	< 0.0096	< 0.0096	< 0.0076	< 0.0080	NA	< 0.0088	< 0.0096	NA	< 0.0080
Trans-1,2-Dichloroethene	mg/kg	0.625	14.8	64.2	< 0.0047	0.0061	< 0.0038	< 0.0042	NA	< 0.0046	< 0.0049	NA	< 0.0040
Trichloroethene	mg/kg	0.0214	0.871	3.98	0.0027 J	0.92	0.0094	0.068	NA	0.011	< 0.0049	NA	< 0.0040
Vinyl Chloride	mg/kg	0.000205	0.0605	1.74	< 0.0072	< 0.0072	< 0.0057	< 0.0060	NA	< 0.0066	< 0.0072	NA	< 0.0060
SW8270E													
2-Methylnaphthalene	mg/kg	3.09	47.8	603	NA	NA	NA	NA	< 0.012	NA	NA	< 0.013	NA
Acenaphthene	mg/kg	16.4	717	9040	NA	NA	NA	NA	< 0.012	NA	NA	< 0.013	NA
Acenaphthylene	mg/kg	NE	NE	NE	NA	NA	NA	NA	0.019	NA	NA	0.016 J	NA
Anthracene	mg/kg	1320	3590	45200	NA	NA	NA	NA	0.015 J	NA	NA	0.01 J	NA
Benzo(a)anthracene	mg/kg	0.354	1.13	20.6	NA	NA	NA	NA	0.021	NA	NA	0.023	NA
Benzo(a)pyrene	mg/kg	0.118	0.115	2.11	NA	NA	NA	NA	0.038	NA	NA	0.035	NA
Benzo(b)fluoranthene	mg/kg	1.2	1.15	21.1	NA	NA	NA	NA	0.028	NA	NA	0.029	NA
Benzo(g,h,i)perylene	mg/kg	NE	NE	NE	NA	NA	NA	NA	0.025	NA	NA	0.025	NA
Benzo(k)fluoranthene	mg/kg	11.8	11.5	211	NA	NA	NA	NA	0.0087 J	NA	NA	0.012 J	NA
Caprolactam	mg/kg	19.9	6320	82000	NA	NA	NA	NA	< 0.06	NA	NA	< 0.062	NA
Carbazole	mg/kg	NE	NE	NE	NA	NA	NA	NA	< 0.06	NA	NA	< 0.062	NA
Chrysene	mg/kg	36.1	115	2110	NA	NA	NA	NA	0.018	NA	NA	0.027	NA
Dibenzofuran	mg/kg	10.4	15.6	234	NA	NA	NA	NA	< 0.06	NA	NA	< 0.062	NA
Di-N-Butylphthalate	mg/kg	35.2	1260	16400	NA	NA	NA	NA	< 0.06	NA	NA	< 0.062	NA
Fluoranthene	mg/kg	667	478	6030	NA	NA	NA	NA	0.031	NA	NA	0.033	NA
Fluorene	mg/kg	111	478	6030	NA	NA	NA	NA	< 0.012	NA	NA	< 0.013	NA
Indeno(1,2,3-Cd)Pyrene	mg/kg	3.9	1.15	21.1	NA	NA	NA	NA	0.018	NA	NA	0.017	NA
Naphthalene	mg/kg	0.395	2.08	8.84	NA	NA	NA	NA	< 0.012	NA	NA	< 0.013	NA
Phenanthrene	mg/kg	NE	NE	NE	NA	NA	NA	NA	0.032	NA	NA	0.018	NA
Pyrene	mg/kg	436	359	4520	NA	NA	NA	NA	0.065	NA	NA	0.086	NA

Notes:
PSRG - GW Protection = Preliminary Soil Remediation Goal (PSRG) based on the protection of leaching to groundwater.
PSRG Res = PSRG for the protection of human health based on residential exposure scenarios.
PSRG Ind = PSRG for the protection of human health based on commercial / industrial exposure scenarios.
Duplicate sample DUP-SB-01 collected from sample RI-SB-02 (6-8).
Duplicate sample DUP-SB-02 collected from sample RI-SB-16 (4-6).
Duplicate sample DUP-SB-03 collected from sample RI-SB-19 (2-4).
Only constituents that were detected above the Laboratory Limit of Quantitation (LoQ) are shown.
mg/kg = Milligram per kilogram.
NE = Standard not established.
NA = Not analyzed.
Validation qualifiers included:
Non detects shown as < LoQ.
Bold = values detected at >LoQ.
J = Qualified as estimated.
J- = Qualified as estimated, with the estimated value biased low.
J+ = Qualified as estimated, with the estimated value biased high.
Shaded values (if present) exceeded the referenced standard.

Table 7
Analytical Results of Soil Samples
Tarheel Army Missile Plant
Burlington, North Carolina

				Sample ID	RI-SB-06 (16-18)	RI-SB-07 (2-6)	RI-SB-07 (2-4)	RI-SB-07 (12-14)	RI-SB-08 (2-6)	RI-SB-08 (4-6)	RI-SB-08 (6-8)	RI-SB-09A (1-4)	RI-SB-09B (2-8)
				Sample Date	6/20/2022	6/20/2022	6/20/2022	6/20/2022	6/20/2022	6/20/2022	6/20/2022	6/20/2022	6/20/2022
				Latitude	36.09811384	36.09804198	36.09804198	36.09804198	36.09804995	36.09804995	36.09804995	36.09804333	36.09803646
				Longitude	-79.40758114	-79.40757766	-79.40757766	-79.40757766	-79.40770256	-79.40770256	-79.40770256	-79.40767553	-79.40766256
Analyte	Unit	PSRG - GW Protection	PSRG Res	PSRG Ind									
SW6020													
Arsenic	mg/kg	5.84	0.677	3	NA	0.84	NA	NA	0.91	NA	NA	NA	1.8
Barium	mg/kg	577	3130	46600	NA	210	NA	NA	190	NA	NA	NA	150
Cadmium	mg/kg	NE	NE	NE	NA	< 0.63	NA	NA	< 0.067	NA	NA	NA	< 0.58
Chromium	mg/kg	NE	NE	NE	NA	120	NA	NA	28	NA	NA	NA	23
Lead	mg/kg	270	NE	NE	NA	4.8	NA	NA	5.4	NA	NA	NA	6.8
Selenium	mg/kg	2.08	78.2	1170	NA	1.4	NA	NA	0.74 J	NA	NA	NA	4.8
Silver	mg/kg	3.4	78.2	1170	NA	0.24 J	NA	NA	< 0.14	NA	NA	NA	< 0.12
SW8260D													
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	9830	1420	5960	< 0.0042	NA	< 0.0035	< 0.0038	NA	0.035	0.041	< 0.0038	NA
1,1-Dichloroethane	mg/kg	0.034	3.77	16.5	< 0.0042	NA	< 0.0035	< 0.0038	NA	0.0035 J	0.0062	< 0.0038	NA
1,1-Dichloroethene	mg/kg	2.49	48.1	211	< 0.0042	NA	< 0.0035	< 0.0038	NA	< 0.0047	< 0.0050	< 0.0038	NA
2-Butanone	mg/kg	16.7	5540	40500	< 0.0084	NA	< 0.0072	< 0.0076	NA	< 0.0092	< 0.01	< 0.0076	NA
Acetone	mg/kg	24.6	14100	210000	< 0.017	NA	< 0.014	0.01 J	NA	< 0.018	< 0.02	0.045 J+	NA
Carbon Disulfide	mg/kg	4.12	162	736	< 0.0042	NA	< 0.0035	< 0.0038	NA	< 0.0047	< 0.0050	< 0.0038	NA
Cis-1,2-Dichloroethene	mg/kg	0.411	31.3	467	0.0027 J	NA	< 0.0035	< 0.0038	NA	0.023	0.064	0.016 J+	NA
Cyclohexane	mg/kg	NE	1380	5810	< 0.0042	NA	< 0.0035	< 0.0038	NA	< 0.0047	< 0.0050	0.01 J+	NA
Ethylbenzene	mg/kg	13.4	6.12	26.9	< 0.0042	NA	< 0.0035	< 0.0038	NA	< 0.0047	< 0.0050	0.013 J+	NA
Isopropylbenzene	mg/kg	2.29	408	2110	< 0.0042	NA	< 0.0035	< 0.0038	NA	< 0.0047	< 0.0050	0.035 J+	NA
Methylcyclohexane	mg/kg	NE	NE	NE	< 0.0042	NA	< 0.0035	< 0.0038	NA	< 0.0047	< 0.0050	0.16 J+	NA
Tetrachloroethene	mg/kg	0.00634	17.1	82.4	0.011	NA	< 0.0035	< 0.0038	NA	0.0040 J	0.0061 J	< 0.0038	NA
Toluene	mg/kg	8.3	991	9660	< 0.0042	NA	< 0.0035	< 0.0038	NA	< 0.0047	< 0.0050	< 0.0038	NA
Total Xylenes	mg/kg	9.89	122	529	< 0.0080	NA	< 0.0071	< 0.0074	NA	< 0.0096	< 0.0096	0.049 J+	NA
Trans-1,2-Dichloroethene	mg/kg	0.625	14.8	64.2	< 0.0042	NA	< 0.0035	< 0.0038	NA	< 0.0047	< 0.0050	0.0020 J+	NA
Trichloroethene	mg/kg	0.0214	0.871	3.98	0.0099	NA	0.0052	0.0055	NA	0.47 J	1.2	< 0.0038	NA
Vinyl Chloride	mg/kg	0.000205	0.0605	1.74	< 0.0060	NA	< 0.0053	< 0.0056	NA	0.0091 J	< 0.0072	0.0060 J+	NA
SW8270E													
2-Methylnaphthalene	mg/kg	3.09	47.8	603	NA	< 0.012	NA	NA	0.16	NA	NA	NA	< 0.026
Acenaphthene	mg/kg	16.4	717	9040	NA	< 0.012	NA	NA	0.16	NA	NA	NA	0.085
Acenaphthylene	mg/kg	NE	NE	NE	NA	0.021	NA	NA	0.069	NA	NA	NA	< 0.026
Anthracene	mg/kg	1320	3590	45200	NA	0.011 J	NA	NA	0.21	NA	NA	NA	0.22
Benzo(a)anthracene	mg/kg	0.354	1.13	20.6	NA	0.021	NA	NA	0.15	NA	NA	NA	0.46
Benzo(a)pyrene	mg/kg	0.118	0.115	2.11	NA	0.035	NA	NA	0.14	NA	NA	NA	0.45
Benzo(b)fluoranthene	mg/kg	1.2	1.15	21.1	NA	0.032	NA	NA	0.12	NA	NA	NA	0.53
Benzo(g,h,i)perylene	mg/kg	NE	NE	NE	NA	0.037	NA	NA	0.077	NA	NA	NA	0.22
Benzo(k)fluoranthene	mg/kg	11.8	11.5	211	NA	0.012 J	NA	NA	0.038	NA	NA	NA	0.18
Caprolactam	mg/kg	19.9	6320	82000	NA	< 0.06	NA	NA	< 0.13	NA	NA	NA	< 0.13
Carbazole	mg/kg	NE	NE	NE	NA	< 0.06	NA	NA	< 0.13	NA	NA	NA	0.11 J
Chrysene	mg/kg	36.1	115	2110	NA	0.022	NA	NA	0.19	NA	NA	NA	0.47
Dibenzofuran	mg/kg	10.4	15.6	234	NA	< 0.06	NA	NA	0.074 J	NA	NA	NA	< 0.13
Di-N-Butylphthalate	mg/kg	35.2	1260	16400	NA	< 0.06	NA	NA	< 0.13	NA	NA	NA	< 0.13
Fluoranthene	mg/kg	667	478	6030	NA	0.031	NA	NA	0.33	NA	NA	NA	0.86
Fluorene	mg/kg	111	478	6030	NA	< 0.012	NA	NA	0.25	NA	NA	NA	0.079
Indeno(1,2,3-Cd)Pyrene	mg/kg	3.9	1.15	21.1	NA	0.021	NA	NA	0.055	NA	NA	NA	0.21
Naphthalene	mg/kg	0.395	2.08	8.84	NA	< 0.012	NA	NA	0.071	NA	NA	NA	< 0.026
Phenanthrene	mg/kg	NE	NE	NE	NA	0.029	NA	NA	0.88	NA	NA	NA	0.82
Pyrene	mg/kg	436	359	4520	NA	0.04	NA	NA	0.54	NA	NA	NA	0.95

Notes:
PSRG - GW Protection = Preliminary Soil Remediation Goal (PSRG) based on the protection of leaching to groundwater.
PSRG Res = PSRG for the protection of human health based on residential exposure scenarios.
PSRG Ind = PSRG for the protection of human health based on commercial / industrial exposure scenarios.
Duplicate sample DUP-SB-01 collected from sample RI-SB-02 (6-8).
Duplicate sample DUP-SB-02 collected from sample RI-SB-16 (4-6).
Duplicate sample DUP-SB-03 collected from sample RI-SB-19 (2-4).
Only constituents that were detected above the Laboratory Limit of Quantitation (LoQ) are shown.
mg/kg = Milligram per kilogram.
NE = Standard not established.
NA = Not analyzed.
Validation qualifiers included:
Non detects shown as < LoQ.
Bold = values detected at >LoQ.
J = Qualified as estimated.
J- = Qualified as estimated, with the estimated value biased low.
J+ = Qualified as estimated, with the estimated value biased high.
Shaded values (if present) exceeded the referenced standard.

Table 7
Analytical Results of Soil Samples
Tarheel Army Missile Plant
Burlington, North Carolina

				Sample ID	RI-SB-09B (6-8)	RI-SB-09B (10-12)	RI-SB-10 (2-4)	RI-SB-10 (6-10)	RI-SB-10 (18-20)	RI-SB-11 (4-6)	RI-SB-11 (10-12)	RI-SB-12 (2-6)	RI-SB-12 (2-4)
				Sample Date	6/20/2022	6/20/2022	6/21/2022	6/21/2022	6/21/2022	6/21/2022	6/21/2022	6/21/2022	6/21/2022
				Latitude	36.09803646	36.09803646	36.09796921	36.09796921	36.09796921	36.09792775	36.09792775	36.09803202	36.09803202
				Longitude	-79.40766256	-79.40766256	-79.40766593	-79.40766593	-79.40766593	-79.40758492	-79.40758492	-79.40795934	-79.40795934
Analyte	Unit	PSRG - GW Protection	PSRG Res	PSRG Ind									
SW6020													
Arsenic	mg/kg	5.84	0.677	3	NA	NA	NA	1.6 J	NA	NA	0.76	2.5	NA
Barium	mg/kg	577	3130	46600	NA	NA	NA	110 J-	NA	NA	220	40	NA
Cadmium	mg/kg	NE	NE	NE	NA	NA	NA	< 0.63 J	NA	NA	< 0.77	< 0.053	NA
Chromium	mg/kg	NE	NE	NE	NA	NA	NA	71 J+	NA	NA	410	26	NA
Lead	mg/kg	270	NE	NE	NA	NA	NA	11 J-	NA	NA	1.9 J	10	NA
Selenium	mg/kg	2.08	78.2	1170	NA	NA	NA	3.0 J	NA	NA	2.6	1.2	NA
Silver	mg/kg	3.4	78.2	1170	NA	NA	NA	< 0.13 J	NA	NA	< 0.16	< 0.11	NA
SW8260D													
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	9830	1420	5960	0.021	0.0048 J	< 0.0046	NA	< 0.0041	< 0.0042	< 0.0047	NA	< 0.0038
1,1-Dichloroethane	mg/kg	0.034	3.77	16.5	< 0.0042	< 0.0043	< 0.0046	NA	< 0.0041	< 0.0042	< 0.0047	NA	< 0.0038
1,1-Dichloroethene	mg/kg	2.49	48.1	211	< 0.0042	< 0.0043	< 0.0046	NA	< 0.0041	< 0.0042	< 0.0047	NA	< 0.0038
2-Butanone	mg/kg	16.7	5540	40500	< 0.0084	< 0.0084	< 0.0092	NA	< 0.0080	< 0.0084	< 0.0096	NA	< 0.0076
Acetone	mg/kg	24.6	14100	210000	< 0.017	< 0.017	< 0.018	NA	< 0.016	0.03	< 0.019	NA	< 0.015
Carbon Disulfide	mg/kg	4.12	162	736	< 0.0042	< 0.0043	< 0.0046	NA	< 0.0041	< 0.0042	< 0.0047	NA	< 0.0038
Cis-1,2-Dichloroethene	mg/kg	0.411	31.3	467	0.0038 J	0.0027 J	< 0.0046	NA	< 0.0041	< 0.0042	< 0.0047	NA	< 0.0038
Cyclohexane	mg/kg	NE	1380	5810	< 0.0042	< 0.0043	< 0.0046	NA	< 0.0041	< 0.0042	< 0.0047	NA	< 0.0038
Ethylbenzene	mg/kg	13.4	6.12	26.9	< 0.0042	< 0.0043	< 0.0046	NA	< 0.0041	< 0.0042	< 0.0047	NA	< 0.0038
Isopropylbenzene	mg/kg	2.29	408	2110	< 0.0042	< 0.0043	< 0.0046	NA	< 0.0041	< 0.0042	< 0.0047	NA	< 0.0038
Methylcyclohexane	mg/kg	NE	NE	NE	< 0.0042	< 0.0043	< 0.0046	NA	< 0.0041	< 0.0042	< 0.0047	NA	< 0.0038
Tetrachloroethene	mg/kg	0.00634	17.1	82.4	< 0.0042	< 0.0043	< 0.0046	NA	< 0.0041	< 0.0042	< 0.0047	NA	< 0.0038
Toluene	mg/kg	8.3	991	9660	< 0.0042	< 0.0043	< 0.0046	NA	< 0.0041	< 0.0042	< 0.0047	NA	< 0.0038
Total Xylenes	mg/kg	9.89	122	529	< 0.0080	< 0.0088	< 0.0088	NA	< 0.0080	< 0.0088	< 0.0096	NA	< 0.0075
Trans-1,2-Dichloroethene	mg/kg	0.625	14.8	64.2	< 0.0042	< 0.0043	< 0.0046	NA	< 0.0041	< 0.0042	< 0.0047	NA	< 0.0038
Trichloroethene	mg/kg	0.0214	0.871	3.98	0.061	0.032	< 0.0046	NA	< 0.0041	< 0.0042	< 0.0047	NA	< 0.0038
Vinyl Chloride	mg/kg	0.000205	0.0605	1.74	< 0.0060	< 0.0066	< 0.0066	NA	< 0.0060	< 0.0066	< 0.0072	NA	< 0.0056
SW8270E													
2-Methylnaphthalene	mg/kg	3.09	47.8	603	NA	NA	NA	< 0.0027	NA	NA	< 0.0031	< 0.01	NA
Acenaphthene	mg/kg	16.4	717	9040	NA	NA	NA	< 0.0027	NA	NA	< 0.0031	< 0.01	NA
Acenaphthylene	mg/kg	NE	NE	NE	NA	NA	NA	< 0.0027	NA	NA	< 0.0031	< 0.01	NA
Anthracene	mg/kg	1320	3590	45200	NA	NA	NA	< 0.0027	NA	NA	< 0.0031	< 0.01	NA
Benzo(a)anthracene	mg/kg	0.354	1.13	20.6	NA	NA	NA	< 0.0027	NA	NA	< 0.0031	< 0.01	NA
Benzo(a)pyrene	mg/kg	0.118	0.115	2.11	NA	NA	NA	< 0.0027	NA	NA	< 0.0031	< 0.01	NA
Benzo(b)fluoranthene	mg/kg	1.2	1.15	21.1	NA	NA	NA	< 0.0027	NA	NA	< 0.0031	< 0.01	NA
Benzo(g,h,i)perylene	mg/kg	NE	NE	NE	NA	NA	NA	< 0.0027	NA	NA	< 0.0031	< 0.01	NA
Benzo(k)fluoranthene	mg/kg	11.8	11.5	211	NA	NA	NA	< 0.0020	NA	NA	< 0.0023	< 0.0078	NA
Caprolactam	mg/kg	19.9	6320	82000	NA	NA	NA	0.011 J	NA	NA	0.0082 J	< 0.053	NA
Carbazole	mg/kg	NE	NE	NE	NA	NA	NA	< 0.014	NA	NA	< 0.015	< 0.053	NA
Chrysene	mg/kg	36.1	115	2110	NA	NA	NA	< 0.0020	NA	NA	< 0.0023	< 0.0078	NA
Dibenzofuran	mg/kg	10.4	15.6	234	NA	NA	NA	< 0.014	NA	NA	< 0.015	< 0.053	NA
Di-N-Butylphthalate	mg/kg	35.2	1260	16400	NA	NA	NA	< 0.014	NA	NA	< 0.015	< 0.053	NA
Fluoranthene	mg/kg	667	478	6030	NA	NA	NA	0.0018 J	NA	NA	0.0029 J	< 0.0078	NA
Fluorene	mg/kg	111	478	6030	NA	NA	NA	< 0.0027	NA	NA	< 0.0031	< 0.01	NA
Indeno(1,2,3-Cd)Pyrene	mg/kg	3.9	1.15	21.1	NA	NA	NA	< 0.0027	NA	NA	< 0.0031	< 0.01	NA
Naphthalene	mg/kg	0.395	2.08	8.84	NA	NA	NA	< 0.0027	NA	NA	< 0.0031	< 0.01	NA
Phenanthrene	mg/kg	NE	NE	NE	NA	NA	NA	< 0.0027	NA	NA	0.0026 J	< 0.01	NA
Pyrene	mg/kg	436	359	4520	NA	NA	NA	0.0024 J	NA	NA	0.0031 J	< 0.01	NA

Notes:
PSRG - GW Protection = Preliminary Soil Remediation Goal (PSRG) based on the protection of leaching to groundwater.
PSRG Res = PSRG for the protection of human health based on residential exposure scenarios.
PSRG Ind = PSRG for the protection of human health based on commercial / industrial exposure scenarios.
Duplicate sample DUP-SB-01 collected from sample RI-SB-02 (6-8).
Duplicate sample DUP-SB-02 collected from sample RI-SB-16 (4-6).
Duplicate sample DUP-SB-03 collected from sample RI-SB-19 (2-4).
Only constituents that were detected above the Laboratory Limit of Quantitation (LoQ) are shown.
mg/kg = Milligram per kilogram.
NE = Standard not established.
NA = Not analyzed.
Validation qualifiers included:
Non detects shown as < LoQ.
Bold = values detected at >LoQ.
J = Qualified as estimated.
J- = Qualified as estimated, with the estimated value biased low.
J+ = Qualified as estimated, with the estimated value biased high.
Shaded values (if present) exceeded the referenced standard.

Table 7
Analytical Results of Soil Samples
Tarheel Army Missile Plant
Burlington, North Carolina

				Sample ID	RI-SB-13 (2-6)	RI-SB-13 (2-4)	RI-SB-13 (4-6)	RI-SB-13 (10-12)	RI-SB-14 (0-4)	RI-SB-14 (0-2)	RI-SB-14 (10-12)	RI-SB-15 (2-4)	RI-SB-15 (12-14)
				Sample Date	6/23/2022	6/22/2022	6/22/2022	6/22/2022	6/22/2022	6/21/2022	6/21/2022	6/21/2022	6/21/2022
				Latitude	36.09801837	36.09801837	36.09801837	36.09801837	36.0977511	36.0977511	36.0977511	36.09773029	36.09773029
				Longitude	-79.40794091	-79.40794091	-79.40794091	-79.40794091	-79.40800199	-79.40800199	-79.40800199	-79.40798499	-79.40798499
Analyte	Unit	PSRG - GW Protection	PSRG Res	PSRG Ind									
SW6020													
Arsenic	mg/kg	5.84	0.677	3	5.6	NA	NA	NA	2.0	NA	NA	1.8	NA
Barium	mg/kg	577	3130	46600	56 J+	NA	NA	NA	41	NA	NA	44	NA
Cadmium	mg/kg	NE	NE	NE	< 0.077	NA	NA	NA	< 0.063	NA	NA	< 0.072	NA
Chromium	mg/kg	NE	NE	NE	40 J-	NA	NA	NA	23	NA	NA	16	NA
Lead	mg/kg	270	NE	NE	30 J-	NA	NA	NA	3.6	NA	NA	3.4	NA
Selenium	mg/kg	2.08	78.2	1170	2.1 J-	NA	NA	NA	1.0 J	NA	NA	1.0 J	NA
Silver	mg/kg	3.4	78.2	1170	< 0.15	NA	NA	NA	< 0.13	NA	NA	< 0.14	NA
SW8260D													
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	9830	1420	5960	NA	< 0.0047	< 0.0042	< 0.0040	NA	< 0.0038	< 0.0046	< 0.0046	< 0.0045
1,1-Dichloroethane	mg/kg	0.034	3.77	16.5	NA	< 0.0047	< 0.0042	< 0.0040	NA	< 0.0038	< 0.0046	< 0.0046	< 0.0045
1,1-Dichloroethene	mg/kg	2.49	48.1	211	NA	< 0.0047	< 0.0042	< 0.0040	NA	< 0.0038	< 0.0046	< 0.0046	< 0.0045
2-Butanone	mg/kg	16.7	5540	40500	NA	< 0.0096	< 0.0084	< 0.0080	NA	< 0.0076	< 0.0092	< 0.0092	< 0.0088
Acetone	mg/kg	24.6	14100	210000	NA	< 0.019	< 0.017	< 0.016	NA	0.014 J	0.011 J	0.019 J	0.0094 J
Carbon Disulfide	mg/kg	4.12	162	736	NA	< 0.0047	< 0.0042	< 0.0040	NA	< 0.0038	< 0.0046	< 0.0046	< 0.0045
Cis-1,2-Dichloroethene	mg/kg	0.411	31.3	467	NA	< 0.0047	< 0.0042	< 0.0040	NA	< 0.0038	< 0.0046	< 0.0046	< 0.0045
Cyclohexane	mg/kg	NE	1380	5810	NA	< 0.0047	< 0.0042	< 0.0040	NA	< 0.0038	< 0.0046	< 0.0046	< 0.0045
Ethylbenzene	mg/kg	13.4	6.12	26.9	NA	< 0.0047	< 0.0042	< 0.0040	NA	< 0.0038	< 0.0046	< 0.0046	< 0.0045
Isopropylbenzene	mg/kg	2.29	408	2110	NA	< 0.0047	< 0.0042	< 0.0040	NA	< 0.0038	< 0.0046	< 0.0046	< 0.0045
Methylcyclohexane	mg/kg	NE	NE	NE	NA	< 0.0047	< 0.0042	< 0.0040	NA	< 0.0038	< 0.0046	< 0.0046	< 0.0045
Tetrachloroethene	mg/kg	0.00634	17.1	82.4	NA	< 0.0047	< 0.0042	< 0.0040	NA	< 0.0038	0.0057	0.014	< 0.0045
Toluene	mg/kg	8.3	991	9660	NA	< 0.0047	< 0.0042	< 0.0040	NA	< 0.0038	< 0.0046	< 0.0046	< 0.0045
Total Xylenes	mg/kg	9.89	122	529	NA	< 0.0096	< 0.0088	< 0.0080	NA	< 0.0076	< 0.0088	< 0.0088	< 0.0088
Trans-1,2-Dichloroethene	mg/kg	0.625	14.8	64.2	NA	< 0.0047	< 0.0042	< 0.0040	NA	< 0.0038	< 0.0046	< 0.0046	< 0.0045
Trichloroethene	mg/kg	0.0214	0.871	3.98	NA	< 0.0047	< 0.0042	< 0.0040	NA	< 0.0038	0.0048 J	0.013	< 0.0045
Vinyl Chloride	mg/kg	0.000205	0.0605	1.74	NA	< 0.0072	< 0.0066	< 0.0060	NA	< 0.0057	< 0.0066	< 0.0066	< 0.0066
SW8270E													
2-Methylnaphthalene	mg/kg	3.09	47.8	603	< 0.012	NA	NA	NA	< 0.0025	NA	NA	< 0.0022	NA
Acenaphthene	mg/kg	16.4	717	9040	< 0.012	NA	NA	NA	< 0.0025	NA	NA	< 0.0022	NA
Acenaphthylene	mg/kg	NE	NE	NE	< 0.012	NA	NA	NA	< 0.0025	NA	NA	< 0.0022	NA
Anthracene	mg/kg	1320	3590	45200	< 0.012	NA	NA	NA	0.0031 J+	NA	NA	0.0041	NA
Benzo(a)anthracene	mg/kg	0.354	1.13	20.6	< 0.012	NA	NA	NA	0.0067 J+	NA	NA	0.051	NA
Benzo(a)pyrene	mg/kg	0.118	0.115	2.11	< 0.012	NA	NA	NA	0.0056 J+	NA	NA	0.047	NA
Benzo(b)fluoranthene	mg/kg	1.2	1.15	21.1	< 0.012	NA	NA	NA	0.0069 J+	NA	NA	0.062	NA
Benzo(g,h,i)perylene	mg/kg	NE	NE	NE	< 0.012	NA	NA	NA	0.0027 J+	NA	NA	0.023	NA
Benzo(k)fluoranthene	mg/kg	11.8	11.5	211	< 0.0089	NA	NA	NA	0.0025 J+	NA	NA	0.025	NA
Caprolactam	mg/kg	19.9	6320	82000	< 0.061	NA	NA	NA	< 0.013	NA	NA	< 0.011	NA
Carbazole	mg/kg	NE	NE	NE	< 0.061	NA	NA	NA	< 0.013	NA	NA	< 0.011	NA
Chrysene	mg/kg	36.1	115	2110	< 0.0089	NA	NA	NA	0.0066 J+	NA	NA	0.048	NA
Dibenzofuran	mg/kg	10.4	15.6	234	< 0.061	NA	NA	NA	< 0.013	NA	NA	< 0.011	NA
Di-N-Butylphthalate	mg/kg	35.2	1260	16400	< 0.061	NA	NA	NA	0.0066 J+	NA	NA	< 0.011	NA
Fluoranthene	mg/kg	667	478	6030	< 0.0089	NA	NA	NA	0.012 J+	NA	NA	0.061	NA
Fluorene	mg/kg	111	478	6030	< 0.012	NA	NA	NA	< 0.0025	NA	NA	< 0.0022	NA
Indeno(1,2,3-Cd)Pyrene	mg/kg	3.9	1.15	21.1	< 0.012	NA	NA	NA	0.0025 J+	NA	NA	0.023	NA
Naphthalene	mg/kg	0.395	2.08	8.84	< 0.012	NA	NA	NA	0.0030 J+	NA	NA	0.0018 J	NA
Phenanthrene	mg/kg	NE	NE	NE	< 0.012	NA	NA	NA	0.013 J+	NA	NA	0.0077	NA
Pyrene	mg/kg	436	359	4520	< 0.012	NA	NA	NA	0.013 J+	NA	NA	0.071	NA

Notes:
PSRG - GW Protection = Preliminary Soil Remediation Goal (PSRG) based on the protection of leaching to groundwater.
PSRG Res = PSRG for the protection of human health based on residential exposure scenarios.
PSRG Ind = PSRG for the protection of human health based on commercial / industrial exposure scenarios.
Duplicate sample DUP-SB-01 collected from sample RI-SB-02 (6-8).
Duplicate sample DUP-SB-02 collected from sample RI-SB-16 (4-6).
Duplicate sample DUP-SB-03 collected from sample RI-SB-19 (2-4).
Only constituents that were detected above the Laboratory Limit of Quantitation (LoQ) are shown.
mg/kg = Milligram per kilogram.
NE = Standard not established.
NA = Not analyzed.
Validation qualifiers included:
Non detects shown as < LoQ.
Bold = values detected at >LoQ.
J = Qualified as estimated.
J- = Qualified as estimated, with the estimated value biased low.
J+ = Qualified as estimated, with the estimated value biased high.
Shaded values (if present) exceeded the referenced standard.

Table 7
Analytical Results of Soil Samples
Tarheel Army Missile Plant
Burlington, North Carolina

				Sample ID	RI-SB-16 (0-4)	RI-SB-16 (0-2)	RI-SB-16 (4-6)	DUP-SB-02	RI-SB-17 (0-6)	RI-SB-17 (2-4)	RI-SB-17 (4-6)	RI-SB-17 (6-8)	RI-SB-17 (8-10)
				Sample Date	6/23/2022	6/22/2022	6/22/2022	6/22/2022	6/23/2022	6/22/2022	6/22/2022	6/22/2022	6/22/2022
				Latitude	36.09801884	36.09801884	36.09801884	36.09801884	36.0980287	36.0980287	36.0980287	36.0980287	36.0980287
				Longitude	-79.40773622	-79.40773622	-79.40773622	-79.40773622	-79.40774415	-79.40774415	-79.40774415	-79.40774415	-79.40774415
Analyte	Unit	PSRG - GW Protection	PSRG Res	PSRG Ind									
SW6020													
Arsenic	mg/kg	5.84	0.677	3	1.9	NA	NA	1.9	1.8	NA	NA	NA	NA
Barium	mg/kg	577	3130	46600	150	NA	NA	120	130	NA	NA	NA	NA
Cadmium	mg/kg	NE	NE	NE	0.25	NA	NA	0.12 J	0.23	NA	NA	NA	NA
Chromium	mg/kg	NE	NE	NE	29	NA	NA	25	63	NA	NA	NA	NA
Lead	mg/kg	270	NE	NE	37	NA	NA	30	48	NA	NA	NA	NA
Selenium	mg/kg	2.08	78.2	1170	3.9	NA	NA	3.8	2.5	NA	NA	NA	NA
Silver	mg/kg	3.4	78.2	1170	0.088 J	NA	NA	< 0.17	0.076 J	NA	NA	NA	NA
SW8260D													
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	9830	1420	5960	NA	0.029	< 0.0049	< 0.0054	NA	< 0.0049	< 3	< 0.12	< 0.58
1,1-Dichloroethane	mg/kg	0.034	3.77	16.5	NA	< 0.0052	< 0.0049	< 0.0054	NA	< 0.0049	< 3	< 0.12	< 0.58
1,1-Dichloroethene	mg/kg	2.49	48.1	211	NA	< 0.0052	< 0.0049	< 0.0054	NA	< 0.0049	< 3	< 0.12	< 0.58
2-Butanone	mg/kg	16.7	5540	40500	NA	< 0.01	< 0.01	< 0.011	NA	< 0.0096 J	< 6.2	< 0.25	< 1.1
Acetone	mg/kg	24.6	14100	210000	NA	0.044	< 0.02	< 0.022	NA	0.037	< 12	< 0.5	< 2.2
Carbon Disulfide	mg/kg	4.12	162	736	NA	0.0033 J	< 0.0049	< 0.0054	NA	< 0.0049	< 3	< 0.12	< 0.58
Cis-1,2-Dichloroethene	mg/kg	0.411	31.3	467	NA	0.0030 J	0.16	0.32 J	NA	0.0032 J	< 3	< 0.12	< 0.58
Cyclohexane	mg/kg	NE	1380	5810	NA	0.0045 J	< 0.0049	< 0.0054	NA	< 0.0049	< 3	< 0.12	< 0.58
Ethylbenzene	mg/kg	13.4	6.12	26.9	NA	0.0069	< 0.0049	< 0.0054	NA	< 0.0049	< 3	< 0.12	< 0.58
Isopropylbenzene	mg/kg	2.29	408	2110	NA	0.0049 J	< 0.0049	< 0.0054	NA	< 0.0049	< 3	< 0.12	< 0.58
Methylcyclohexane	mg/kg	NE	NE	NE	NA	0.081	< 0.0049	0.0075	NA	< 0.0049	< 3	< 0.12	< 0.58
Tetrachloroethene	mg/kg	0.00634	17.1	82.4	NA	< 0.0052	< 0.0049	0.01	NA	< 0.0049	< 3	< 0.12	< 0.58
Toluene	mg/kg	8.3	991	9660	NA	0.0037 J	< 0.0049	< 0.0054	NA	< 0.0049	< 3	< 0.12	< 0.58
Total Xylenes	mg/kg	9.89	122	529	NA	0.019	< 0.0096	< 0.011	NA	< 0.0096	< 6.1	< 0.24	< 1.1
Trans-1,2-Dichloroethene	mg/kg	0.625	14.8	64.2	NA	< 0.0052	< 0.0049	< 0.0054	NA	< 0.0049	< 3	< 0.12	< 0.58
Trichloroethene	mg/kg	0.0214	0.871	3.98	NA	< 0.0052	3.6	1.3	NA	12	6900 J+	190 J+	670 J+
Vinyl Chloride	mg/kg	0.000205	0.0605	1.74	NA	0.044	< 0.0072	0.0063 J	NA	< 0.0072	< 4.6	< 0.18	< 0.85
SW8270E													
2-Methylnaphthalene	mg/kg	3.09	47.8	603	0.016 J	NA	NA	< 0.027	0.052	NA	NA	NA	NA
Acenaphthene	mg/kg	16.4	717	9040	0.015 J	NA	NA	< 0.027	0.023 J	NA	NA	NA	NA
Acenaphthylene	mg/kg	NE	NE	NE	0.018	NA	NA	< 0.027	0.051	NA	NA	NA	NA
Anthracene	mg/kg	1320	3590	45200	0.043	NA	NA	0.032 J	0.066	NA	NA	NA	NA
Benzo(a)anthracene	mg/kg	0.354	1.13	20.6	0.1	NA	NA	0.072	0.14	NA	NA	NA	NA
Benzo(a)pyrene	mg/kg	0.118	0.115	2.11	0.1	NA	NA	0.063	0.19	NA	NA	NA	NA
Benzo(b)fluoranthene	mg/kg	1.2	1.15	21.1	0.16	NA	NA	0.099	0.25	NA	NA	NA	NA
Benzo(g,h,i)perylene	mg/kg	NE	NE	NE	0.067	NA	NA	0.06	0.15	NA	NA	NA	NA
Benzo(k)fluoranthene	mg/kg	11.8	11.5	211	0.059	NA	NA	0.034 J	0.1	NA	NA	NA	NA
Caprolactam	mg/kg	19.9	6320	82000	< 0.066	NA	NA	< 0.14	< 0.12	NA	NA	NA	NA
Carbazole	mg/kg	NE	NE	NE	< 0.066	NA	NA	< 0.14	0.086 J	NA	NA	NA	NA
Chrysene	mg/kg	36.1	115	2110	0.11	NA	NA	0.085	0.21	NA	NA	NA	NA
Dibenzofuran	mg/kg	10.4	15.6	234	< 0.066	NA	NA	< 0.14	< 0.12	NA	NA	NA	NA
Di-N-Butylphthalate	mg/kg	35.2	1260	16400	< 0.066	NA	NA	< 0.14	< 0.12	NA	NA	NA	NA
Fluoranthene	mg/kg	667	478	6030	0.19	NA	NA	0.13	0.16	NA	NA	NA	NA
Fluorene	mg/kg	111	478	6030	< 0.013	NA	NA	0.022 J	0.036	NA	NA	NA	NA
Indeno(1,2,3-Cd)Pyrene	mg/kg	3.9	1.15	21.1	0.059	NA	NA	0.051	0.12	NA	NA	NA	NA
Naphthalene	mg/kg	0.395	2.08	8.84	0.016 J	NA	NA	< 0.027	0.049	NA	NA	NA	NA
Phenanthrene	mg/kg	NE	NE	NE	0.19	NA	NA	0.14	0.36	NA	NA	NA	NA
Pyrene	mg/kg	436	359	4520	0.23	NA	NA	0.19	0.22	NA	NA	NA	NA

Notes:
PSRG - GW Protection = Preliminary Soil Remediation Goal (PSRG) based on the protection of leaching to groundwater.
PSRG Res = PSRG for the protection of human health based on residential exposure scenarios.
PSRG Ind = PSRG for the protection of human health based on commercial / industrial exposure scenarios.
Duplicate sample DUP-SB-01 collected from sample RI-SB-02 (6-8).
Duplicate sample DUP-SB-02 collected from sample RI-SB-16 (4-6).
Duplicate sample DUP-SB-03 collected from sample RI-SB-19 (2-4).
Only constituents that were detected above the Laboratory Limit of Quantitation (LoQ) are shown.
mg/kg = Milligram per kilogram.
NE = Standard not established.
NA = Not analyzed.
Validation qualifiers included:
Non detects shown as < LoQ.
Bold = values detected at >LoQ.
J = Qualified as estimated.
J- = Qualified as estimated, with the estimated value biased low.
J+ = Qualified as estimated, with the estimated value biased high.
Shaded values (if present) exceeded the referenced standard.

Table 7
Analytical Results of Soil Samples
Tarheel Army Missile Plant
Burlington, North Carolina

				Sample ID	RI-SB-18 (0-6)	RI-SB-18 (2-4)	RI-SB-18 (6-8)	RI-SB-19 (0-4)	RI-SB-19 (2-4)	DUP-SB-03	RI-SB-19 (6-8)	RI-SB-20 (0-6)	RI-SB-20 (0-2)
				Sample Date	6/23/2022	6/22/2022	6/22/2022	6/23/2022	6/22/2022	6/22/2022	6/22/2022	6/23/2022	6/22/2022
				Latitude	36.0980283	36.0980283	36.0980283	36.09804639	36.09804639	36.09804639	36.09804639	36.09803343	36.09803343
				Longitude	-79.40778288	-79.40778288	-79.40778288	-79.40774279	-79.40774279	-79.40774279	-79.40774279	-79.40770577	-79.40770577
Analyte	Unit	PSRG - GW Protection	PSRG Res	PSRG Ind									
SW6020													
Arsenic	mg/kg	5.84	0.677	3	1.5	NA	NA	2.6	NA	2.2	NA	1.7	NA
Barium	mg/kg	577	3130	46600	130	NA	NA	74	NA	78	NA	70	NA
Cadmium	mg/kg	NE	NE	NE	< 0.072	NA	NA	0.034 J	NA	0.034 J	NA	< 0.067	NA
Chromium	mg/kg	NE	NE	NE	54	NA	NA	36	NA	34	NA	27	NA
Lead	mg/kg	270	NE	NE	3.2	NA	NA	9.1	NA	28	NA	5.2	NA
Selenium	mg/kg	2.08	78.2	1170	3.9	NA	NA	1.9	NA	1.3 J	NA	1.6	NA
Silver	mg/kg	3.4	78.2	1170	< 0.15	NA	NA	< 0.15	NA	< 0.15	NA	< 0.13	NA
SW8260D													
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	9830	1420	5960	NA	< 0.0042	< 0.0045	NA	< 0.0054	< 0.053	< 0.053	NA	< 0.0041
1,1-Dichloroethane	mg/kg	0.034	3.77	16.5	NA	< 0.0042	< 0.0045	NA	< 0.0054	< 0.053	< 0.053	NA	< 0.0041
1,1-Dichloroethene	mg/kg	2.49	48.1	211	NA	< 0.0042	< 0.0045	NA	< 0.0054	< 0.053	< 0.053	NA	< 0.0041
2-Butanone	mg/kg	16.7	5540	40500	NA	< 0.0084 J	< 0.0092 J	NA	< 0.011	< 0.1	< 0.1	NA	< 0.0080
Acetone	mg/kg	24.6	14100	210000	NA	0.01 J	< 0.018	NA	< 0.022	< 0.21	< 0.21	NA	0.068
Carbon Disulfide	mg/kg	4.12	162	736	NA	< 0.0042	< 0.0045	NA	< 0.0054	< 0.053	< 0.053	NA	< 0.0041
Cis-1,2-Dichloroethene	mg/kg	0.411	31.3	467	NA	0.011	0.019	NA	< 0.0054	< 0.053	< 0.053	NA	0.035
Cyclohexane	mg/kg	NE	1380	5810	NA	< 0.0042	< 0.0045	NA	< 0.0054	< 0.053	< 0.053	NA	< 0.0041
Ethylbenzene	mg/kg	13.4	6.12	26.9	NA	< 0.0042	< 0.0045	NA	< 0.0054	< 0.053	< 0.053	NA	< 0.0041
Isopropylbenzene	mg/kg	2.29	408	2110	NA	< 0.0042	< 0.0045	NA	< 0.0054	< 0.053	< 0.053	NA	< 0.0041
Methylcyclohexane	mg/kg	NE	NE	NE	NA	< 0.0042	< 0.0045	NA	< 0.0054	< 0.053	< 0.053	NA	< 0.0041
Tetrachloroethene	mg/kg	0.00634	17.1	82.4	NA	< 0.0042	< 0.0045	NA	< 0.0054	< 0.053	< 0.053	NA	< 0.0041
Toluene	mg/kg	8.3	991	9660	NA	< 0.0042	< 0.0045	NA	< 0.0054	< 0.053	< 0.053	NA	< 0.0041
Total Xylenes	mg/kg	9.89	122	529	NA	< 0.0088	< 0.0088	NA	< 0.011	< 0.1	< 0.11	NA	< 0.0080
Trans-1,2-Dichloroethene	mg/kg	0.625	14.8	64.2	NA	< 0.0042	< 0.0045	NA	< 0.0054	< 0.053	< 0.053	NA	0.0042 J
Trichloroethene	mg/kg	0.0214	0.871	3.98	NA	0.11	0.35 J	NA	1.8 J	47 J	11	NA	0.19
Vinyl Chloride	mg/kg	0.000205	0.0605	1.74	NA	< 0.0066	< 0.0066	NA	< 0.0082	< 0.078	< 0.08	NA	0.01 J+
SW8270E													
2-Methylnaphthalene	mg/kg	3.09	47.8	603	< 0.024	NA	NA	0.023 J	NA	< 0.024	NA	0.01 J	NA
Acenaphthene	mg/kg	16.4	717	9040	< 0.024	NA	NA	< 0.024	NA	< 0.024	NA	< 0.013	NA
Acenaphthylene	mg/kg	NE	NE	NE	0.019 J	NA	NA	0.068	NA	0.029 J	NA	< 0.013	NA
Anthracene	mg/kg	1320	3590	45200	< 0.024	NA	NA	0.044	NA	0.018 J	NA	< 0.013	NA
Benzo(a)anthracene	mg/kg	0.354	1.13	20.6	< 0.024	NA	NA	0.05	NA	0.037	NA	0.017	NA
Benzo(a)pyrene	mg/kg	0.118	0.115	2.11	< 0.024	NA	NA	0.065	NA	0.037	NA	0.019	NA
Benzo(b)fluoranthene	mg/kg	1.2	1.15	21.1	< 0.024	NA	NA	0.078	NA	< 0.024	NA	0.021	NA
Benzo(g,h,i)perylene	mg/kg	NE	NE	NE	< 0.024	NA	NA	0.059	NA	0.037	NA	0.013 J	NA
Benzo(k)fluoranthene	mg/kg	11.8	11.5	211	< 0.018	NA	NA	0.02 J	NA	< 0.018	NA	< 0.0094	NA
Caprolactam	mg/kg	19.9	6320	82000	< 0.12	NA	NA	< 0.12	NA	< 0.12	NA	< 0.062	NA
Carbazole	mg/kg	NE	NE	NE	< 0.12	NA	NA	< 0.12	NA	< 0.12	NA	< 0.062	NA
Chrysene	mg/kg	36.1	115	2110	< 0.018	NA	NA	0.049	NA	0.025 J	NA	0.012 J	NA
Dibenzofuran	mg/kg	10.4	15.6	234	< 0.12	NA	NA	< 0.12	NA	< 0.12	NA	< 0.062	NA
Di-N-Butylphthalate	mg/kg	35.2	1260	16400	< 0.12	NA	NA	< 0.12	NA	< 0.12	NA	< 0.062	NA
Fluoranthene	mg/kg	667	478	6030	< 0.018	NA	NA	0.057	NA	0.033	NA	0.021	NA
Fluorene	mg/kg	111	478	6030	< 0.024	NA	NA	0.034	NA	< 0.024	NA	< 0.013	NA
Indeno(1,2,3-Cd)Pyrene	mg/kg	3.9	1.15	21.1	< 0.024	NA	NA	0.04	NA	0.023 J	NA	< 0.013	NA
Naphthalene	mg/kg	0.395	2.08	8.84	< 0.024	NA	NA	< 0.024	NA	< 0.024	NA	< 0.013	NA
Phenanthrene	mg/kg	NE	NE	NE	< 0.024	NA	NA	0.088	NA	0.041	NA	0.02	NA
Pyrene	mg/kg	436	359	4520	< 0.024	NA	NA	0.16	NA	0.097	NA	0.031	NA

Notes:
PSRG - GW Protection = Preliminary Soil Remediation Goal (PSRG) based on the protection of leaching to groundwater.
PSRG Res = PSRG for the protection of human health based on residential exposure scenarios.
PSRG Ind = PSRG for the protection of human health based on commercial / industrial exposure scenarios.
Duplicate sample DUP-SB-01 collected from sample RI-SB-02 (6-8).
Duplicate sample DUP-SB-02 collected from sample RI-SB-16 (4-6).
Duplicate sample DUP-SB-03 collected from sample RI-SB-19 (2-4).
Only constituents that were detected above the Laboratory Limit of Quantitation (LoQ) are shown.
mg/kg = Milligram per kilogram.
NE = Standard not established.
NA = Not analyzed.
Validation qualifiers included:
Non detects shown as < LoQ.
Bold = values detected at >LoQ.
J = Qualified as estimated.
J- = Qualified as estimated, with the estimated value biased low.
J+ = Qualified as estimated, with the estimated value biased high.
Shaded values (if present) exceeded the referenced standard.

Table 7
Analytical Results of Soil Samples
Tarheel Army Missile Plant
Burlington, North Carolina

				Sample ID	RI-SB-20 (4-6)	RI-SB-21 (0-4)	RI-SB-21 (0-2)	RI-SB-21 (2-4)	RI-SB-22 (0-8)	RI-SB-22 (2-4)	RI-SB-22 (4-6)	RI-SB-22 (6-8)	RI-SB-23 (4-8)
				Sample Date	6/22/2022	6/23/2022	6/22/2022	6/22/2022	6/23/2022	6/22/2022	6/22/2022	6/22/2022	6/23/2022
				Latitude	36.09803343	36.09806725	36.09806725	36.09806725	36.0980464	36.0980464	36.0980464	36.0980464	36.09816577
				Longitude	-79.40770577	-79.40775783	-79.40775783	-79.40775783	-79.40777929	-79.40777929	-79.40777929	-79.40777929	-79.40780154
Analyte	Unit	PSRG - GW Protection	PSRG Res	PSRG Ind									
SW6020													
Arsenic	mg/kg	5.84	0.677	3	NA	1.5	NA	NA	1.2	NA	NA	NA	2.0
Barium	mg/kg	577	3130	46600	NA	78	NA	NA	48	NA	NA	NA	54
Cadmium	mg/kg	NE	NE	NE	NA	< 0.063	NA	NA	< 0.067	NA	NA	NA	< 0.072
Chromium	mg/kg	NE	NE	NE	NA	16	NA	NA	21	NA	NA	NA	55
Lead	mg/kg	270	NE	NE	NA	6.0	NA	NA	5.1	NA	NA	NA	1.6 J
Selenium	mg/kg	2.08	78.2	1170	NA	1.1 J	NA	NA	1.1 J	NA	NA	NA	1.9
Silver	mg/kg	3.4	78.2	1170	NA	< 0.13	NA	NA	< 0.14	NA	NA	NA	< 0.15
SW8260D													
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	9830	1420	5960	0.0076	NA	< 0.0040	< 0.0034	NA	< 0.0042	< 0.0042	< 0.0038	NA
1,1-Dichloroethane	mg/kg	0.034	3.77	16.5	< 0.0045	NA	0.0086	0.0019 J	NA	< 0.0042	0.0024 J	< 0.0038	NA
1,1-Dichloroethene	mg/kg	2.49	48.1	211	< 0.0045	NA	< 0.0040	< 0.0034	NA	< 0.0042	0.0025 J	< 0.0038	NA
2-Butanone	mg/kg	16.7	5540	40500	< 0.0088	NA	< 0.0080	< 0.0068	NA	< 0.0084	< 0.0084	< 0.0076	NA
Acetone	mg/kg	24.6	14100	210000	< 0.018	NA	0.063	0.083	NA	0.079	< 0.017	< 0.015	NA
Carbon Disulfide	mg/kg	4.12	162	736	< 0.0045	NA	< 0.0040	< 0.0034	NA	< 0.0042	< 0.0042	< 0.0038	NA
Cis-1,2-Dichloroethene	mg/kg	0.411	31.3	467	0.025	NA	0.16	0.0073	NA	0.41 J	0.22 J	0.027	NA
Cyclohexane	mg/kg	NE	1380	5810	< 0.0045	NA	< 0.0040	< 0.0034	NA	< 0.0042	< 0.0042	< 0.0038	NA
Ethylbenzene	mg/kg	13.4	6.12	26.9	< 0.0045	NA	< 0.0040	< 0.0034	NA	< 0.0042	< 0.0042	< 0.0038	NA
Isopropylbenzene	mg/kg	2.29	408	2110	< 0.0045	NA	< 0.0040	< 0.0034	NA	< 0.0042	< 0.0042	< 0.0038	NA
Methylcyclohexane	mg/kg	NE	NE	NE	< 0.0045	NA	< 0.0040	< 0.0034	NA	< 0.0042	< 0.0042	< 0.0038	NA
Tetrachloroethene	mg/kg	0.00634	17.1	82.4	< 0.0045	NA	< 0.0040	< 0.0034	NA	< 0.0042	< 0.0042	< 0.0038	NA
Toluene	mg/kg	8.3	991	9660	< 0.0045	NA	< 0.0040	< 0.0034	NA	< 0.0042	< 0.0042	< 0.0038	NA
Total Xylenes	mg/kg	9.89	122	529	< 0.0088	NA	< 0.0080	< 0.0069	NA	< 0.0080	< 0.0080	< 0.0076	NA
Trans-1,2-Dichloroethene	mg/kg	0.625	14.8	64.2	< 0.0045	NA	0.0097	< 0.0034	NA	0.0046 J	0.0034 J	< 0.0038	NA
Trichloroethene	mg/kg	0.0214	0.871	3.98	0.47	NA	0.0089	0.018	NA	0.033	0.55	0.13	NA
Vinyl Chloride	mg/kg	0.000205	0.0605	1.74	< 0.0066	NA	0.06 J+	0.06 J+	NA	0.0068 J+	< 0.0060	< 0.0057	NA
SW8270E													
2-Methylnaphthalene	mg/kg	3.09	47.8	603	NA	< 0.024	NA	NA	0.016	NA	NA	NA	< 0.023
Acenaphthene	mg/kg	16.4	717	9040	NA	< 0.024	NA	NA	< 0.012	NA	NA	NA	0.11
Acenaphthylene	mg/kg	NE	NE	NE	NA	< 0.024	NA	NA	< 0.012	NA	NA	NA	< 0.023
Anthracene	mg/kg	1320	3590	45200	NA	< 0.024	NA	NA	0.012 J	NA	NA	NA	0.31
Benzo(a)anthracene	mg/kg	0.354	1.13	20.6	NA	< 0.024	NA	NA	0.0090 J	NA	NA	NA	2.1
Benzo(a)pyrene	mg/kg	0.118	0.115	2.11	NA	< 0.024	NA	NA	< 0.012	NA	NA	NA	2.5
Benzo(b)fluoranthene	mg/kg	1.2	1.15	21.1	NA	< 0.024	NA	NA	0.01 J	NA	NA	NA	2.8
Benzo(g,h,i)perylene	mg/kg	NE	NE	NE	NA	0.017 J	NA	NA	0.012 J	NA	NA	NA	0.78
Benzo(k)fluoranthene	mg/kg	11.8	11.5	211	NA	< 0.018	NA	NA	< 0.0089	NA	NA	NA	1.2
Caprolactam	mg/kg	19.9	6320	82000	NA	< 0.12	NA	NA	< 0.058	NA	NA	NA	< 0.12
Carbazole	mg/kg	NE	NE	NE	NA	< 0.12	NA	NA	< 0.058	NA	NA	NA	0.27
Chrysene	mg/kg	36.1	115	2110	NA	< 0.018	NA	NA	0.016	NA	NA	NA	2
Dibenzofuran	mg/kg	10.4	15.6	234	NA	< 0.12	NA	NA	< 0.058	NA	NA	NA	< 0.12
Di-N-Butylphthalate	mg/kg	35.2	1260	16400	NA	< 0.12	NA	NA	< 0.058	NA	NA	NA	< 0.12
Fluoranthene	mg/kg	667	478	6030	NA	0.027 J	NA	NA	< 0.0089	NA	NA	NA	2.3
Fluorene	mg/kg	111	478	6030	NA	< 0.024	NA	NA	< 0.012	NA	NA	NA	0.046
Indeno(1,2,3-Cd)Pyrene	mg/kg	3.9	1.15	21.1	NA	< 0.024	NA	NA	0.0085 J	NA	NA	NA	0.82
Naphthalene	mg/kg	0.395	2.08	8.84	NA	< 0.024	NA	NA	< 0.012	NA	NA	NA	0.028 J
Phenanthrene	mg/kg	NE	NE	NE	NA	0.028 J	NA	NA	0.022	NA	NA	NA	0.87
Pyrene	mg/kg	436	359	4520	NA	0.026 J	NA	NA	0.024	NA	NA	NA	2.8

Notes:
PSRG - GW Protection = Preliminary Soil Remediation Goal (PSRG) based on the protection of leaching to groundwater.
PSRG Res = PSRG for the protection of human health based on residential exposure scenarios.
PSRG Ind = PSRG for the protection of human health based on commercial / industrial exposure scenarios.
Duplicate sample DUP-SB-01 collected from sample RI-SB-02 (6-8).
Duplicate sample DUP-SB-02 collected from sample RI-SB-16 (4-6).
Duplicate sample DUP-SB-03 collected from sample RI-SB-19 (2-4).
Only constituents that were detected above the Laboratory Limit of Quantitation (LoQ) are shown.
mg/kg = Milligram per kilogram.
NE = Standard not established.
NA = Not analyzed.
Validation qualifiers included:
Non detects shown as < LoQ.
Bold = values detected at >LoQ.
J = Qualified as estimated.
J- = Qualified as estimated, with the estimated value biased low.
J+ = Qualified as estimated, with the estimated value biased high.
Shaded values (if present) exceeded the referenced standard.

Table 7
Analytical Results of Soil Samples
Tarheel Army Missile Plant
Burlington, North Carolina

				Sample ID	RI-SB-23 (6-8)	RI-SB-23 (16-18)	RI-SB-24 (0-6)	RI-SB-24 (0-4)	RI-SB-24 (8-10)
				Sample Date	6/22/2022	6/22/2022	6/24/2022	6/24/2022	6/24/2022
				Latitude	36.09816577	36.09816577	36.09808723	36.09808723	36.09808723
				Longitude	-79.40780154	-79.40780154	-79.40778471	-79.40778471	-79.40778471
Analyte	Unit	PSRG - GW Protection	PSRG Res	PSRG Ind					
SW6020									
Arsenic	mg/kg	5.84	0.677	3	NA	NA	0.97	NA	NA
Barium	mg/kg	577	3130	46600	NA	NA	160 J-	NA	NA
Cadmium	mg/kg	NE	NE	NE	NA	NA	0.096 J	NA	NA
Chromium	mg/kg	NE	NE	NE	NA	NA	13	NA	NA
Lead	mg/kg	270	NE	NE	NA	NA	4.2	NA	NA
Selenium	mg/kg	2.08	78.2	1170	NA	NA	1.3	NA	NA
Silver	mg/kg	3.4	78.2	1170	NA	NA	< 0.11	NA	NA
SW8260D									
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	9830	1420	5960	< 0.0038	< 0.0044	NA	< 0.0038	< 0.0045
1,1-Dichloroethane	mg/kg	0.034	3.77	16.5	< 0.0038	< 0.0044	NA	< 0.0038	< 0.0045
1,1-Dichloroethene	mg/kg	2.49	48.1	211	< 0.0038	< 0.0044	NA	< 0.0038	< 0.0045
2-Butanone	mg/kg	16.7	5540	40500	< 0.0076	< 0.0088	NA	< 0.0076	< 0.0088
Acetone	mg/kg	24.6	14100	210000	< 0.015	0.012 J	NA	0.044	< 0.018
Carbon Disulfide	mg/kg	4.12	162	736	< 0.0038	< 0.0044	NA	< 0.0038	< 0.0045
Cis-1,2-Dichloroethene	mg/kg	0.411	31.3	467	0.0024 J	0.021	NA	0.04	0.043
Cyclohexane	mg/kg	NE	1380	5810	< 0.0038	< 0.0044	NA	< 0.0038	< 0.0045
Ethylbenzene	mg/kg	13.4	6.12	26.9	< 0.0038	< 0.0044	NA	< 0.0038	< 0.0045
Isopropylbenzene	mg/kg	2.29	408	2110	< 0.0038	< 0.0044	NA	< 0.0038	< 0.0045
Methylcyclohexane	mg/kg	NE	NE	NE	< 0.0038	< 0.0044	NA	< 0.0038	< 0.0045
Tetrachloroethene	mg/kg	0.00634	17.1	82.4	< 0.0038	< 0.0044	NA	0.019	< 0.0045
Toluene	mg/kg	8.3	991	9660	< 0.0038	< 0.0044	NA	< 0.0038	< 0.0045
Total Xylenes	mg/kg	9.89	122	529	< 0.0074	< 0.0088	NA	< 0.0075	< 0.0088
Trans-1,2-Dichloroethene	mg/kg	0.625	14.8	64.2	< 0.0038	< 0.0044	NA	< 0.0038	0.0046 J
Trichloroethene	mg/kg	0.0214	0.871	3.98	0.0064	0.0057 J	NA	0.11	0.0047 J
Vinyl Chloride	mg/kg	0.000205	0.0605	1.74	< 0.0056	< 0.0066	NA	< 0.0056	< 0.0066
SW8270E									
2-Methylnaphthalene	mg/kg	3.09	47.8	603	NA	NA	< 0.042	NA	NA
Acenaphthene	mg/kg	16.4	717	9040	NA	NA	< 0.042	NA	NA
Acenaphthylene	mg/kg	NE	NE	NE	NA	NA	< 0.042	NA	NA
Anthracene	mg/kg	1320	3590	45200	NA	NA	< 0.042	NA	NA
Benzo(a)anthracene	mg/kg	0.354	1.13	20.6	NA	NA	< 0.042	NA	NA
Benzo(a)pyrene	mg/kg	0.118	0.115	2.11	NA	NA	< 0.042	NA	NA
Benzo(b)fluoranthene	mg/kg	1.2	1.15	21.1	NA	NA	0.02 J	NA	NA
Benzo(g,h,i)perylene	mg/kg	NE	NE	NE	NA	NA	0.017 J	NA	NA
Benzo(k)fluoranthene	mg/kg	11.8	11.5	211	NA	NA	< 0.032	NA	NA
Caprolactam	mg/kg	19.9	6320	82000	NA	NA	< 0.22	NA	NA
Carbazole	mg/kg	NE	NE	NE	NA	NA	< 0.22	NA	NA
Chrysene	mg/kg	36.1	115	2110	NA	NA	< 0.032	NA	NA
Dibenzofuran	mg/kg	10.4	15.6	234	NA	NA	< 0.22	NA	NA
Di-N-Butylphthalate	mg/kg	35.2	1260	16400	NA	NA	< 0.22	NA	NA
Fluoranthene	mg/kg	667	478	6030	NA	NA	< 0.032	NA	NA
Fluorene	mg/kg	111	478	6030	NA	NA	< 0.042	NA	NA
Indeno(1,2,3-Cd)Pyrene	mg/kg	3.9	1.15	21.1	NA	NA	< 0.042	NA	NA
Naphthalene	mg/kg	0.395	2.08	8.84	NA	NA	< 0.042	NA	NA
Phenanthrene	mg/kg	NE	NE	NE	NA	NA	0.021 J	NA	NA
Pyrene	mg/kg	436	359	4520	NA	NA	< 0.042	NA	NA

Notes:
PSRG - GW Protection = Preliminary Soil Remediation Goal (PSRG) based on the protection of leaching to groundwater.
PSRG Res = PSRG for the protection of human health based on residential exposure scenarios.
PSRG Ind = PSRG for the protection of human health based on commercial / industrial exposure scenarios.
Duplicate sample DUP-SB-01 collected from sample RI-SB-02 (6-8).
Duplicate sample DUP-SB-02 collected from sample RI-SB-16 (4-6).
Duplicate sample DUP-SB-03 collected from sample RI-SB-19 (2-4).
Only constituents that were detected above the Laboratory Limit of Quantitation (LoQ) are shown.
mg/kg = Milligram per kilogram.
NE = Standard not established.
NA = Not analyzed.
Validation qualifiers included:
Non detects shown as < LoQ.
Bold = values detected at >LoQ.
J = Qualified as estimated.
J- = Qualified as estimated, with the estimated value biased low.
J+ = Qualified as estimated, with the estimated value biased high.
Shaded values (if present) exceeded the referenced standard.

Table 8
Retardation Factor Calculations and Results
Tarheel Army Missile Plant
Burlington, North Carolina

Chemical Constituent	Organic Carbon / Water Partition Coefficient (K_{oc}) (L/kg)	Source	Fraction Organic Carbon (f_{oc}) (4) (%)	Distribution Coefficient for Soil (K_d) (L/kg)	Porosity (θ) --	Bulk Density (r_b) (5) (kg/L)	Retardation Factor (R)	Relative Factor for Contamination Migration (6) (%)
Tetrachloroethene (PCE)	272	(1)	0.117%	0.319	0.25	1.50	2.92	0.34
Trichloroethene (TCE)	97	(1)	0.117%	0.114	0.25	1.50	1.68	0.59
cis-1,2-Dichloroethene (cis-1,2-DCE)	38	(1)	0.117%	0.045	0.25	1.50	1.27	0.79
Vinyl Chloride	56	(2)	0.117%	0.066	0.25	1.50	1.39	0.72
1,1-Dichloroethane	54	(1)	0.117%	0.063	0.25	1.50	1.38	0.72
1,2-Dichloroethane	44	(1)	0.117%	0.052	0.25	1.50	1.31	0.76
Benzene	66	(1)	0.117%	0.077	0.25	1.50	1.46	0.68
Toluene	182	(1)	0.117%	0.214	0.25	1.50	2.28	0.44
Methyl Tert-Butyl Ether (MTBE)	11	(3)	0.117%	0.013	0.25	1.50	1.08	0.93

Where:

K_{oc} = Organic carbon/water partition coefficient

f_{oc} = Fraction Organic Carbon

k_d = (soil) distribution coefficient = f_{oc} K_{oc}

r_b = bulk density of soil (dry)

q = Porosity of Aquifer Matrix

Retardation Factor $R = 1 + r_b k_d / \theta$

Notes:

(1) USEPA, 1996, Soil Screening Guidance: Technical Background Document, EPA/540/R95/128, May.

(2) USEPA. Technical Factsheet on: VINYL CHLORIDE (https://semspub.epa.gov/work/05/437069.pdf)

(3) Parsons Engineering Science, Inc., 1999, Final Methyl - Butyl Ether (MTBE), Its Movement and Fate in the Environment and Potential for Natural Attenuation.

(4) Average foc values from Remedial Investigation (See Table 6 of Remedial Investigation Report, Terracon Consultants, Inc. dated December 16, 2022)

(5) NCDEQ, 2019, Preliminary Soil Remediation Goals (PSRG), May.

(6) Reduction Factor for Flow Velocity in the Shallow (Saprolite) Aquifer, as compared to the bulk groundwater flow velocity.

Table 9
Analytical Results of Groundwater Grab Samples
Tarheel Army Missile Plant
Burlington, North Carolina

		Sample Location:	RI-GW-01	RI-GW-02	DUP-GW-01	RI-GW-04	RI-GW-05	RI-GW-06	RI-GW-07	RI-GW-08
		Sample Date:	6/23/2022	6/23/2022	6/23/2022	6/23/2022	6/24/2022	6/24/2022	6/24/2022	6/24/2022
		Estimated Ground Surface Elevation (feet msl):	587.50	598.00	598.00	596.00	579.00	580.00	597.00	591.00
		Top of Screen Interval (feet bls):	3.0	12.0	12.0	18.0	2.5	4.0	9.0	6.5
		Bottom of Screen Interval (feet bls):	13.0	16.0	16.0	22.0	12.5	9.0	19.0	16.5
		Latitude:	36.10011621	36.09965568	36.09965568	36.09879431	36.09821889	36.09793833	36.09795289	36.09791169
		Longitude:	-79.40765714	-79.40668738	-79.40668738	-79.409779793	-79.410694534	-79.410605798	-79.4097951	-79.41006644
Analyte	Unit	2L Standard								
SW8260D										
1,1,1-Trichloroethane	ug/l	200	< 0.80 J	2.4 J	2.6 J	< 0.80 J	< 0.80	< 0.80	< 0.80	< 0.80
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/l	200,000	< 0.84 J	20 J	20 J	< 0.84 J	< 0.84	< 0.84	< 0.84	< 0.84
1,1-Dichloroethane	ug/l	6	0.52 J	13 J	14 J	< 0.80 J	1.9	1.4	< 0.80	< 0.80
1,1-Dichloroethene	ug/l	350	0.41 J	32 J	33 J	< 0.80 J	1.6	< 0.80	< 0.80	< 0.80
1,2-Dichloroethane	ug/l	0.4	1.1 J	3.2 J	3.2 J	< 0.80 J	< 0.80	< 0.80	< 0.80	< 0.80
2-Butanone	ug/l	4,000	4.0 J	< 4.0 J	< 4.0 J	< 4.0 J	< 4.0	< 4.0	< 4.0	< 4.0
4-Methyl-2-Pentanone	ug/l	100	2.0 J	< 4.0 J	< 4.0 J	< 4.0 J	< 4.0	< 4.0	< 4.0	2.6 J
Acetone	ug/l	6,000	68 J	< 10 J	< 10 J	< 10 J	< 10	13 J	13 J	15 J
Chloroform	ug/l	70	< 0.80 J	1.7 J	1.9 J	< 0.80 J	< 0.80	0.73 J	< 0.80	< 0.80
Cis-1,2-Dichloroethene	ug/l	70	< 0.80 J	< 0.80 J	< 0.80 J	1.0 J	180 J-	59	1.4	0.52 J
Methyl Tert-Butyl Ether (MTBE)	ug/l	20	< 0.80 J	< 0.80 J	< 0.80 J	< 0.80 J	0.78 J	0.46 J	< 0.80	< 0.80
Tetrachloroethene	ug/l	0.7	< 0.80 J	< 0.80 J	< 0.80 J	2.5 J	65	28	3.9	2.3
Total Xylenes	ug/l	500	< 0.80 J	< 0.80 J	< 0.80 J	< 0.80 J	< 0.80	4.9	< 0.80	< 0.80
Trans-1,2-Dichloroethene	ug/l	100	< 0.80 J	< 0.80 J	< 0.80 J	< 0.80 J	2.4	0.81 J	< 0.80	< 0.80
Trichloroethene	ug/l	3	< 0.80 J	1.8 J	1.9 J	21 J	180	110	4.8	3.0
Trichlorofluoromethane	ug/l	2,000	< 0.80 J	0.80 J	0.82 J	< 0.80 J	< 0.80	< 0.80	< 0.80	< 0.80
Vinyl Chloride	ug/l	0.03	< 0.80 J	< 0.80 J	< 0.80 J	< 0.80 J	5.9	0.41 J	< 0.80	< 0.80

Notes:
Feet msl = Feet above mean sea level
Feet bls = Feet below land surface
2L Standard = Subtitle 15A North Carolina Administrative Code 02L Groundwater Quality Standards.
Duplicate sample DUP-GW-01 collected from RI-GW-02.
Only constituents that were detected above the Laboratory Limit of Quantitation (LoQ) are shown.
ug/L = Microgram per liter.
Validation qualifiers included:
Non detects shown as < LoQ.
Bold = values detected at >LoQ.
J = Qualified as estimated.
J- = Qualified as estimated, with the estimated value biased low.
Shaded values (if present) exceeded the 2L Standard.

Table 10
Analytical Results of Water Samples from Tunnels
Tarheel Army Missile Plant
Burlington, North Carolina

					Sample Location	TUNNEL N-01	TUNNEL S-02
					Sample Date	7/21/2022	7/21/2022
					Latitude	NM	NM
					Longitude	NM	NM
Analyte	Unit	2B Standard	USEPA NRWQC	NC ISTV	NC 2L		
SW8260D							
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/l	NE	NE	710,000	200,000	1.1	< 0.84
Acetone	ug/l	NE	NE	3,100	6,000	< 10	< 10
Chloroform	ug/l	NE	60	NE	70	0.57 J	< 0.80
Cis-1,2-Dichloroethene	ug/l	NE	NE	60	70	18	5.6
Tetrachloroethene	ug/l	0.7	NE	NE	0.7	19	5.0
Trichloroethene	ug/l	2.5	NE	NE	3	120	33
Trichlorofluoromethane	ug/l	NE	NE	9,100	2,000	2.3	0.85 J
Vinyl Chloride	ug/l	0.025	NE	NE	0.03	< 0.80	< 0.80

Notes:
NM = Not measured.
2B Standard = Subtitle 15A North Carolina Administrative Code (NCAC) 02B Surface Water and Wetland Standards. Effective Date September 1, 2022.
2L Standard = Subtitle 15A NCAC 02L Groundwater Quality Standards.
Only constituents that were detected above the Laboratory Limit of Quantitation (LoQ) are shown.
ug/L = Microgram per liter.
NE = Standard not established.
Validation qualifiers included:
Non detects shown as < LoQ.
Bold = values detected at >LoQ.
Shaded values (if present) exceeded the referenced standard.

Table 11
Analytical Results of Groundwater Samples
from Monitoring Wells (August 2022)
Tarheel Army Missile Plant
Burlington, North Carolina

		Sample Location	MW-02	MW-05	MW-11	MW-101	MW-102	MW-103	MW-106	MW-107	DUP-GW-02	MW-108	MW-109
		Interval	Saprolite	Saprolite	Saprolite	Saprolite	Saprolite	Saprolite	Saprolite	Saprolite	N/A	Saprolite	Saprolite
		Sample Date	8/9/2022	8/9/2022	8/10/2022	8/9/2022	8/9/2022	8/10/2022	8/10/2022	8/10/2022	8/10/2022	8/10/2022	8/9/2022
		Latitude	36.099119554	36.096705065	36.098097935	36.098134192	36.098723192	36.098662063	36.098107366	36.098166282	36.098166282	36.098433198	36.09853277
		Longitude	-79.406738909	-79.406703026	-79.40748518	-79.408967912	-79.408625648	-79.407186782	-79.407952331	-79.407583685	-79.407583685	-79.407446257	-79.408066185
Analyte	Unit	2L Standard											
M5310C													
Total Organic Carbon	ug/l	NE	NA	NA	730 J	NA	< 1500	< 1500	NA	2300	NA	3100	4000
RSK 175													
Ethane	ug/l	NE	NA	NA	< 5.0	NA	< 5.0	< 5.0 UJ	NA	< 5.0	NA	8.9 J	< 5.0
Ethene	ug/l	NE	NA	NA	< 5.0	NA	< 5.0	< 5.0 UJ	NA	< 5.0	NA	140	5.6 J
Methane	ug/l	NE	NA	NA	56	NA	< 5.0	4.4 J	NA	8.2 J	NA	6100	760
SW6020													
Arsenic	ug/l	10	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
Barium	ug/l	700	26	33	42	98	15	47	54	36	36	110	170
Cadmium	ug/l	2	< 0.25	0.21 J	< 0.25	0.65	0.21 J	0.58	0.23 J	< 0.25	< 0.25	< 0.25	0.13 J
Chromium	ug/l	10	1.3 J	1.3 J	79	< 2.5	< 2.5	2.5 J	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
Lead	ug/l	15	< 0.50	< 0.50	0.53 J	1.1	0.66 J	< 0.50	< 0.50	0.61 J	0.57 J	< 0.50	0.64 J
Selenium	ug/l	20	< 2.5	< 2.5	< 2.5	2.2 J	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
SW8260D													
1,1,1-Trichloroethane	ug/l	200	4.3	< 0.80	< 0.80	< 0.80 UJ	< 0.80	1.4 J-	< 0.80	< 16	< 40	< 4.0	< 0.80
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/l	200,000	1.9	< 0.84	0.73 J	< 0.84 UJ	< 0.84	18 J-	< 0.84	60	83	< 4.2	< 0.84
1,1-Dichloroethane	ug/l	6	10	< 0.80	< 0.80	< 0.80 UJ	< 0.80	0.59 J-	< 0.80	9.9 J	< 40	8.1	0.63 J
1,1-Dichloroethene	ug/l	350	15	< 0.80	< 0.80	0.54 J-	< 0.80	3.4 J-	< 0.80	< 16	< 40	3.0 J	< 0.80
1,2-Dichloroethane	ug/l	0.4	1.6	< 0.80	< 0.80	< 0.80 UJ	< 0.80	< 0.80 UJ	< 0.80	< 16	< 40	< 4.0	< 0.80
Acetone	ug/l	6,000	8.6 J+	8.9 J+	5.1 J	< 10 UJ	5.5 J+	11 J-	< 10	< 200	< 500	< 50	11 J
Benzene	ug/l	1	< 0.80	< 0.80	< 0.80	< 0.80 UJ	< 0.80	< 0.80 UJ	0.97 J	< 16	< 40	4.4 J	0.78 J
Carbon Tetrachloride	ug/l	0.3	< 0.80	< 0.80	< 0.80	< 0.80 UJ	< 0.80	< 0.80 UJ	< 0.80	< 16	< 40	< 4.0	< 0.80
Chloroethane	ug/l	3,000	< 0.80	< 0.80	< 0.80	< 0.80 UJ	< 0.80	< 0.80 UJ	< 0.80	< 16	< 40	< 4.0	1.5 J
Chloroform	ug/l	70	1.5	< 0.80	0.96 J	< 0.80 UJ	< 0.80	3.1 J-	< 0.80	< 16	< 40	< 4.0	< 0.80
Chloromethane	ug/l	3	0.72 J	0.98 J	< 1.0	0.72 J-	< 1.0	< 1.0 UJ	< 1.0	< 20	< 50	< 5.0	< 1.0
Cis-1,2-Dichloroethene	ug/l	70	< 0.80	< 0.80	23	0.94 J-	1.0	0.78 J-	1.5	360	410	890	19
Cyclohexane	ug/l	NE	< 0.80	< 0.80	< 0.80	< 0.80 UJ	< 0.80	< 0.80 UJ	3.5	< 16	< 40	< 4.0	0.89 J
Ethylbenzene	ug/l	600	< 0.80	< 0.80	< 0.80	< 0.80 UJ	< 0.80	< 0.80 UJ	6.0	< 16	< 40	< 4.0	< 0.80
Isopropylbenzene	ug/l	70	< 0.80	< 0.80	< 0.80	< 0.80 UJ	< 0.80	< 0.80 UJ	0.90 J	< 16	< 40	< 4.0	< 0.80
Methyl Tert-Butyl Ether (MTBE)	ug/l	20	< 0.80	< 0.80	< 0.80	< 0.80 UJ	< 0.80	< 0.80 UJ	0.67 J	< 16	< 40	7.1	10
Methylcyclohexane	ug/l	NE	< 0.80	< 0.80	< 0.80	< 0.80 UJ	< 0.80	< 0.80 UJ	1.9 J	< 16	< 40	< 4.0	0.49 J
Tetrachloroethene	ug/l	0.7	< 0.80	< 0.80	11	7.3 J-	1.9	34 J-	< 0.80	160 J	260 J	< 4.0	< 0.80
Total Xylenes	ug/l	500	< 0.80	< 0.80	< 0.80	< 0.80 UJ	< 0.80	< 0.80 UJ	5.1	< 16	< 40	< 4.0	< 0.80
Trans-1,2-Dichloroethene	ug/l	100	< 0.80	< 0.80	0.41 J	< 0.80 UJ	< 0.80	< 0.80 UJ	< 0.80	< 16	< 40	51	1.8
Trichloroethene	ug/l	3	0.93 J	< 0.80	93	5.1 J-	4.0	120 J-	2.0	4600 J-	5100	67	< 0.80
Trichlorofluoromethane	ug/l	2,000	1.4	< 0.80	< 0.80	< 0.80 UJ	< 0.80	49 J-	< 0.80	< 16	< 40	< 4.0	< 0.80
Vinyl Chloride	ug/l	0.03	< 0.80	< 0.80	< 0.80	< 0.80 UJ	< 0.80	< 0.80 UJ	5.0	< 16	< 40	310	57
SW8270E													
2-Methylnaphthalene	ug/l	30	< 0.10	< 0.10	< 0.10	< 0.10 UJ	< 0.10	< 0.10	0.18 J	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	ug/l	80	< 0.10	< 0.10	< 0.10	< 0.10 UJ	< 0.10	< 0.10	0.070 J	< 0.10	< 0.10	0.15 J	< 0.10
Anthracene	ug/l	2,000	< 0.10	< 0.10	< 0.10	< 0.10 UJ	< 0.10	< 0.10	0.042 J	< 0.10	< 0.10	< 0.10	0.090 J
Bis(2-ethylhexyl) phthalate	ug/l	3	< 3.0	< 3.0	< 3.0	< 3.0 UJ	< 3.0	< 3.0	3.7 J	< 3.0	< 3.0	< 3.0	< 3.0
Caprolactam	ug/l	4,000	< 2.0	< 2.0	< 2.0	< 2.0 UJ	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Di-N-Butylphthalate	ug/l	700	< 1.0	0.65 J	0.75 J	< 1.0 UJ	< 1.0	0.75 J	< 1.0	0.53 J	0.81 J	0.79 J	< 1.0
Fluorene	ug/l	300	< 0.10	< 0.10	< 0.10	< 0.10 UJ	< 0.10	< 0.10	0.072 J	< 0.10	< 0.10	< 0.10	< 0.10
Naphthalene	ug/l	6	< 0.10	< 0.10	< 0.10	< 0.10 UJ	< 0.10	< 0.10	1.1	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	ug/l	200	< 0.10	< 0.10	< 0.10	< 0.10 UJ	< 0.10	< 0.10	0.042 J	< 0.10	< 0.10	< 0.10	< 0.10

Notes:
2L Standard = Subtitle 15A North Carolina Administrative Code 02L Groundwater Quality Standards.
Duplicate sample dup-gw-01 collected from Monitoring Well MW-120.
Duplicate sample dup-gw-02 collected from Monitoring Well MW-107
Only constituents that were detected above the Laboratory Limit of Quantitation (LoQ) are shown.
ug/L = Microgram per liter.
NE = 2L Standard not established.
NA = Not analyzed.
Validation qualifiers included:
Non detects shown as < LoQ.
Bold = values detected at >LoQ.
U = Qualified as nondetect at the LoQ.
J = Qualified as estimated.
J- = Qualified as estimated, with the estimated value biased low.
J+ = Qualified as estimated, with the estimated value biased high.
Shaded values (if present) exceeded the referenced standard.

Table 11
Analytical Results of Groundwater Samples
from Monitoring Wells (August 2022)
Tarheel Army Missile Plant
Burlington, North Carolina

		Sample Location	MW-110	MW-111	MW-112	MW-115	MW-116	MW-117	MW-118	MW-119	MW-120	DUP-GW-01	MW-121
		Interval	Bedrock	Bedrock	Bedrock	Saprolite	Saprolite	Saprolite	Saprolite	Saprolite	Bedrock	N/A	Bedrock
		Sample Date	8/9/2022	8/9/2022	8/9/2022	8/8/2022	8/10/2022	8/9/2022	8/8/2022	8/9/2022	8/10/2022	8/10/2022	8/9/2022
		Latitude	36.09887346	36.09863677	36.099019247	36.098608439	36.098382235	36.098241233	36.098933962	36.100663628	36.098058498	36.098058498	36.098861663
		Longitude	-79.408870119	-79.409004311	-79.409632451	-79.407616385	-79.407077054	-79.408173022	-79.407560883	-79.409359887	-79.407729455	-79.407729455	-79.408938849
Analyte	Unit	2L Standard											
M5310C													
Total Organic Carbon	ug/l	NE	< 1500	NA	670 J	2800	NA	NA	NA	NA	2000	2300	< 1500
RSK 175													
Ethane	ug/l	NE	< 5.0	NA	< 5.0	14	NA	NA	NA	NA	< 5.0	< 5.0	< 5.0
Ethene	ug/l	NE	< 5.0	NA	< 5.0	42	NA	NA	NA	NA	< 5.0	< 5.0	< 5.0
Methane	ug/l	NE	< 5.0	NA	3.0 J+	2400	NA	NA	NA	NA	19	18	4.1 J
SW6020													
Arsenic	ug/l	10	< 2.5	< 2.5	< 2.5	1.6 J	< 2.5	1.4 J	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
Barium	ug/l	700	12	5900	23	92	30	61	120	97	96	96	17
Cadmium	ug/l	2	0.24 J	< 0.25	< 0.25	< 0.25	0.60	0.15 J	4.7	< 0.25	< 0.25	< 0.25	< 0.25
Chromium	ug/l	10	2.2 J	13	2.9 J	< 2.5	3.2 J	< 2.5	< 2.5	1.5 J	1.6 J	1.4 J	1.3 J
Lead	ug/l	15	< 0.50	0.37 J	< 0.50	< 0.50	0.55 J	1.5	2.4	< 0.50	< 0.50	< 0.50	< 0.50
Selenium	ug/l	20	< 2.5	1.7 J	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
SW8260D													
1,1,1-Trichloroethane	ug/l	200	< 4.0	< 0.80	< 0.80	< 16	< 0.80	< 0.80	< 0.80	< 0.80	< 40	< 40	< 0.80
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/l	200,000	< 4.2	< 0.84	< 0.84	< 17	< 0.84	< 0.84	< 8.4	< 0.84	< 42	< 42	< 0.84
1,1-Dichloroethane	ug/l	6	< 4.0	< 0.80	< 0.80	< 16	< 0.80	< 0.80	2.7	< 0.80	< 40	< 40	< 0.80
1,1-Dichloroethene	ug/l	350	< 4.0	< 0.80	0.48 J	< 16	< 0.80	< 0.80	1.5	< 0.80	< 40	< 40	0.46 J
1,2-Dichloroethane	ug/l	0.4	< 4.0	< 0.80	< 0.80	< 16	< 0.80	< 0.80	1.2	< 0.80	< 40	< 40	< 0.80
Acetone	ug/l	6,000	< 50	5.9 J+	< 10	< 200	5.0 J+	< 10	< 10	< 10	< 500	< 500	< 10
Benzene	ug/l	1	< 4.0	< 0.80	< 0.80	< 16	< 0.80	< 0.80	1.4	< 0.80	250	260	< 0.80
Carbon Tetrachloride	ug/l	0.3	< 4.0	< 0.80	0.42 J	< 16	< 0.80	< 0.80	< 0.80	< 0.80	< 40	< 40	< 0.80
Chloroethane	ug/l	3,000	< 4.0	< 0.80	< 0.80	< 16	< 0.80	< 0.80	5.2	< 0.80	< 40	< 40	< 0.80
Chloroform	ug/l	70	< 4.0	0.65 J	0.60 J	< 16	0.77 J	< 0.80	< 0.80	< 0.80	< 40	< 40	0.64 J
Chloromethane	ug/l	3	< 5.0	< 1.0	0.53 J	< 20	0.65 J	< 1.0	< 1.0	< 1.0	< 50	< 50	0.58 J
Cis-1,2-Dichloroethene	ug/l	70	70	1.3	3.6	910	< 0.80	8.5	490	< 0.80	3600	3500	5.1
Cyclohexane	ug/l	NE	< 4.0	< 0.80	< 0.80	< 16	< 0.80	< 0.80	2.4	< 0.80	36 J	40 J	< 0.80
Ethylbenzene	ug/l	600	< 4.0	< 0.80	< 0.80	< 16	< 0.80	< 0.80	< 0.80	< 0.80	< 40	< 40	< 0.80
Isopropylbenzene	ug/l	70	< 4.0	< 0.80	< 0.80	< 16	< 0.80	< 0.80	< 0.80	< 0.80	< 40	< 40	< 0.80
Methyl Tert-Butyl Ether (MTBE)	ug/l	20	< 4.0	< 0.80	< 0.80	41	< 0.80	< 0.80	32	< 0.80	180	180	< 0.80
Methylcyclohexane	ug/l	NE	< 4.0	< 0.80	< 0.80	< 16	< 0.80	< 0.80	1.2 J	< 0.80	27 J	28 J	< 0.80
Tetrachloroethene	ug/l	0.7	67	7.2	10	< 16	< 0.80	1.6	< 0.80	< 0.80	8500	9000	17
Total Xylenes	ug/l	500	< 4.0	< 0.80	< 0.80	< 16	< 0.80	< 0.80	< 0.80	< 0.80	< 40	< 40	< 0.80
Trans-1,2-Dichloroethene	ug/l	100	< 4.0	< 0.80	< 0.80	24	< 0.80	< 0.80	17	< 0.80	25 J	26 J	< 0.80
Trichloroethene	ug/l	3	750	21	79	78	< 0.80	12	3.9	< 0.80	3700 J-	3800 J	38
Trichlorofluoromethane	ug/l	2,000	< 4.0	< 0.80	< 0.80	< 16	3.8	< 0.80	< 0.80	< 0.80	46 J	47 J	< 0.80
Vinyl Chloride	ug/l	0.03	< 4.0	< 0.80	< 0.80	150	< 0.80	3.5	100	< 0.80	34 J	32 J	< 0.80
SW8270E													
2-Methylnaphthalene	ug/l	30	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10 UJ	< 0.10	< 0.10	0.098 J	0.076 J	< 0.10
Acenaphthene	ug/l	80	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10 UJ	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	ug/l	2,000	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10 UJ	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Bis(2-ethylhexyl) phthalate	ug/l	3	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0 UJ	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Caprolactam	ug/l	4,000	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0 UJ	< 2.0	< 2.0	1.5 J	< 2.0	< 2.0
Di-N-Butylphthalate	ug/l	700	< 1.0	< 1.0	0.91 J	0.56 J	< 1.0	< 1.0 UJ	< 1.0	< 1.0	0.65 J	0.79 J	< 1.0
Fluorene	ug/l	300	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10 UJ	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Naphthalene	ug/l	6	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10 UJ	< 0.10	< 0.10	20	16	< 0.10
Phenanthrene	ug/l	200	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10 UJ	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Notes:
2L Standard = Subtitle 15A North Carolina Administrative Code 02L Groundwater Quality Standards.
Duplicate sample dup-gw-01 collected from Monitoring Well MW-120.
Duplicate sample dup-gw-02 collected from Monitoring Well MW-107
Only constituents that were detected above the Laboratory Limit of Quantitation (LoQ) are shown.
ug/L = Microgram per liter.
NE = 2L Standard not established.
NA = Not analyzed.
Validation qualifiers included:
Non detects shown as < LoQ.
Bold = values detected at >LoQ.
U = Qualified as nondetect at the LoQ.
J = Qualified as estimated.
J- = Qualified as estimated, with the estimated value biased low.
J+ = Qualified as estimated, with the estimated value biased high.
Shaded values (if present) exceeded the referenced standard.

Table 11
Analytical Results of Groundwater Samples
from Monitoring Wells (August 2022)
Tarheel Army Missile Plant
Burlington, North Carolina

		Sample Location	MW-122	MW-124	MW-127	MW-130	MW-131	MW-132	MW-133	MW-136	MW-137	MW-138	MW-139
		Interval	Bedrock	Bedrock	Saprolite	Saprolite	Saprolite	Saprolite	Bedrock	Bedrock	Saprolite	Saprolite	Bedrock
		Sample Date	8/9/2022	8/10/2022	8/9/2022	8/9/2022	8/9/2022	8/10/2022	8/9/2022	8/10/2022	8/9/2022	8/9/2022	8/10/2022
		Latitude	36.098442942	36.099622	36.099854399	36.099742	36.099599117	36.09895453	36.099872492	36.09816389	36.100114	36.099447	36.098219
		Longitude	-79.411752241	-79.410811	-79.411027947	-79.40825	-79.407233982	-79.409585976	-79.411030662	-79.407628957	-79.40765	-79.411194	-79.410686
Analyte	Unit	2L Standard											
M5310C													
Total Organic Carbon	ug/l	NE	NA	NA	NA	NA	NA	2500	NA	NA	NA	NA	660 J
RSK 175													
Ethane	ug/l	NE	NA	NA	NA	NA	NA	< 5.0	NA	NA	NA	NA	< 5.0
Ethene	ug/l	NE	NA	NA	NA	NA	NA	< 5.0	NA	NA	NA	NA	< 5.0
Methane	ug/l	NE	NA	NA	NA	NA	NA	46	NA	NA	NA	NA	4.5 J+
SW6020													
Arsenic	ug/l	10	NA	NA	NA	< 2.5	< 2.5	< 2.5	NA	NA	< 2.5	NA	< 2.5
Barium	ug/l	700	NA	NA	NA	27	52	29	NA	NA	34	NA	33
Cadmium	ug/l	2	NA	NA	NA	< 0.25	< 0.25	0.25 J	NA	NA	< 0.25	NA	< 0.25
Chromium	ug/l	10	NA	NA	NA	< 2.5	2.2 J	4.0 J	NA	NA	< 2.5	NA	5.6
Lead	ug/l	15	NA	NA	NA	< 0.50	< 0.50	4.0	NA	NA	< 0.50	NA	< 0.50
Selenium	ug/l	20	NA	NA	NA	< 2.5	< 2.5	< 2.5	NA	NA	< 2.5	NA	53
SW8260D													
1,1,1-Trichloroethane	ug/l	200	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 8.0	< 0.80	< 0.80	< 4.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/l	200,000	< 0.84	2.2	< 0.84	< 0.84	0.90 J	< 0.84	< 0.84	< 8.4	3.9	< 0.84	4.6 J
1,1-Dichloroethane	ug/l	6	< 0.80	1.1	< 0.80	0.43 J	8.3	< 0.80	< 0.80	10	7.1	< 0.80	3.1 J
1,1-Dichloroethene	ug/l	350	< 0.80	2.9	< 0.80	5.3	13	< 0.80	< 0.80	< 8.0	14	< 0.80	< 4.0
1,2-Dichloroethane	ug/l	0.4	< 0.80	0.76 J	< 0.80	0.46 J	1.6	< 0.80	< 0.80	< 8.0	4.2	< 0.80	< 4.0
Acetone	ug/l	6,000	< 10	5.0 J+	10 J+	7.1 J+	17 J+	8.5 J+	< 10	65 J	5.2 J+	7.7 J+	< 50
Benzene	ug/l	1	< 0.80	0.57 J	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	6.6 J	< 0.80	< 0.80	< 4.0
Carbon Tetrachloride	ug/l	0.3	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 8.0	< 0.80	< 0.80	< 4.0
Chloroethane	ug/l	3,000	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 8.0	< 0.80	< 0.80	< 4.0
Chloroform	ug/l	70	< 0.80	< 0.80	< 0.80	4.0	0.61 J	< 0.80	< 0.80	< 8.0	0.89 J	1.6	< 4.0
Chloromethane	ug/l	3	0.80 J	< 1.0	0.79 J	< 1.0	0.55 J	< 1.0	< 1.0	< 10	< 1.0	< 1.0	< 5.0
Cis-1,2-Dichloroethene	ug/l	70	5.7	2.9	1.4	4.7	2.7	1.1	3.7	150	< 0.80	< 0.80	87
Cyclohexane	ug/l	NE	< 0.80	0.51 J	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 8.0	< 0.80	< 0.80	< 4.0
Ethylbenzene	ug/l	600	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 8.0	< 0.80	< 0.80	< 4.0
Isopropylbenzene	ug/l	70	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 8.0	< 0.80	< 0.80	< 4.0
Methyl Tert-Butyl Ether (MTBE)	ug/l	20	0.48 J	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	25	< 0.80	< 0.80	< 4.0
Methylcyclohexane	ug/l	NE	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 8.0	< 0.80	< 0.80	< 4.0
Tetrachloroethene	ug/l	0.7	< 0.80	1.4	< 0.80	17	1.7	2.0	< 0.80	240	< 0.80	< 0.80	77
Total Xylenes	ug/l	500	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 8.0	< 0.80	< 0.80	< 4.0
Trans-1,2-Dichloroethene	ug/l	100	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 8.0	< 0.80	< 0.80	< 4.0
Trichloroethene	ug/l	3	100	140	0.59 J+	35	10	15 J-	2.3 J-	1700	1.8	5.2 J-	260
Trichlorofluoromethane	ug/l	2,000	< 0.80	< 0.80	< 0.80	1.4	0.78 J	< 0.80	< 0.80	< 8.0	< 0.80	< 0.80	< 4.0
Vinyl Chloride	ug/l	0.03	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 8.0	< 0.80	< 0.80	< 4.0
SW8270E													
2-Methylnaphthalene	ug/l	30	NA	NA	NA	< 0.10	< 0.10	< 0.10	NA	NA	0.13 J	NA	< 0.10
Acenaphthene	ug/l	80	NA	NA	NA	< 0.10	< 0.10	< 0.10	NA	NA	< 0.10	NA	< 0.10
Anthracene	ug/l	2,000	NA	NA	NA	< 0.10	< 0.10	0.074 J	NA	NA	< 0.10	NA	< 0.10
Bis(2-ethylhexyl) phthalate	ug/l	3	NA	NA	NA	< 3.0	< 3.0	< 3.0	NA	NA	< 3.0	NA	< 3.0
Caprolactam	ug/l	4,000	NA	NA	NA	< 2.0	< 2.0	< 2.0	NA	NA	< 2.0	NA	< 2.0
Di-N-Butylphthalate	ug/l	700	NA	NA	NA	0.57 J	0.59 J	< 1.0	NA	NA	0.66 J	NA	0.56 J
Fluorene	ug/l	300	NA	NA	NA	< 0.10	< 0.10	< 0.10	NA	NA	< 0.10	NA	< 0.10
Naphthalene	ug/l	6	NA	NA	NA	< 0.10	< 0.10	< 0.10	NA	NA	0.41	NA	< 0.10
Phenanthrene	ug/l	200	NA	NA	NA	< 0.10	< 0.10	< 0.10	NA	NA	< 0.10	NA	< 0.10

Notes:
2L Standard = Subtitle 15A North Carolina Administrative Code 02L Groundwater Quality Standards.
Duplicate sample dup-gw-01 collected from Monitoring Well MW-120.
Duplicate sample dup-gw-02 collected from Monitoring Well MW-107
Only constituents that were detected above the Laboratory Limit of Quantitation (LoQ) are shown.
ug/L = Microgram per liter.
NE = 2L Standard not established.
NA = Not analyzed.
Validation qualifiers included:
Non detects shown as < LoQ.
Bold = values detected at >LoQ.
U = Qualified as nondetect at the LoQ.
J = Qualified as estimated.
J- = Qualified as estimated, with the estimated value biased low.
J+ = Qualified as estimated, with the estimated value biased high.
Shaded values (if present) exceeded the referenced standard.

Table 11
Analytical Results of Groundwater Samples
from Monitoring Wells (August 2022)
Tarheel Army Missile Plant
Burlington, North Carolina

		Sample Location	MW-140	MW-141	TAMP-MW-03	TAMP-MW-08
		Interval	Bedrock	Bedrock	Saprolite	Saprolite
		Sample Date	8/9/2022	8/10/2022	7/21/2022	8/9/2022
		Latitude	36.099706	36.099467	36.09841228	36.099675
		Longitude	-79.409158	-79.410147	-79.41123377	-79.409125
Analyte	Unit	2L Standard				
M5310C						
Total Organic Carbon	ug/l	NE	NA	770 J	NA	NA
RSK 175						
Ethane	ug/l	NE	NA	< 5.0	NA	NA
Ethene	ug/l	NE	NA	< 5.0	NA	NA
Methane	ug/l	NE	NA	19	NA	NA
SW6020						
Arsenic	ug/l	10	1.4 J	< 2.5	< 2.5	< 2.5
Barium	ug/l	700	52	33	51	170
Cadmium	ug/l	2	< 0.25	< 0.25	1.3	< 0.25
Chromium	ug/l	10	4.3 J	< 2.5	< 2.5	1.9 J
Lead	ug/l	15	0.76 J	< 0.50	1.1	< 0.50
Selenium	ug/l	20	2.8 J	< 2.5	< 2.5	< 2.5
SW8260D						
1,1,1-Trichloroethane	ug/l	200	< 0.80	< 0.80	< 0.80	< 0.80
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/l	200,000	< 0.84	0.86 J	< 0.84	< 0.84
1,1-Dichloroethane	ug/l	6	< 0.80	1.3	< 0.80	< 0.80
1,1-Dichloroethene	ug/l	350	0.56 J	3.5	< 0.80	< 0.80
1,2-Dichloroethane	ug/l	0.4	< 0.80	0.66 J	< 0.80	< 0.80
Acetone	ug/l	6,000	11 J+	< 10	< 10	< 10
Benzene	ug/l	1	< 0.80	< 0.80	< 0.80	< 0.80
Carbon Tetrachloride	ug/l	0.3	< 0.80	< 0.80	< 0.80	< 0.80
Chloroethane	ug/l	3,000	< 0.80	< 0.80	< 0.80	< 0.80
Chloroform	ug/l	70	< 0.80	< 0.80	< 0.80	< 0.80
Chloromethane	ug/l	3	0.70 J	< 1.0	1.4 J	< 1.0
Cis-1,2-Dichloroethene	ug/l	70	2.1	3.1	1.0	< 0.80
Cyclohexane	ug/l	NE	< 0.80	< 0.80	< 0.80	< 0.80
Ethylbenzene	ug/l	600	< 0.80	< 0.80	< 0.80	< 0.80
Isopropylbenzene	ug/l	70	< 0.80	< 0.80	< 0.80	< 0.80
Methyl Tert-Butyl Ether (MTBE)	ug/l	20	< 0.80	0.84 J	< 0.80	< 0.80
Methylcyclohexane	ug/l	NE	< 0.80	< 0.80	< 0.80	< 0.80
Tetrachloroethene	ug/l	0.7	2.3	4.7	< 0.80	0.43 J
Total Xylenes	ug/l	500	< 0.80	< 0.80	< 0.80	< 0.80
Trans-1,2-Dichloroethene	ug/l	100	< 0.80	< 0.80	< 0.80	< 0.80
Trichloroethene	ug/l	3	25	88	1.9	1.2
Trichlorofluoromethane	ug/l	2,000	< 0.80	< 0.80	< 0.80	< 0.80
Vinyl Chloride	ug/l	0.03	< 0.80	< 0.80	< 0.80	< 0.80
SW8270E						
2-Methylnaphthalene	ug/l	30	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	ug/l	80	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	ug/l	2,000	< 0.10	< 0.10	< 0.10	< 0.10
Bis(2-ethylhexyl) phthalate	ug/l	3	< 3.0	< 3.0	< 3.0	< 3.0
Caprolactam	ug/l	4,000	1.2 J	< 2.0	< 2.0	< 2.0
Di-N-Butylphthalate	ug/l	700	0.69 J	0.60 J	0.63 J+	0.50 J
Fluorene	ug/l	300	< 0.10	< 0.10	< 0.10	< 0.10
Naphthalene	ug/l	6	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	ug/l	200	< 0.10	< 0.10	< 0.10	< 0.10

Notes:
2L Standard = Subtitle 15A North Carolina Administrative Code 02L Groundwater Quality Standards.
Duplicate sample dup-gw-01 collected from Monitoring Well MW-120.
Duplicate sample dup-gw-02 collected from Monitoring Well MW-107
Only constituents that were detected above the Laboratory Limit of Quantitation (LoQ) are shown.
ug/L = Microgram per liter.
NE = 2L Standard not established.
NA = Not analyzed.
Validation qualifiers included:
Non detects shown as < LoQ.
Bold = values detected at >LoQ.
U = Qualified as nondetect at the LoQ.
J = Qualified as estimated.
J- = Qualified as estimated, with the estimated value biased low.
J+ = Qualified as estimated, with the estimated value biased high.
Shaded values (if present) exceeded the referenced standard.

Table 12
Analytical Results of Soil Gas Samples
Tarheel Army Missile Plant
Burlington, North Carolina

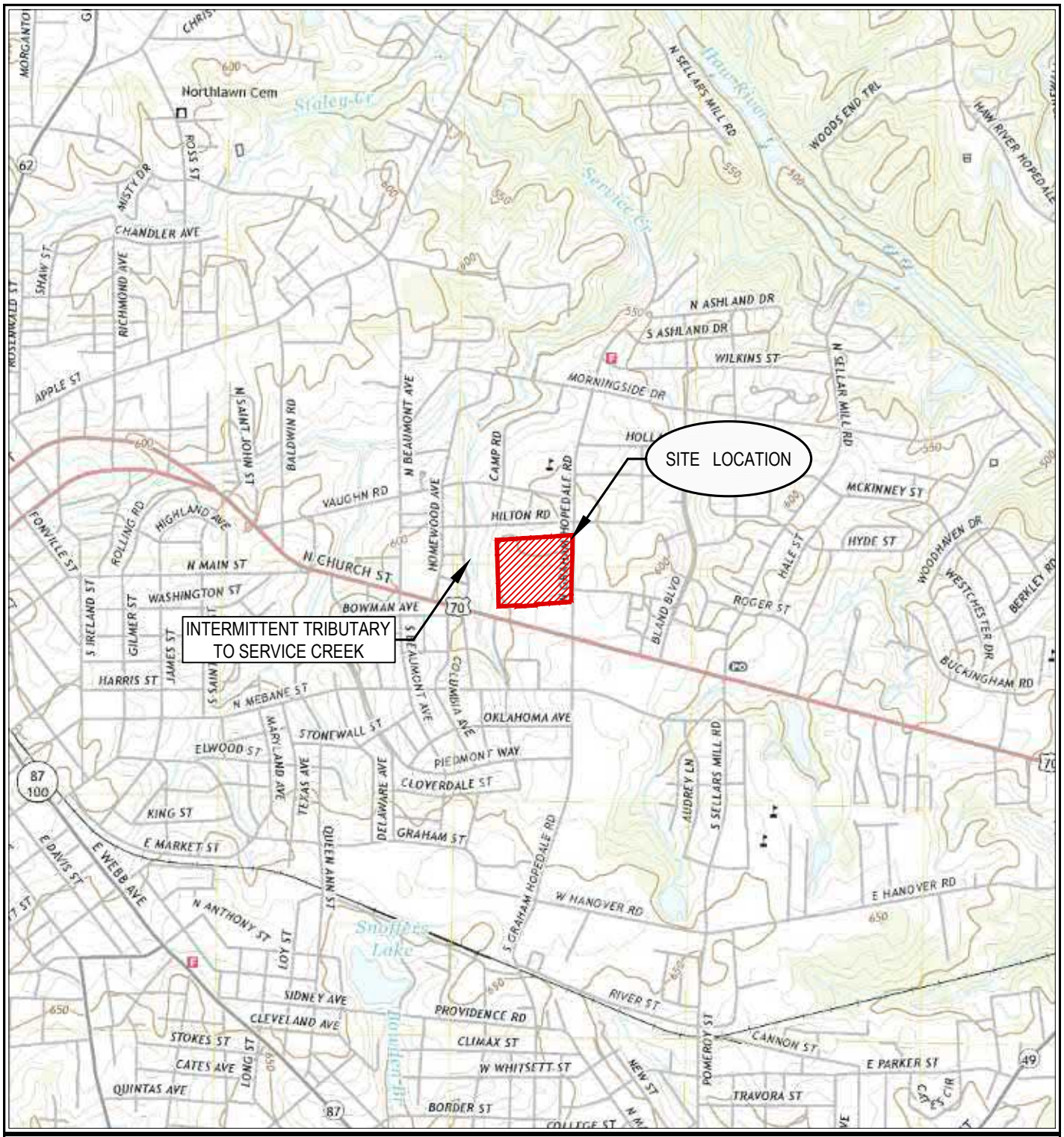
			Sample Location	PSG-01	PSG-02	PSG-03	PSG-04	PSG-05
			Sample Date	7/25/2022	7/25/2022	7/27/2022	7/28/2022	7/25/2022
			Latitude	36.099675191	36.099545707	36.099364614	36.099674936	36.099331825
			Longitude	-79.410188212	-79.410775999	-79.40880244	-79.410829221	-79.409843698
Analyte	Unit	Industrial VISL	Residential VISL					
Toluene	ug/m3	438,000	34,762	15.8 J	< 7.11	< 7.28	< 7.27	< 7.31
TPH C10-C15	ug/m3	N/A	N/A	< 824	< 824	< 845	< 843	2,320

Notes:
Only constituents that were detected above the Laboratory Limit of Quantitation (LoQ) are shown.
TPH C10-C15 = Total Petroleum Hydrocarbons Containing 10 to 15 Carbon Atoms.
VISL = Vapor Intrusion Screening Level developed by the North Carolina Department of Environmental Quality (https://deq.nc.gov/permits-rules/risk-based-remediation/risk-evaluation-resources).
Validation qualifiers included:
Bold = detected.
Non detects shown as < LoQ.
J = Qualified as estimated.
Shaded values (if present) exceeded the referenced standards.

Table 13
Potential Future Activities for the TAMP Site
Tarheel Army Missile Plant
Burlington, North Carolina

Tasks	What Can be Gained?	Target Date
Develop Feasibility Study and Cost Estimate for Remedial Strategies for Source Area (Alternatives #1 and/or #2)	Screen and select the remedy to remove the primary source area north of Building 2, contributing to the sources of COPCs in the groundwater phase.	December 2023 (Completion Target)
Develop Feasibility Study and Cost Estimate for Remedial Strategies for Site-Wide Groundwater Treatment (Alternative #3, or other Strategies)	Screen and select the remedy to begin treating groundwater impacts across the site .	December 2023 (Completion Target)
Excavation and Removal of USTs in the Grassy Area East of the Site	Eliminate potential sources of petroleum hydrocarbons that could be released to soil and groundwater.	December 2023 (Completion Target)
Begin Implementation of Remedial Strategies for Source Area (Alternatives #1 and/or #2)	Begin treatment of soil impacts in source zone as quickly as possible.	July 2023 (Completion Target)
Assess the potential Vapor Intrusion Concerns at the Former Lucent Technologies facility, dependent on whether these impacts are the result of the U.S. Government's activities or due to environmental issues caused by Lucent Technologies.	Determine whether there are vapor intrusion concerns at the facility (if due to the U.S. Government's activities)	TBD
Begin Implementation of Remedial Strategies for Groundwater (Alternatives #3, or other Strategies)	Begin treatment of site-wide groundwater impacts as soon as feasible.	TBD
Investigation remaining data gap, including potential off-site sources to the west of TAMP.	Determine whether off-site sources exist to the west of the TAMP facility	TBD
Other Activities to be determined with additional input from the Government.	TBD	TBD

Figures



QUADRANGLE LOCATION

Scale 1:24000

0 1/2 1 MILE

1000 0 1000 2000 3000 FEET

(SOURCE OF MAP IS USGS 7.5 MINUTE QUADRANGLE MAP, BURLINGTON (2019), NORTH CAROLINA)

CHECK BY	DRM
DRAWN BY	OS
DATE	11-22-22
SCALE	AS SHOWN
CAD NO.	7021P145A
PRJ NO.	701P145

SITE LOCATION MAP

REMEDIAL INVESTIGATION
TARHEEL ARMY MISSILE PLANT
204 N. GRAHAM-HOPEDALE ROAD
BURLINGTON, ALMANCE COUNTY, NORTH CAROLINA

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FIGURE

1

SOURCE OF FORMER SOURCE AREAS:

ROY F. WESTON, INC., 1993, COMPREHENSIVE SITE ASSESSMENT SUBSURFACE SOIL AND GROUNDWATER INVESTIGATION AT THE WASTE ACCUMULATION PAD AND UNDERGROUND STORAGE TANK AREAS, TARHEEL ARMY MISSILE PLANT, BURLINGTON, NORTH CAROLINA, AUGUST 26.

PIKA–ARCADIS U.S., INC., 2020. DRAFT REMEDIAL INVESTIGATION REPORT, REVISION 0. TARHEEL ARMY MISSILE PLANT, BURLINGTON, NORTH CAROLINA. CONTRACT NO. W91ZLK–13–D–0009, TASK ORDER 0012. APRIL.

SCALE IN FEET

0 75 150 300

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DATE:	12–16–22
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CAD NO.:	7021P145B
PRJ NO.:	7021P145

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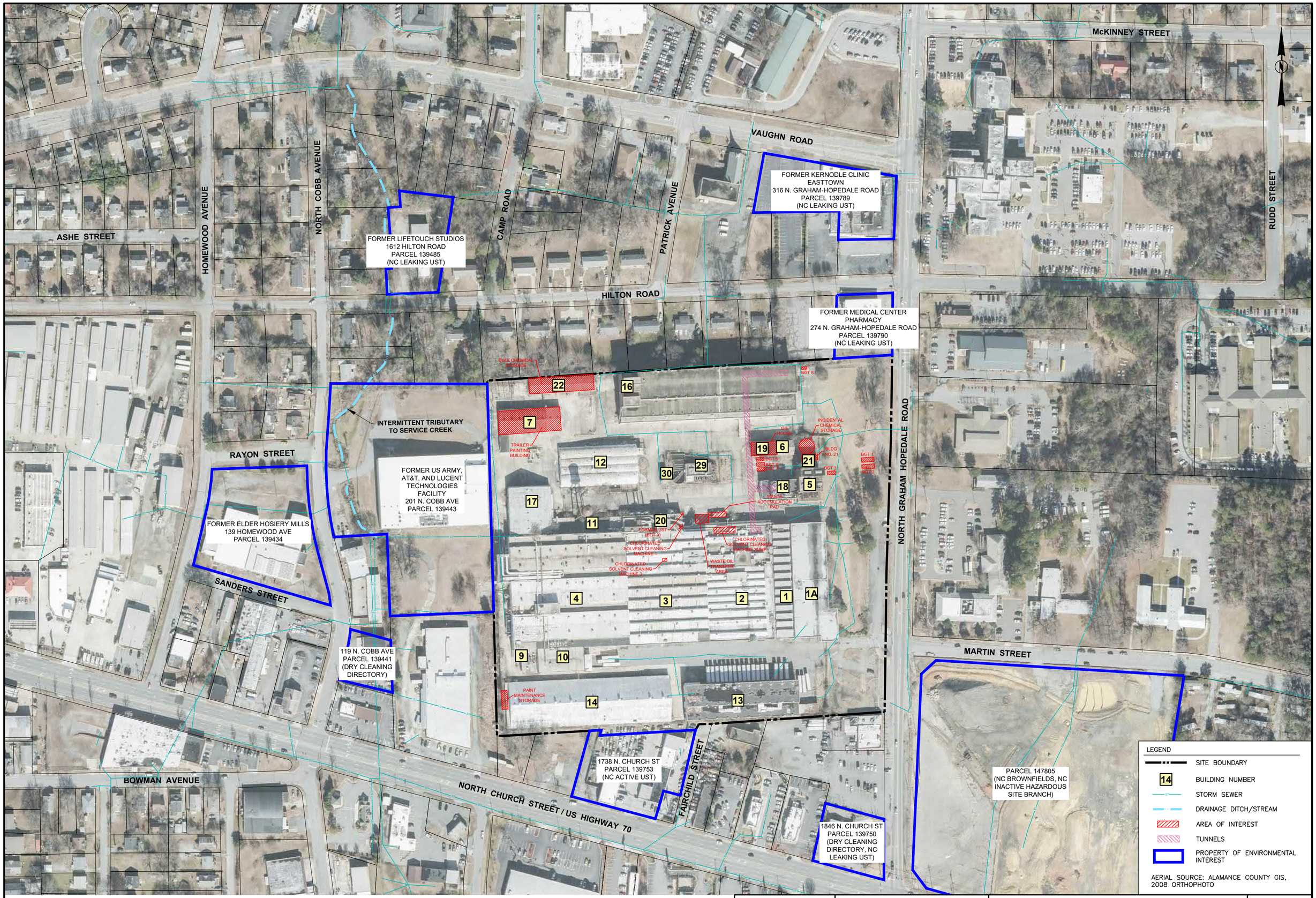
SITE LAYOUT MAP WITH GEOLOGIC CROSS–SECTION LOCATIONS

REMEDIAL INVESTIGATION
TARHEEL ARMY MISSILE PLANT
204 N. GRAHAM–HOPEDALE ROAD
BURLINGTON, ALAMANCE COUNTY, NORTH CAROLINA

FIGURE 2



SOURCE OF FORMER SOURCE AREAS:

ROY F. WESTON, INC., 1993, COMPREHENSIVE SITE ASSESSMENT SUBSURFACE SOIL AND GROUNDWATER INVESTIGATION AT THE WASTE ACCUMULATION PAD AND UNDERGROUND STORAGE TANK AREAS, TARHEEL ARMY MISSILE PLANT, BURLINGTON, NORTH CAROLINA, AUGUST 26.

PIKA–ARCADIS U.S., INC., 2020. DRAFT REMEDIAL INVESTIGATION REPORT, REVISION 0. TARHEEL ARMY MISSILE PLANT, BURLINGTON, NORTH CAROLINA. CONTRACT NO. W91ZLK–13–D–0009, TASK ORDER 0012. APRIL.

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PRJ NO.:	7021P145

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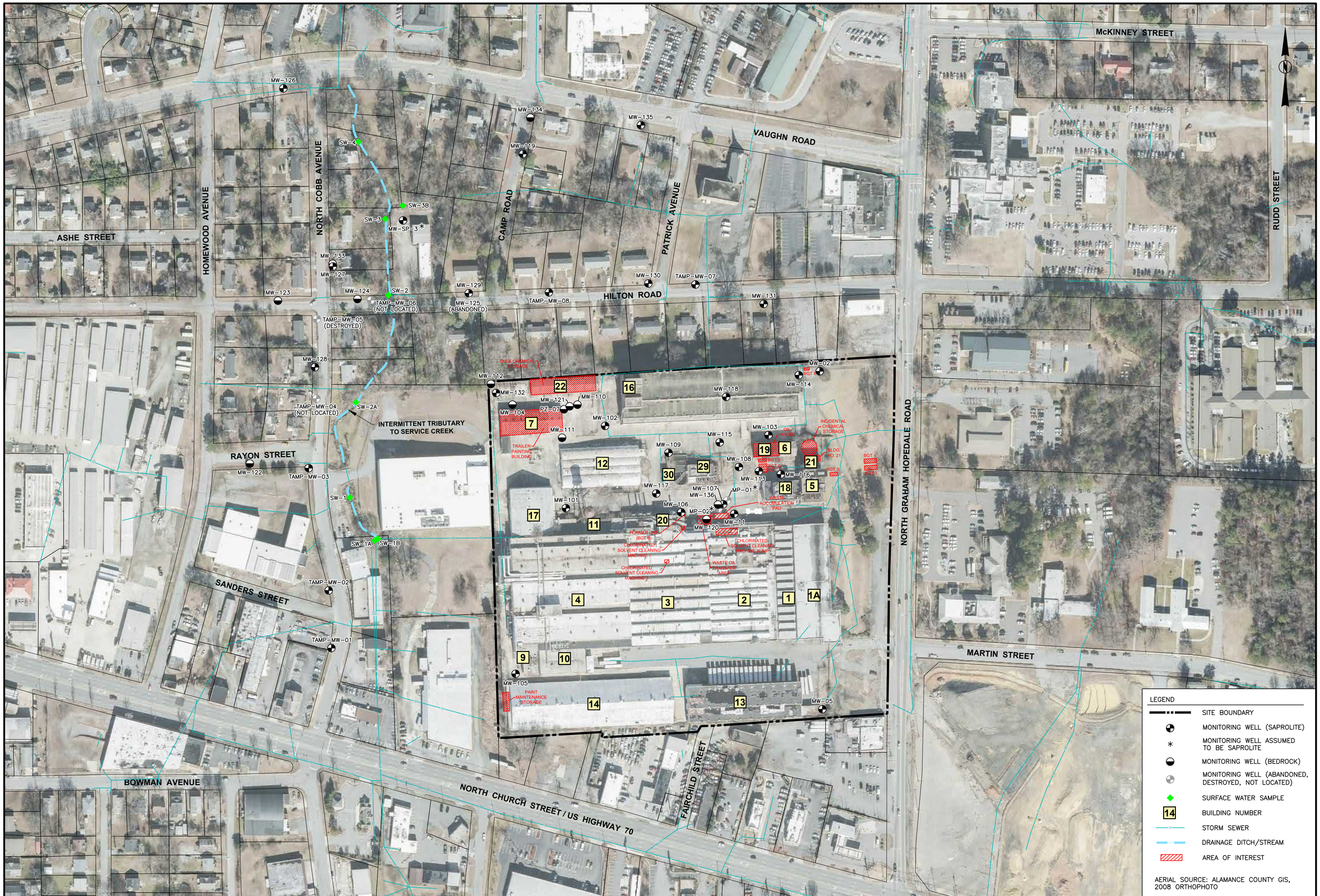
SITE VICINITY MAP INCLUDING ADJACENT PROPERTIES

REMEDIAL INVESTIGATION
TARHEEL ARMY MISSILE PLANT
204 N. GRAHAM–HOPEDALE ROAD
BURLINGTON, ALAMANCE COUNTY, NORTH CAROLINA

FIGURE
3



SOURCE OF FORMER SOURCE AREAS:

ROY F. WESTON, INC., 1993, COMPREHENSIVE SITE ASSESSMENT SUBSURFACE SOIL AND GROUNDWATER INVESTIGATION AT THE WASTE ACCUMULATION PAD AND UNDERGROUND STORAGE TANK AREAS, TARHEEL ARMY MISSILE PLANT, BURLINGTON, NORTH CAROLINA, AUGUST 26.

PIKA-ARCADIS U.S., INC., 2020. DRAFT REMEDIAL INVESTIGATION REPORT, REVISION 0. TARHEEL ARMY MISSILE PLANT, BURLINGTON, NORTH CAROLINA. CONTRACT NO. W91ZLK-13-D-0009, TASK ORDER 0012. APRIL.

SCALE IN FEET

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DATE:	11-23-22
SCALE:	AS SHOWN
CAD NO.:	7021P145D
PRJ NO.:	7021P145

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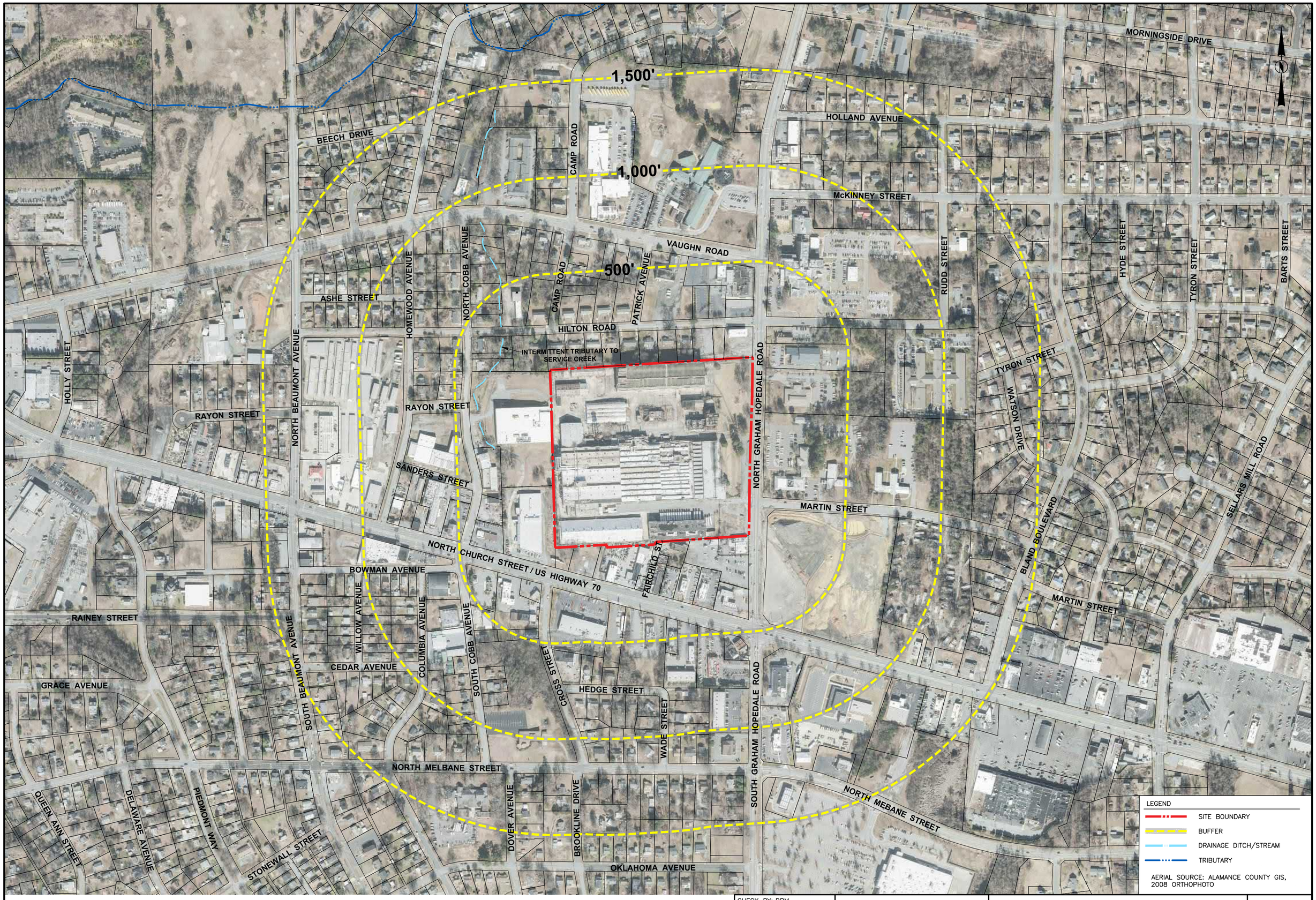
SITE MAP WITH HISTORICAL WELL LOCATIONS

REMEDIAL INVESTIGATION
TARHEEL ARMY MISSILE PLANT
204 N. GRAHAM-HOPEDALE ROAD
BURLINGTON, ALAMANCE COUNTY, NORTH CAROLINA

FIGURE

4



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PRJ NO.:	7021P145

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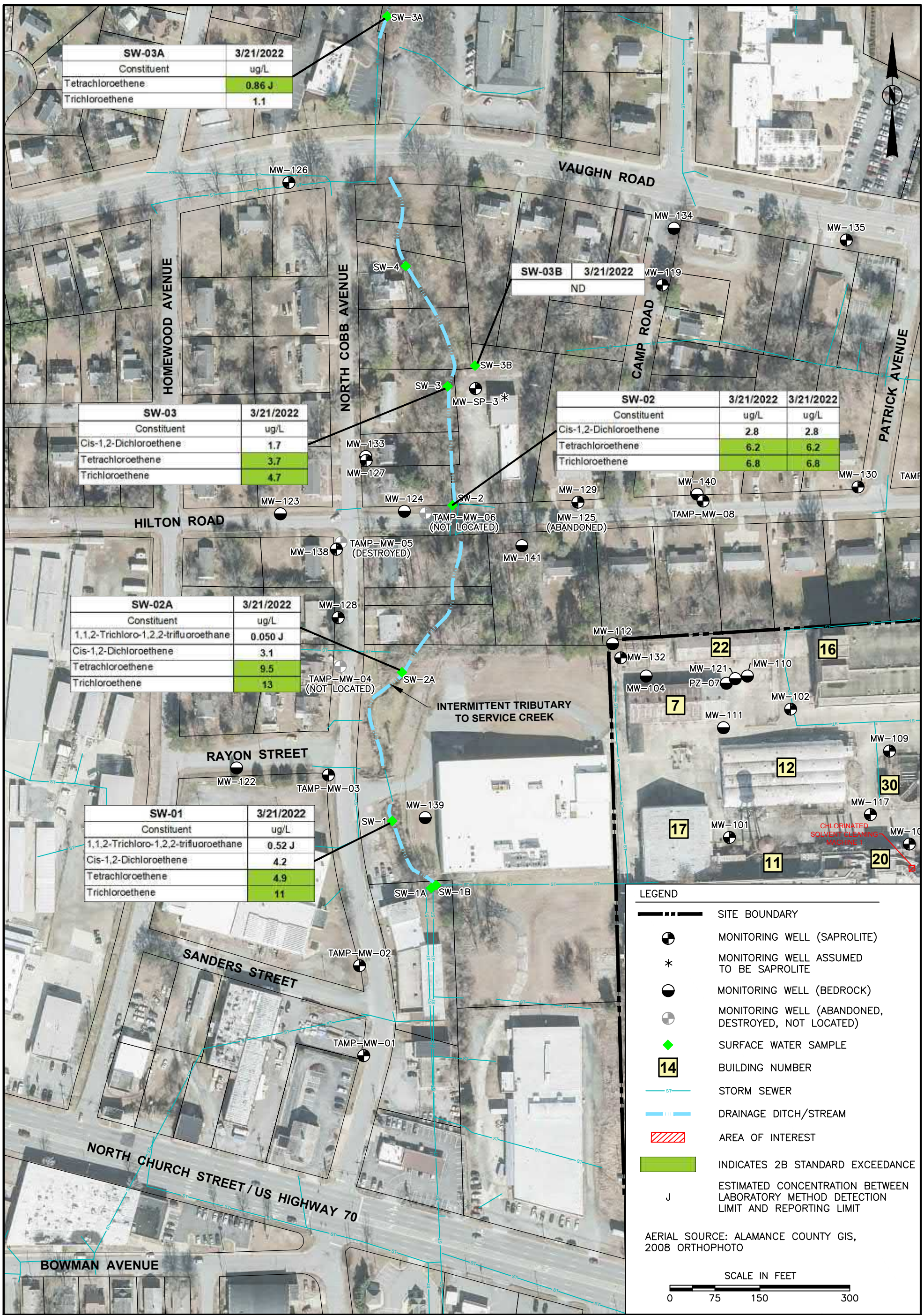
RECEPTOR SURVEY MAP

REMEDIAL INVESTIGATION
TARHEEL ARMY MISSILE PLANT
204 N. GRAHAM-HOPEDALE ROAD
BURLINGTON, ALAMANCE COUNTY, NORTH CAROLINA

FIGURE

5



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DATE	11-22-2022
SCALE	AS SHOWN
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PRJ NO.	7021P145

SURFACE WATER SAMPLE RESULTS
MARCH 21, 2022
REMEDIAL INVESTIGATION
TARHEEL ARMY MISSILE PLANT
204 N. GRAHAM-HOPEDALE ROAD
BURLINGTON, ALAMANCE COUNTY, NORTH CAROLINA

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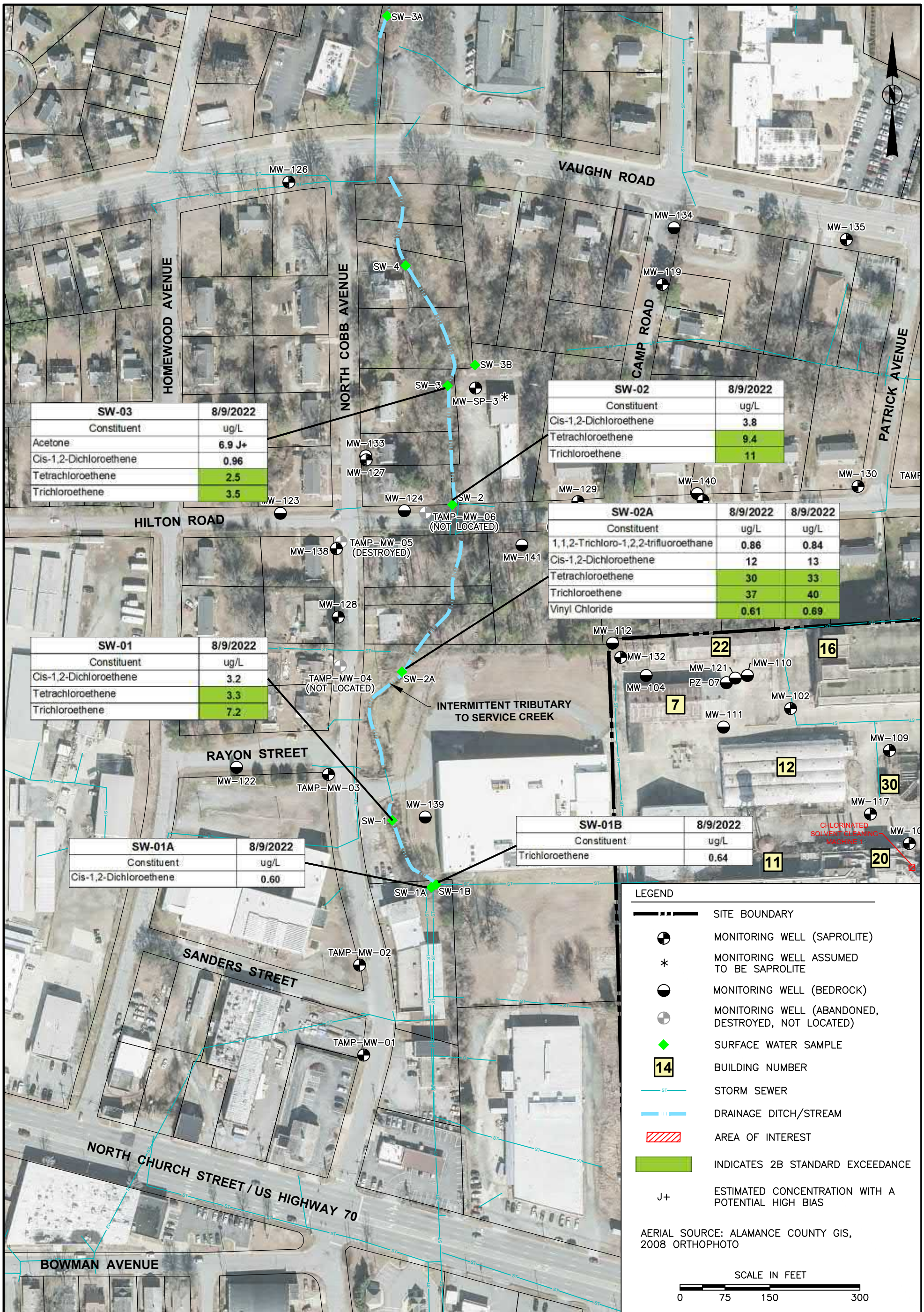
FIGURE
6



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SCALE	AS SHOWN
CAD NO.	7021P145F
PRJ NO.	7021P145

SURFACE WATER SAMPLE RESULTS
AUGUST 9, 2022
REMEDIAL INVESTIGATION
TARHEEL ARMY MISSILE PLANT
204 N. GRAHAM-HOPEDALE ROAD
BURLINGTON, ALAMANCE COUNTY, NORTH CAROLINA

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2401 BRENTWOOD ROAD, SUITE 107 RALEIGH, NC 27604
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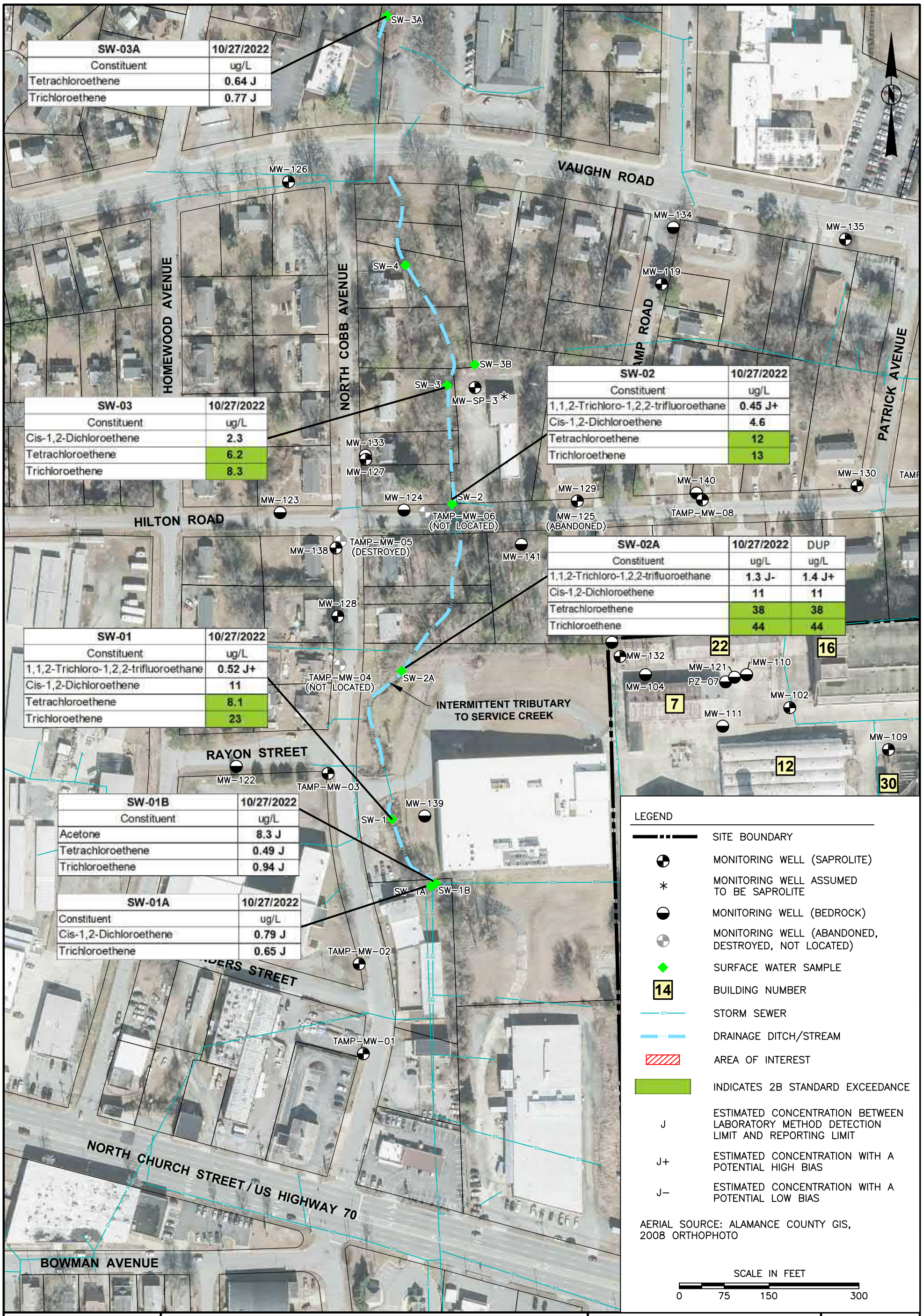
FIGURE
7



SW-03A	10/27/2022
Constituent	ug/L
Tetrachloroethene	0.64 J
Trichloroethene	0.77 J

SW-03	10/27/2022
Constituent	ug/L
Cis-1,2-Dichloroethene	2.3
Tetrachloroethene	6.2
Trichloroethene	8.3

SW-02	10/27/2022
Constituent	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	0.45 J+
Cis-1,2-Dichloroethene	4.6
Tetrachloroethene	12
Trichloroethene	13

SW-02A	10/27/2022	DUP
Constituent	ug/L	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	1.3 J-	1.4 J+
Cis-1,2-Dichloroethene	11	11
Tetrachloroethene	38	38
Trichloroethene	44	44

SW-01	10/27/2022
Constituent	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	0.52 J+
Cis-1,2-Dichloroethene	11
Tetrachloroethene	8.1
Trichloroethene	23

SW-01B	10/27/2022
Constituent	ug/L
Acetone	8.3 J
Tetrachloroethene	0.49 J
Trichloroethene	0.94 J

SW-01A	10/27/2022
Constituent	ug/L
Cis-1,2-Dichloroethene	0.79 J
Trichloroethene	0.65 J

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DATE	12-9-2022
SCALE	AS SHOWN
CAD NO.	7021P145F
PRJ NO.	7021P145

SURFACE WATER SAMPLE RESULTS
OCTOBER 27, 2022
REMEDIAL INVESTIGATION
TARHEEL ARMY MISSILE PLANT
204 N. GRAHAM-HOPEDALE ROAD
BURLINGTON, ALAMANCE COUNTY, NORTH CAROLINA

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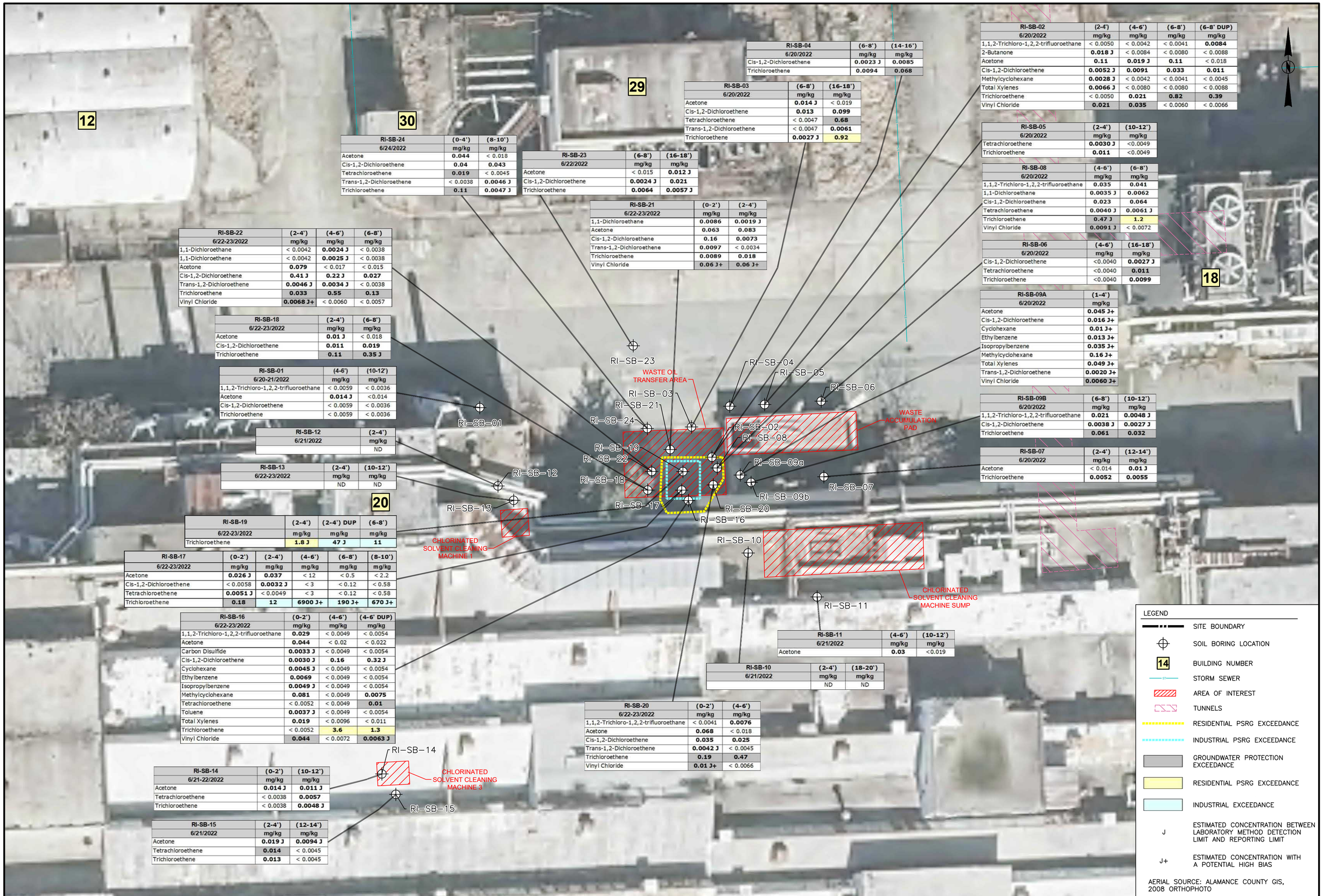
FIGURE
8



RI-SB-24	(0-4')	(8-10')
6/24/2022	mg/kg	mg/kg
Acetone	**0.044**	< 0.018
Cis-1,2-Dichloroethene	**0.04**	**0.043**
Tetrachloroethene	**0.019**	< 0.0045
Trans-1,2-Dichloroethene	< 0.0038	**0.0046 J**
Trichloroethene	**0.11**	**0.0047 J**

RI-SB-23	(6-8')	(16-18')
6/22/2022	mg/kg	mg/kg
Acetone	< 0.015	**0.012 J**
Cis-1,2-Dichloroethene	**0.0024 J**	**0.021**
Trichloroethene	**0.0064**	**0.0057 J**

RI-SB-21	(0-2')	(2-4')
6/22-23/2022	mg/kg	mg/kg
1,1-Dichloroethane	**0.0086**	**0.0019 J**
Acetone	**0.063**	**0.083**
Cis-1,2-Dichloroethene	**0.16**	**0.0073**
Trans-1,2-Dichloroethene	**0.0097**	< 0.0034
Trichloroethene	**0.0089**	**0.018**
Vinyl Chloride	**0.06 J+**	**0.06 J+**

RI-SB-04	(6-8')	(14-16')
6/20/2022	mg/kg	mg/kg
Cis-1,2-Dichloroethene	**0.0023 J**	**0.0085**
Trichloroethene	**0.0094**	**0.068**

RI-SB-03	(6-8')	(16-18')
6/20/2022	mg/kg	mg/kg
Acetone	**0.014 J**	< 0.019
Cis-1,2-Dichloroethene	**0.013**	**0.099**
Tetrachloroethene	< 0.0047	**0.68**
Trans-1,2-Dichloroethene	< 0.0047	**0.0061**
Trichloroethene	**0.0027 J**	**0.92**

RI-SB-02	(2-4')	(4-6')	(6-8')	(6-8' DUP)
6/20/2022	mg/kg	mg/kg	mg/kg	mg/kg
1,1,2-Trichloro-1,2,2-trifluoroethane	< 0.0050	< 0.0042	< 0.0041	**0.0084**
2-Butanone	**0.018 J**	< 0.0084	< 0.0080	< 0.0088
Acetone	**0.11**	**0.019 J**	**0.11**	< 0.018
Cis-1,2-Dichloroethene	**0.0052 J**	**0.0091**	**0.033**	**0.011**
Methylcyclohexane	**0.0028 J**	< 0.0042	< 0.0041	< 0.0045
Total Xylenes	**0.0066 J**	< 0.0080	< 0.0080	< 0.0088
Trichloroethene	< 0.0050	**0.021**	**0.82**	**0.39**
Vinyl Chloride	**0.021**	**0.035**	< 0.0060	< 0.0066

RI-SB-05	(2-4')	(10-12')
6/20/2022	mg/kg	mg/kg
Tetrachloroethene	**0.0030 J**	<0.0049
Trichloroethene	**0.011**	<0.0049

RI-SB-08	(4-6')	(6-8')
6/20/2022	mg/kg	mg/kg
1,1,2-Trichloro-1,2,2-trifluoroethane	**0.035**	**0.041**
1,1-Dichloroethane	**0.0035 J**	**0.0062**
Cis-1,2-Dichloroethene	**0.023**	**0.064**
Tetrachloroethene	**0.0040 J**	**0.0061 J**
Trichloroethene	**0.47 J**	**1.2**
Vinyl Chloride	**0.0091 J**	< 0.0072

RI-SB-06	(4-6')	(16-18')
6/20/2022	mg/kg	mg/kg
Cis-1,2-Dichloroethene	<0.0040	**0.0027 J**
Tetrachloroethene	<0.0040	**0.011**
Trichloroethene	<0.0040	**0.0099**

RI-SB-09A	(1-4')
6/20/2022	mg/kg
Acetone	**0.045 J+**
Cis-1,2-Dichloroethene	**0.016 J+**
Cyclohexane	**0.01 J+**
Ethylbenzene	**0.013 J+**
Isopropylbenzene	**0.035 J+**
Methylcyclohexane	**0.16 J+**
Total Xylenes	**0.049 J+**
Trans-1,2-Dichloroethene	**0.0020 J+**
Vinyl Chloride	**0.0060 J+**

RI-SB-09B	(6-8')	(10-12')
6/20/2022	mg/kg	mg/kg
1,1,2-Trichloro-1,2,2-trifluoroethane	**0.021**	**0.0048 J**
Cis-1,2-Dichloroethene	**0.0038 J**	**0.0027 J**
Trichloroethene	**0.061**	**0.032**

RI-SB-07	(2-4')	(12-14')
6/20/2022	mg/kg	mg/kg
Acetone	< 0.014	**0.01 J**
Trichloroethene	**0.0052**	**0.0055**

RI-SB-22	(2-4')	(4-6')	(6-8')
6/22-23/2022	mg/kg	mg/kg	mg/kg
1,1-Dichloroethane	< 0.0042	**0.0024 J**	< 0.0038
1,1-Dichloroethene	< 0.0042	**0.0025 J**	< 0.0038
Acetone	**0.079**	< 0.017	< 0.015
Cis-1,2-Dichloroethene	**0.41 J**	**0.22 J**	**0.027**
Trans-1,2-Dichloroethene	**0.0046 J**	**0.0034 J**	< 0.0038
Trichloroethene	**0.033**	**0.55**	**0.13**
Vinyl Chloride	**0.0068 J+**	< 0.0060	< 0.0057

RI-SB-18	(2-4')	(6-8')
6/22-23/2022	mg/kg	mg/kg
Acetone	**0.01 J**	< 0.018
Cis-1,2-Dichloroethene	**0.011**	**0.019**
Trichloroethene	**0.11**	**0.35 J**

RI-SB-01	(4-6')	(10-12')
6/20-21/2022	mg/kg	mg/kg
1,1,2-Trichloro-1,2,2-trifluoroethane	< 0.0059	< 0.0036
Acetone	**0.014 J**	<0.014
Cis-1,2-Dichloroethene	< 0.0059	< 0.0036
Trichloroethene	< 0.0059	< 0.0036

RI-SB-12	(2-4')
6/21/2022	mg/kg
	ND

RI-SB-13	(2-4')	(10-12')
6/22-23/2022	mg/kg	mg/kg
	ND	ND

RI-SB-19	(2-4')	(2-4') DUP	(6-8')
6/22-23/2022	mg/kg	mg/kg	mg/kg
Trichloroethene	**1.8 J**	**47 J**	**11**

RI-SB-17	(0-2')	(2-4')	(4-6')	(6-8')	(8-10')
6/22-23/2022	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Acetone	**0.026 J**	**0.037**	< 12	< 0.5	< 2.2
Cis-1,2-Dichloroethene	< 0.0058	**0.0032 J**	< 3	< 0.12	< 0.58
Tetrachloroethene	**0.0051 J**	< 0.0049	< 3	< 0.12	< 0.58
Trichloroethene	**0.18**	**12**	**6900 J+**	**190 J+**	**670 J+**

RI-SB-16	(0-2')	(4-6')	(4-6' DUP)
6/22-23/2022	mg/kg	mg/kg	mg/kg
1,1,2-Trichloro-1,2,2-trifluoroethane	**0.029**	< 0.0049	< 0.0054
Acetone	**0.044**	< 0.02	< 0.022
Carbon Disulfide	**0.0033 J**	< 0.0049	< 0.0054
Cis-1,2-Dichloroethene	**0.0030 J**	**0.16**	**0.32 J**
Cyclohexane	**0.0045 J**	< 0.0049	< 0.0054
Ethylbenzene	**0.0069**	< 0.0049	< 0.0054
Isopropylbenzene	**0.0049 J**	< 0.0049	< 0.0054
Methylcyclohexane	**0.081**	< 0.0049	**0.0075**
Tetrachloroethene	< 0.0052	< 0.0049	**0.01**
Toluene	**0.0037 J**	< 0.0049	< 0.0054
Total Xylenes	**0.019**	< 0.0096	< 0.011
Trichloroethene	< 0.0052	**3.6**	**1.3**
Vinyl Chloride	**0.044**	< 0.0072	**0.0063 J**

RI-SB-14	(0-2')	(10-12')
6/21-22/2022	mg/kg	mg/kg
Acetone	**0.014 J**	**0.011 J**
Tetrachloroethene	< 0.0038	**0.0057**
Trichloroethene	< 0.0038	**0.0048 J**

RI-SB-15	(2-4')	(12-14')
6/21/2022	mg/kg	mg/kg
Acetone	**0.019 J**	**0.0094 J**
Tetrachloroethene	**0.014**	< 0.0045
Trichloroethene	**0.013**	< 0.0045

RI-SB-11	(4-6')	(10-12')
6/21/2022	mg/kg	mg/kg
Acetone	**0.03**	<0.019

RI-SB-10	(2-4')	(18-20')
6/21/2022	mg/kg	mg/kg
	ND	ND

RI-SB-20	(0-2')	(4-6')
6/22-23/2022	mg/kg	mg/kg
1,1,2-Trichloro-1,2,2-trifluoroethane	< 0.0041	**0.0076**
Acetone	**0.068**	< 0.018
Cis-1,2-Dichloroethene	**0.035**	**0.025**
Trans-1,2-Dichloroethene	**0.0042 J**	< 0.0045
Trichloroethene	**0.19**	**0.47**
Vinyl Chloride	**0.01 J+**	< 0.0066

SOURCE OF FORMER SOURCE AREAS:

PIKA–ARCADIS U.S., INC., 2020. DRAFT REMEDIAL INVESTIGATION REPORT, REVISION 0. TARHEEL ARMY MISSILE PLANT, BURLINGTON, NORTH CAROLINA. CONTRACT NO. W91ZLK–13–D–0009, TASK ORDER 0012. APRIL.

SCALE IN FEET
0 10 20 40

CHECK BY: DRM
DRAWN BY: OS
DATE: 12–16–22
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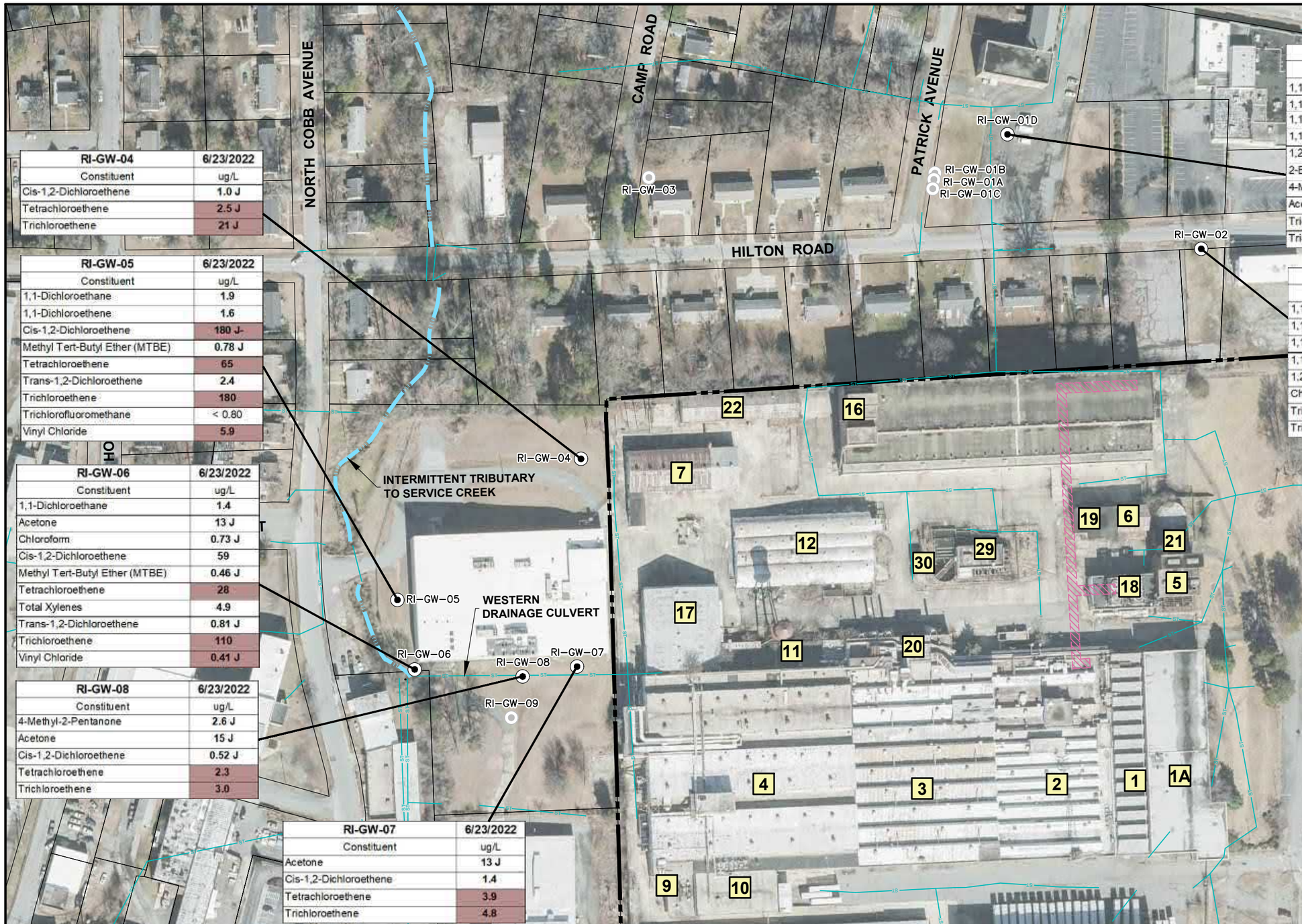
CAD NO.: 7021P145I
PRJ NO.: 7021P145

terracon
2401 BRENTWOOD ROAD, SUITE 107 RALEIGH, NC 27604
PHONE: (919) 873–2211 FAX: (919) 873–9555

RESULTS OF SOIL SAMPLES IN SAPROLITE
JUNE 2022
REMEDIAL INVESTIGATION
TARHEEL ARMY MISSILE PLANT
204 N. GRAHAM–HOPEDALE ROAD
BURLINGTON, ALAMANCE COUNTY, NORTH CAROLINA

FIGURE
9



RI-GW-04	6/23/2022
Constituent	ug/L
Cis-1,2-Dichloroethene	1.0 J
Tetrachloroethene	2.5 J
Trichloroethene	21 J

RI-GW-05	6/23/2022
Constituent	ug/L
1,1-Dichloroethane	1.9
1,1-Dichloroethene	1.6
Cis-1,2-Dichloroethene	180 J-
Methyl Tert-Butyl Ether (MTBE)	0.78 J
Tetrachloroethene	65
Trans-1,2-Dichloroethene	2.4
Trichloroethene	180
Trichlorofluoromethane	< 0.80
Vinyl Chloride	5.9

RI-GW-06	6/23/2022
Constituent	ug/L
1,1-Dichloroethane	1.4
Acetone	13 J
Chloroform	0.73 J
Cis-1,2-Dichloroethene	59
Methyl Tert-Butyl Ether (MTBE)	0.46 J
Tetrachloroethene	28
Total Xylenes	4.9
Trans-1,2-Dichloroethene	0.81 J
Trichloroethene	110
Vinyl Chloride	0.41 J

RI-GW-08	6/23/2022
Constituent	ug/L
4-Methyl-2-Pentanone	2.6 J
Acetone	15 J
Cis-1,2-Dichloroethene	0.52 J
Tetrachloroethene	2.3
Trichloroethene	3.0

RI-GW-07	6/23/2022
Constituent	ug/L
Acetone	13 J
Cis-1,2-Dichloroethene	1.4
Tetrachloroethene	3.9
Trichloroethene	4.8

RI-GW-01	6/23/2022
Constituent	ug/L
1,1,1-Trichloroethane	< 0.80 J
1,1,2-Trichloro-1,2,2-trifluoroethane	< 0.84 J
1,1-Dichloroethane	0.52 J
1,1-Dichloroethene	0.41 J
1,2-Dichloroethane	1.1 J
2-Butanone	4.0 J
4-Methyl-2-Pentanone	2.0 J
Acetone	68 J
Trichloroethene	< 0.80 J
Trichlorofluoromethane	< 0.80 J

RI-GW-02	6/23/2022	DUP
Constituent	ug/L	ug/L
1,1,1-Trichloroethane	2.4 J	2.6 J
1,1,2-Trichloro-1,2,2-trifluoroethane	20 J	20 J
1,1-Dichloroethane	13 J	14 J
1,1-Dichloroethene	32 J	33 J
1,2-Dichloroethane	3.2 J	3.2 J
Chloroform	1.7 J	1.9 J
Trichloroethene	1.8 J	1.9 J
Trichlorofluoromethane	0.80 J	0.82 J

LEGEND

- SITE BOUNDARY
- GRAB GROUNDWATER SAMPLE
- GRAB GROUNDWATER SAMPLE ATTEMPT
- 14 BUILDING NUMBER
- STORM SEWER
- DRAINAGE DITCH/STREAM
- TUNNELS
- INDICATES AN EXCEEDANCE OF THE 2L STANDARDS
- J ESTIMATED CONCENTRATION BETWEEN LABORATORY METHOD DETECTION LIMIT AND REPORTING LIMIT
- J– ESTIMATED CONCENTRATION WITH A POTENTIAL LOW BIAS

AERIAL SOURCE: ALAMANCE COUNTY GIS, 2008 ORTHOPHOTO

SCALE IN FEET

0 75 150 300

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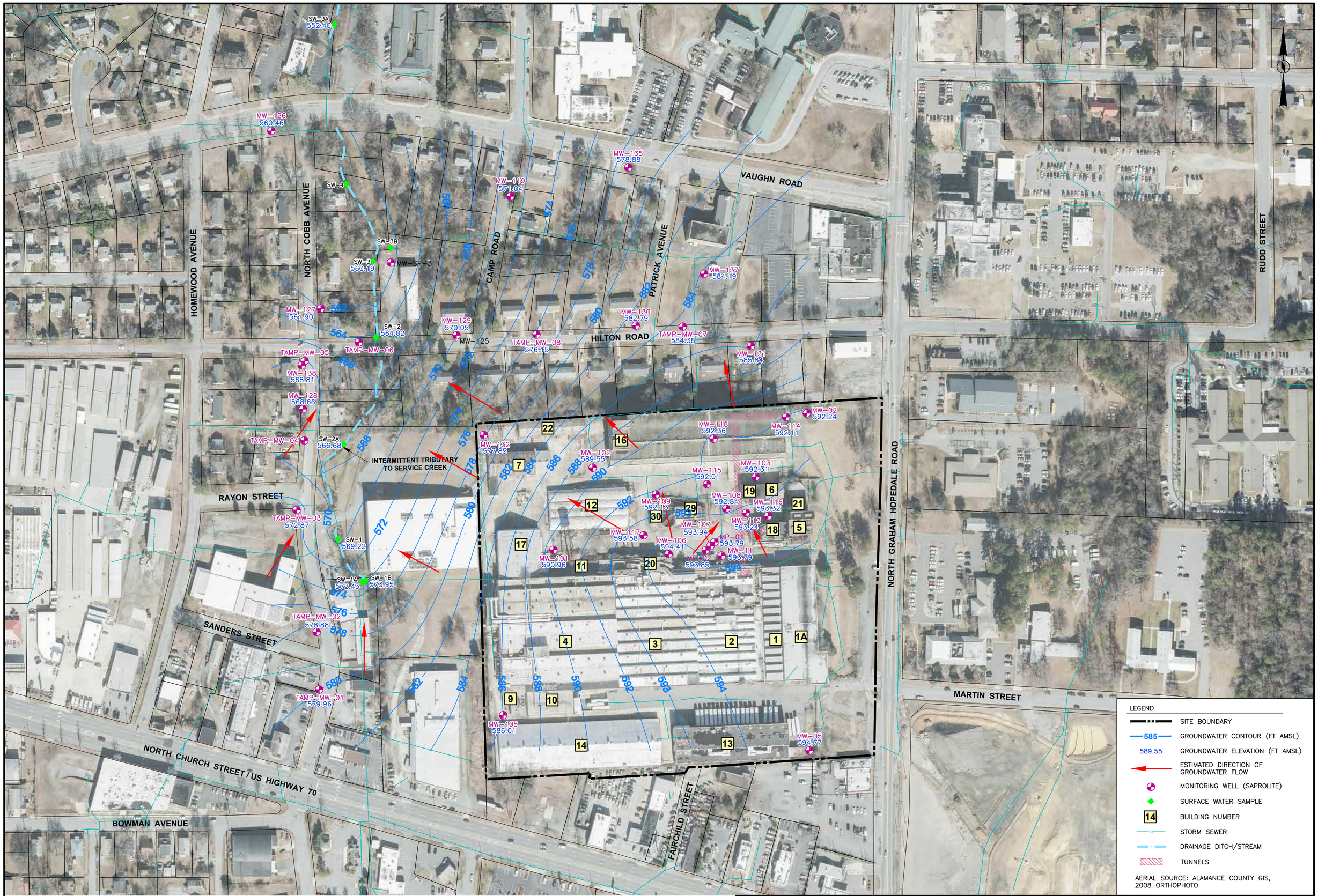
DATE	12-7-22
SCALE	AS SHOWN
CAD NO.	7021P145J
PRJ NO.	7021P145

RESULTS OF SCREENING-LEVEL GROUNDWATER SAMPLES IN NEIGHBORHOODS (JUNE 23, 2002)
REMEDIAL INVESTIGATION
TARHEEL ARMY MISSILE PLANT
204 N. GRAHAM-HOPEDALE ROAD
BURLINGTON, ALAMANCE COUNTY, NORHT CAROLINA

terracon
2401 BRENTWOOD ROAD, SUITE 107 RALEIGH, NC 27604
PHONE: (919) 873-2211 FAX: (919) 873-9555

FIGURE
10



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PRJ NO.:	7021P145

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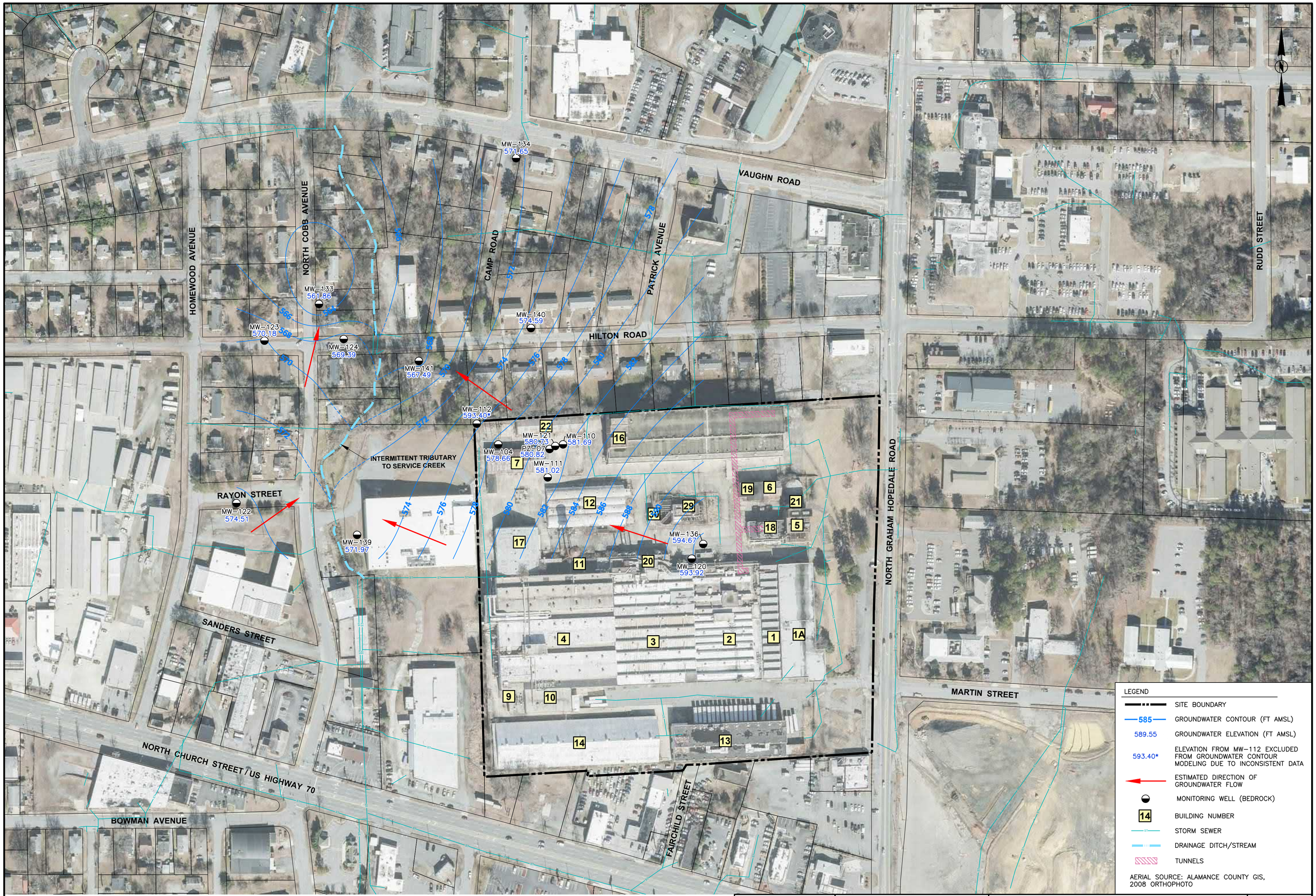
POTENTIOMETRIC SURFACE MAP OF SAPROLITE AQUIFER ZONE
AUGUST 2022
REMEDIAL INVESTIGATION
TARHEEL ARMY MISSILE PLANT
204 N. GRAHAM-HOPEDALE ROAD
BURLINGTON, ALAMANCE COUNTY, NORTH CAROLINA

FIGURE
11



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POTENTIOMETRIC SURFACE MAP OF BEDROCK AQUIFER ZONE
AUGUST 2022
REMEDIAL INVESTIGATION
TARHEEL ARMY MISSILE PLANT
204 N. GRAHAM-HOPEDALE ROAD
BURLINGTON, ALAMANCE COUNTY, NORTH CAROLINA

FIGURE
12

LEGEND

- SITE BOUNDARY
- 585 GROUNDWATER CONTOUR (FT AMSL)
- 589.55 GROUNDWATER ELEVATION (FT AMSL)
- ESTIMATED DIRECTION OF GROUNDWATER FLOW
- MONITORING WELL (SAPROLITE)
- SURFACE WATER SAMPLE
- 14 BUILDING NUMBER
- STORM SEWER
- DRAINAGE DITCH/STREAM
- TUNNELS

AERIAL SOURCE: ALAMANCE COUNTY GIS, 2008 ORTHOPHOTO

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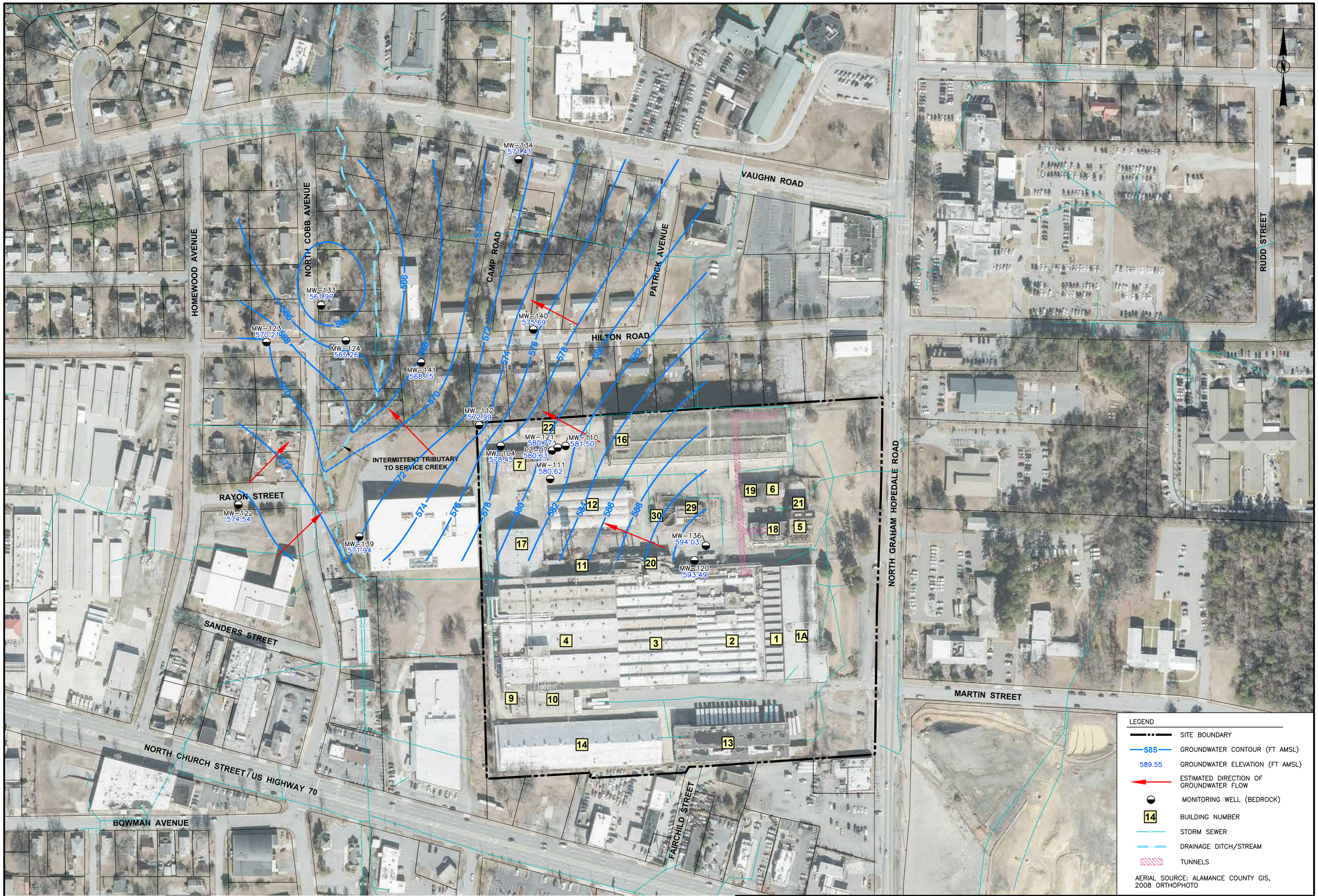
POTENTIOMETRIC SURFACE MAP OF SAPROLITE AQUIFER ZONE
OCTOBER 2022
REMEDIAL INVESTIGATION
TARHEEL ARMY MISSILE PLANT
204 N. GRAHAM-HOPEDALE ROAD
BURLINGTON, ALAMANCE COUNTY, NORTH CAROLINA

FIGURE
13



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SCALE:	AS SHOWN
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PRJ NO.:	7021P145

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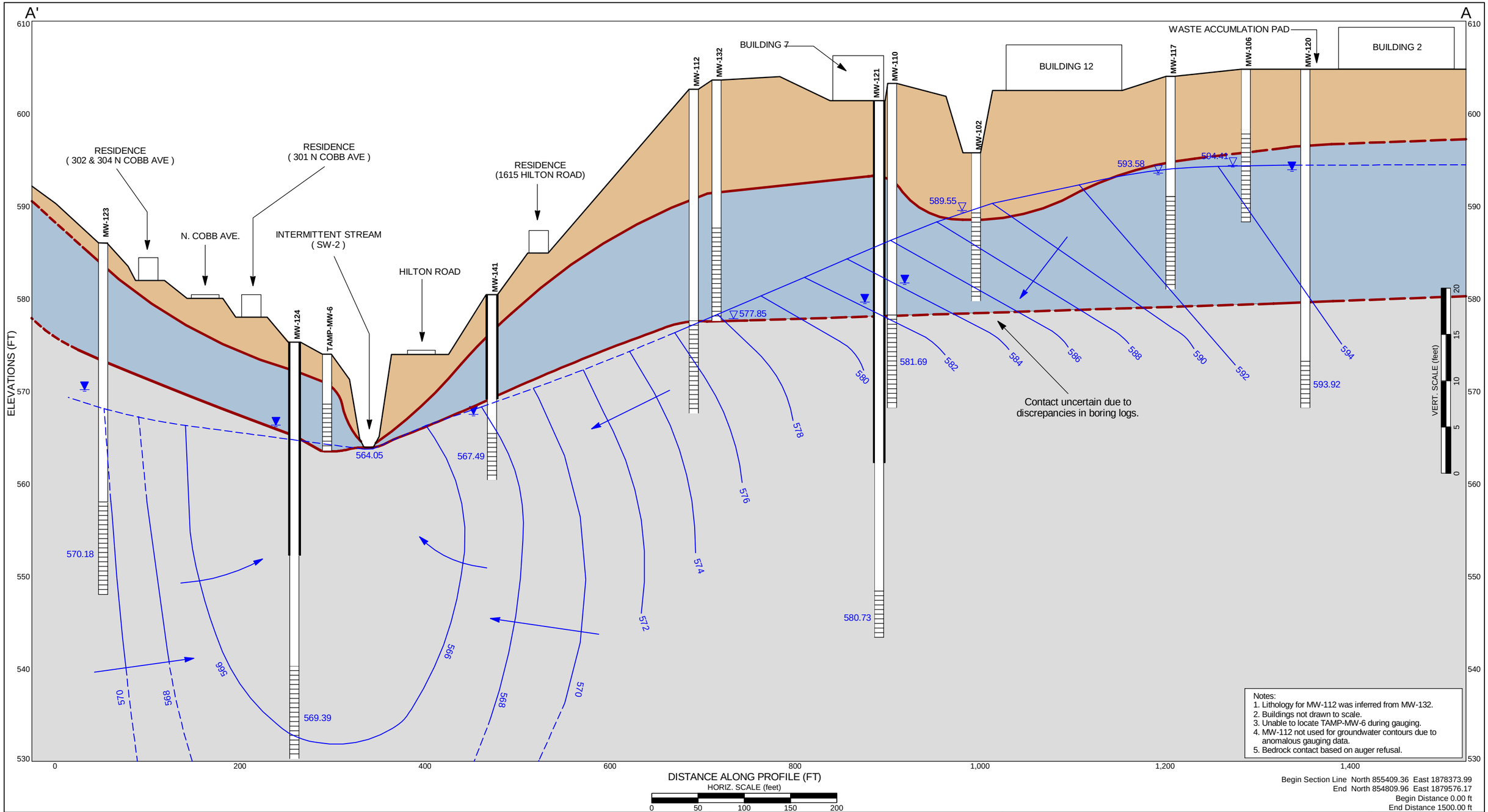
POTENTIOMETRIC SURFACE MAP OF BEDROCK AQUIFER ZONE
OCTOBER 2022
REMEDIAL INVESTIGATION
TARHEEL ARMY MISSILE PLANT
204 N. GRAHAM-HOPEDALE ROAD
BURLINGTON, ALAMANCE COUNTY, NORTH CAROLINA

FIGURE
14



Notes:
1. Lithology for MW-112 was inferred from MW-132.
2. Buildings not drawn to scale.
3. Unable to locate TAMP-MW-6 during gauging.
4. MW-112 not used for groundwater contours due to anomalous gauging data.
5. Bedrock contact based on auger refusal.

Begin Section Line North 855409.36 East 1878373.99
End North 854809.96 East 1879576.17
Begin Distance 0.00 ft
End Distance 1500.00 ft

LEGEND

- Groundwater Monitoring Well (593.93) — Groundwater Elevation (ft. msl) August 2022
- Well Riser in Outer Casing — Suficial Water Table Elevation (ft. msl) (Dashed Where Inferred)
- Well Screen — Bedrock Groundwater Elevation
- 590 — 2' Groundwater Equipotential Contour (ft. msl) (Dashed Where Inferred)
- Line of Lithologic Contact (Dashed Where Inferred)
- Groundwater Flow Direction
- Building / Structure
- Fill / Reworked
- Saprolite
- Bedrock

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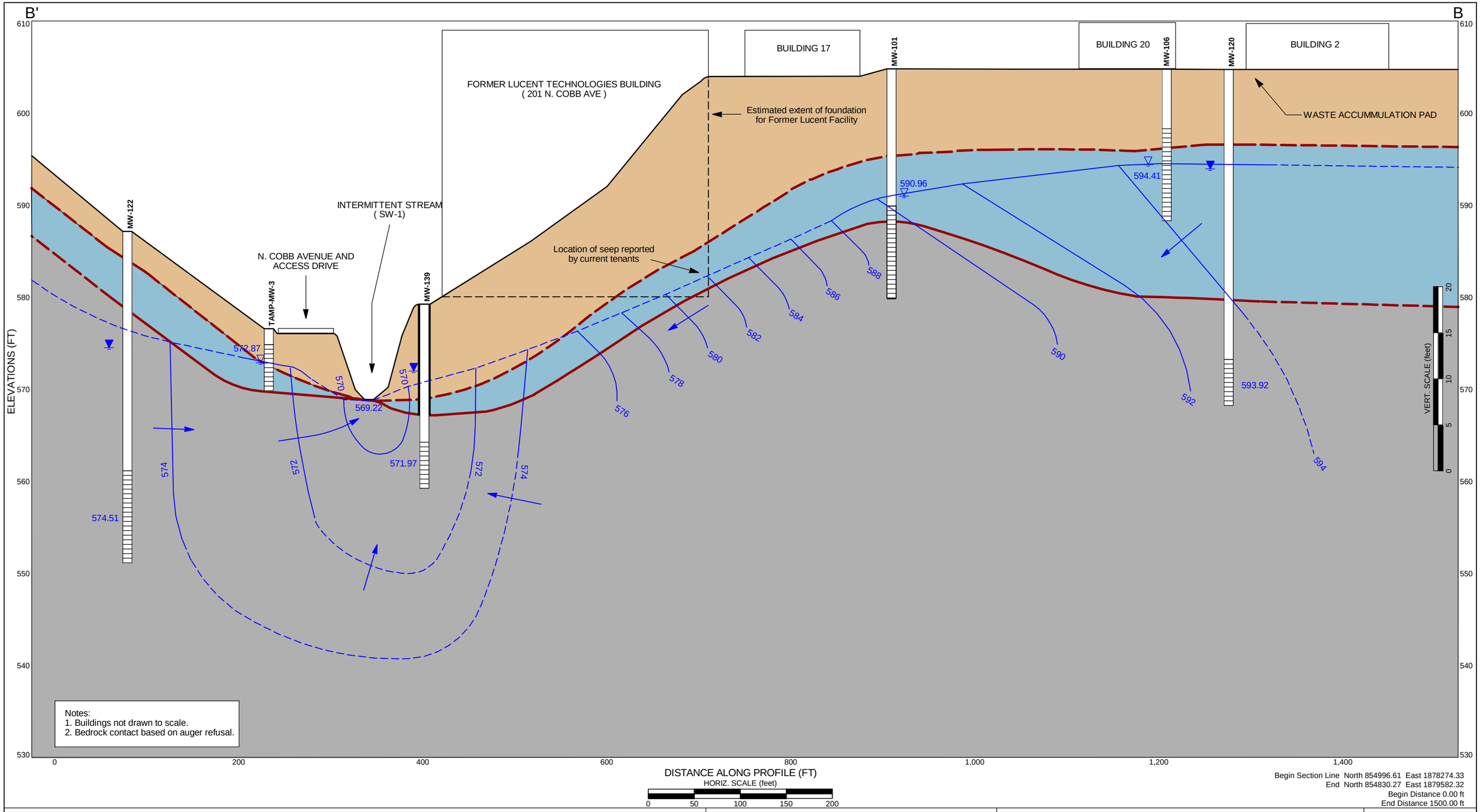
Geologic Cross Section A-A' (Centerline) with Potentiometric Surface Elevations (August 2022)

Remedial Investigation
Tarheel Army Missle Plant
204 N. Graham-Hopedale Road.
Burlington, Alamance County, North Carolina

Project Number: 7021P145 | Drawn By: AAL | Check By: ECD

Figure
15



Notes:
1. Buildings not drawn to scale.
2. Bedrock contact based on auger refusal.

Begin Section Line North 854996.61 East 1878274.33
End North 854830.27 East 1879582.32
Begin Distance 0.00 ft
End Distance 1500.00 ft

LEGEND

- Groundwater Monitoring Well (593.93) — Groundwater Elevation (ft. msl) August 2022
- Well Riser in Outer Casing — Suficial Water Table Elevation (ft. msl) (Dashed Where Inferred)
- Well Screen — Bedrock Groundwater Elevation
- 590 — 2' Groundwater Equipotential Contour (ft. msl) (Dashed Where Inferred)
- Line of Lithologic Contact (Dashed Where Inferred)
- Groundwater Flow Direction
- Building / Structure
- Fill / Reworked
- Saprolite
- Bedrock

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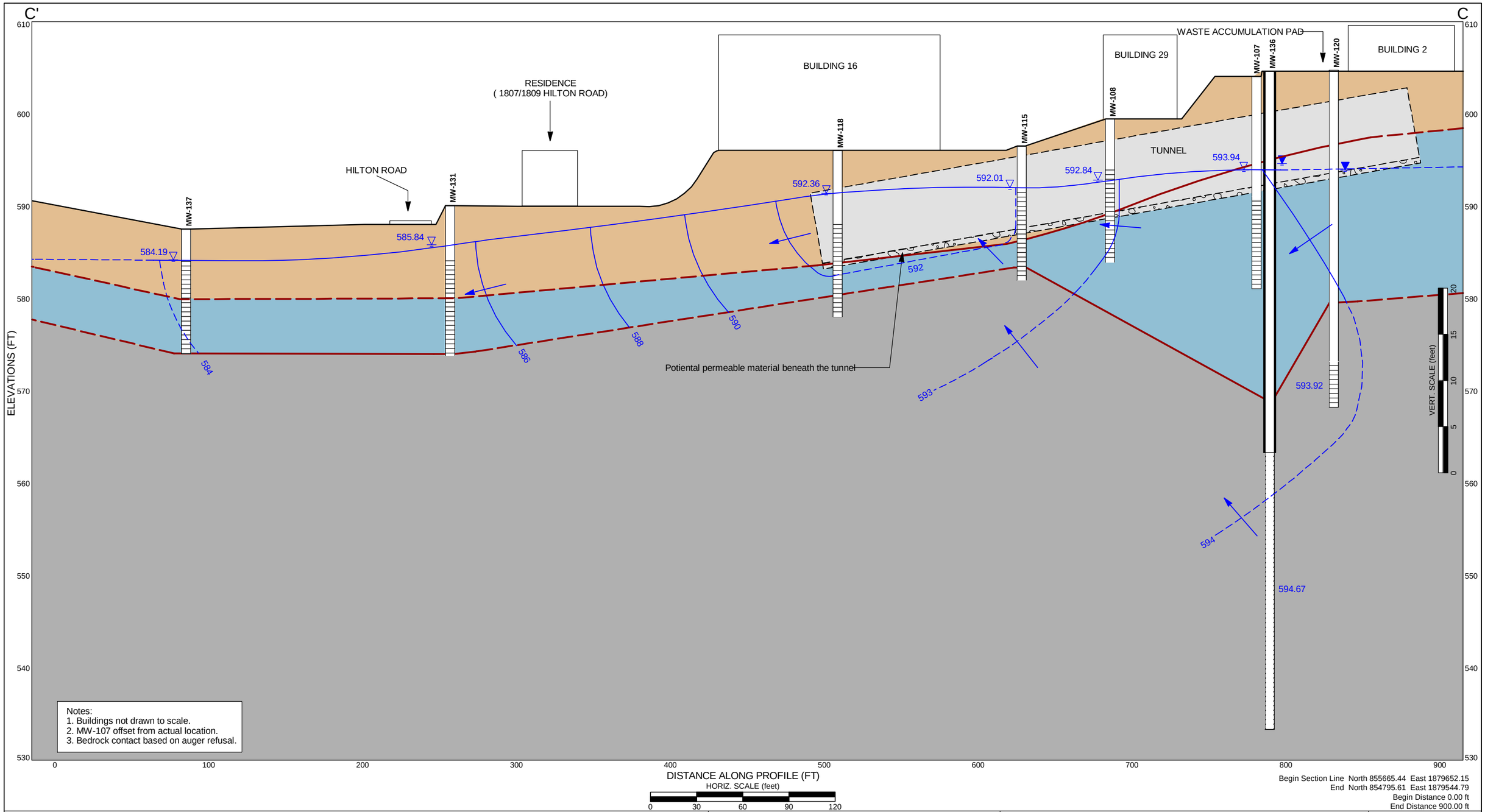
Geologic Cross Section B-B' (Due West) with Potentiometric Surface Elevations (August 2022)

Remedial Investigation
Tarheel Army Missle Plant
204 N. Graham-Hopedale Road.
Burlington, Alamance County, North Carolina

Project Number: 7021P145 | Drawn By: AAL | Check By: ECD

Figure
16



Notes:
1. Buildings not drawn to scale.
2. MW-107 offset from actual location.
3. Bedrock contact based on auger refusal.

Begin Section Line North 855665.44 East 1879652.15
End North 854795.61 East 1879544.79
Begin Distance 0.00 ft
End Distance 900.00 ft

LEGEND

- Groundwater Monitoring Well
- Well Riser in Outer Casing
- Well Screen
- Open Borehole
- Suficial Water Table Elevation (ft. msl) (Dashed Where Inferred)
- Bedrock Groundwater Elevation (593.93)
- Groundwater Flow Direction
- 590 Groundwater Equipotential Contour (ft. msl) (Dashed Where Inferred)
- Line of Lithologic Contact (Dashed Where Inferred)
- Groundwater Elevation (ft. msl) August 2022
- Building / Structure
- Fill / Reworked
- Saprolite
- Bedrock

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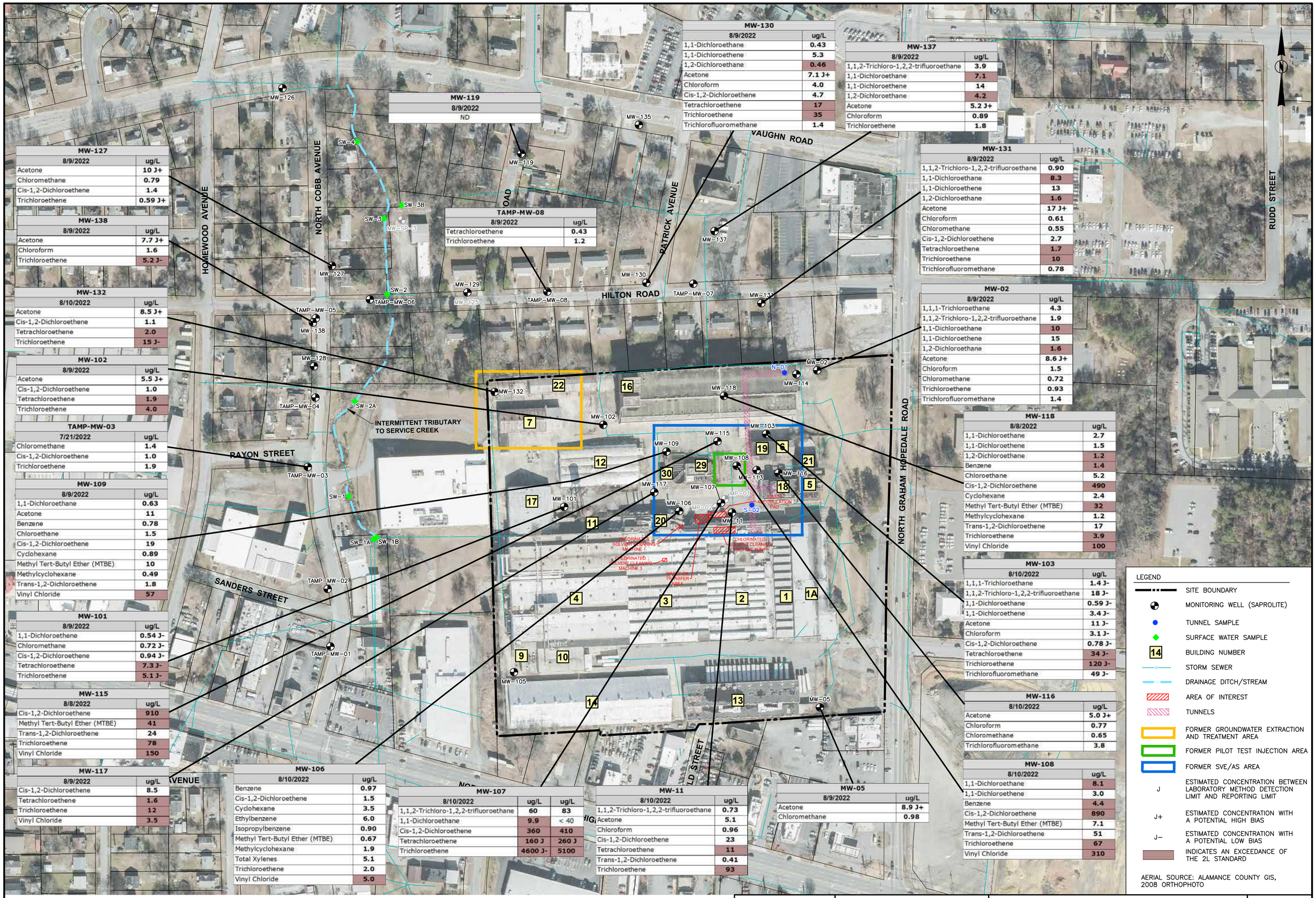
Geologic Cross Section C-C' (Due North) with Potentiometric Surface Elevations (August 2022)

Remedial Investigation
Tarheel Army Missle Plant
204 N. Graham-Hopedale Road.
Burlington, Alamance County, North Carolina

Project Number: 7021P145 | Drawn By: AAL | Check By: ECD

Figure
17



MW-127	
8/9/2022	ug/L
Acetone	10 J+
Chloromethane	0.79
Cis-1,2-Dichloroethene	1.4
Trichloroethene	0.59 J+

MW-138	
8/9/2022	ug/L
Acetone	7.7 J+
Chloroform	1.6
Trichloroethene	5.2 J-

MW-132	
8/10/2022	ug/L
Acetone	8.5 J+
Cis-1,2-Dichloroethene	1.1
Tetrachloroethene	2.0
Trichloroethene	15 J-

MW-102	
8/9/2022	ug/L
Acetone	5.5 J+
Cis-1,2-Dichloroethene	1.0
Tetrachloroethene	1.9
Trichloroethene	4.0

TAMP-MW-03	
7/21/2022	ug/L
Chloromethane	1.4
Cis-1,2-Dichloroethene	1.0
Trichloroethene	1.9

MW-109	
8/9/2022	ug/L
1,1-Dichloroethane	0.63
Acetone	11
Benzene	0.78
Chloroethane	1.5
Cis-1,2-Dichloroethene	19
Cyclohexane	0.89
Methyl Tert-Butyl Ether (MTBE)	10
Methylcyclohexane	0.49
Trans-1,2-Dichloroethene	1.8
Vinyl Chloride	57

MW-101	
8/9/2022	ug/L
1,1-Dichloroethene	0.54 J-
Chloromethane	0.72 J-
Cis-1,2-Dichloroethene	0.94 J-
Tetrachloroethene	7.3 J-
Trichloroethene	5.1 J-

MW-115	
8/8/2022	ug/L
Cis-1,2-Dichloroethene	910
Methyl Tert-Butyl Ether (MTBE)	41
Trans-1,2-Dichloroethene	24
Trichloroethene	78
Vinyl Chloride	150

MW-117	
8/9/2022	ug/L
Cis-1,2-Dichloroethene	8.5
Tetrachloroethene	1.6
Trichloroethene	12
Vinyl Chloride	3.5

MW-119
8/9/2022
ND

TAMP-MW-08	
8/9/2022	ug/L
Tetrachloroethene	0.43
Trichloroethene	1.2

MW-130	
8/9/2022	ug/L
1,1-Dichloroethane	0.43
1,1-Dichloroethene	5.3
1,2-Dichloroethane	0.46
Acetone	7.1 J+
Chloroform	4.0
Cis-1,2-Dichloroethene	4.7
Tetrachloroethene	17
Trichloroethene	35
Trichlorofluoromethane	1.4

MW-137	
8/9/2022	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	3.9
1,1-Dichloroethane	7.1
1,1-Dichloroethene	14
1,2-Dichloroethane	4.2
Acetone	5.2 J+
Chloroform	0.89
Trichloroethene	1.8

MW-131	
8/9/2022	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	0.90
1,1-Dichloroethane	8.3
1,1-Dichloroethene	13
1,2-Dichloroethane	1.6
Acetone	17 J+
Chloroform	0.61
Chloromethane	0.55
Cis-1,2-Dichloroethene	2.7
Tetrachloroethene	1.7
Trichloroethene	10
Trichlorofluoromethane	0.78

MW-02	
8/9/2022	ug/L
1,1,1-Trichloroethane	4.3
1,1,2-Trichloro-1,2,2-trifluoroethane	1.9
1,1-Dichloroethane	10
1,1-Dichloroethene	15
1,2-Dichloroethane	1.6
Acetone	8.6 J+
Chloroform	1.5
Chloromethane	0.72
Trichloroethene	0.93
Trichlorofluoromethane	1.4

MW-118	
8/8/2022	ug/L
1,1-Dichloroethane	2.7
1,1-Dichloroethene	1.5
1,2-Dichloroethane	1.2
Benzene	1.4
Chloroethane	5.2
Cis-1,2-Dichloroethene	490
Cyclohexane	2.4
Methyl Tert-Butyl Ether (MTBE)	32
Methylcyclohexane	1.2
Trans-1,2-Dichloroethene	17
Trichloroethene	3.9
Vinyl Chloride	100

MW-103	
8/10/2022	ug/L
1,1,1-Trichloroethane	1.4 J-
1,1,2-Trichloro-1,2,2-trifluoroethane	18 J-
1,1-Dichloroethane	0.59 J-
1,1-Dichloroethene	3.4 J-
Acetone	11 J-
Chloroform	3.1 J-
Cis-1,2-Dichloroethene	0.78 J-
Tetrachloroethene	34 J-
Trichloroethene	120 J-
Trichlorofluoromethane	49 J-

MW-116	
8/10/2022	ug/L
Acetone	5.0 J+
Chloroform	0.77
Chloromethane	0.65
Trichlorofluoromethane	3.8

MW-108	
8/10/2022	ug/L
1,1-Dichloroethane	8.1
1,1-Dichloroethene	3.0
Benzene	4.4
Cis-1,2-Dichloroethene	890
Methyl Tert-Butyl Ether (MTBE)	7.1
Trans-1,2-Dichloroethene	51
Trichloroethene	67
Vinyl Chloride	310

MW-106	
8/10/2022	ug/L
Benzene	0.97
Cis-1,2-Dichloroethene	1.5
Cyclohexane	3.5
Ethylbenzene	6.0
Isopropylbenzene	0.90
Methyl Tert-Butyl Ether (MTBE)	0.67
Methylcyclohexane	1.9
Total Xylenes	5.1
Trichloroethene	2.0
Vinyl Chloride	5.0

MW-107		
8/10/2022	ug/L	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	60	83
1,1-Dichloroethane	9.9	< 40
Cis-1,2-Dichloroethene	360	410
Tetrachloroethene	160 J	260 J
Trichloroethene	4600 J-	5100

MW-11	
8/10/2022	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	0.73
Acetone	5.1
Chloroform	0.96
Cis-1,2-Dichloroethene	23
Tetrachloroethene	11
Trans-1,2-Dichloroethene	0.41
Trichloroethene	93

MW-05	
8/9/2022	ug/L
Acetone	8.9 J+
Chloromethane	0.98

LEGEND

- SITE BOUNDARY
- MONITORING WELL (SAPROLITE)
- TUNNEL SAMPLE
- SURFACE WATER SAMPLE
- 14 BUILDING NUMBER
- STORM SEWER
- DRAINAGE DITCH/STREAM
- AREA OF INTEREST
- TUNNELS
- FORMER GROUNDWATER EXTRACTION AND TREATMENT AREA
- FORMER PILOT TEST INJECTION AREA
- FORMER SVE/AS AREA
- J — ESTIMATED CONCENTRATION BETWEEN LABORATORY METHOD DETECTION LIMIT AND REPORTING LIMIT
- J+ — ESTIMATED CONCENTRATION WITH A POTENTIAL HIGH BIAS
- J– — ESTIMATED CONCENTRATION WITH A POTENTIAL LOW BIAS
- INDICATES AN EXCEEDANCE OF THE 2L STANDARD

AERIAL SOURCE: ALAMANCE COUNTY GIS, 2008 ORTHOPHOTO

SOURCE OF FORMER SOURCE AREAS:

ROY F. WESTON, INC., 1993, COMPREHENSIVE SITE ASSESSMENT SUBSURFACE SOIL AND GROUNDWATER INVESTIGATION AT THE WASTE ACCUMULATION PAD AND UNDERGROUND STORAGE TANK AREAS, TARHEEL ARMY MISSILE PLANT, BURLINGTON, NORTH CAROLINA, AUGUST 26.

PIKA–ARCADIS U.S., INC., 2020. DRAFT REMEDIAL INVESTIGATION REPORT, REVISION 0. TARHEEL ARMY MISSILE PLANT, BURLINGTON, NORTH CAROLINA. CONTRACT NO. W91ZLK–13–D–0009, TASK ORDER 0012. APRIL.

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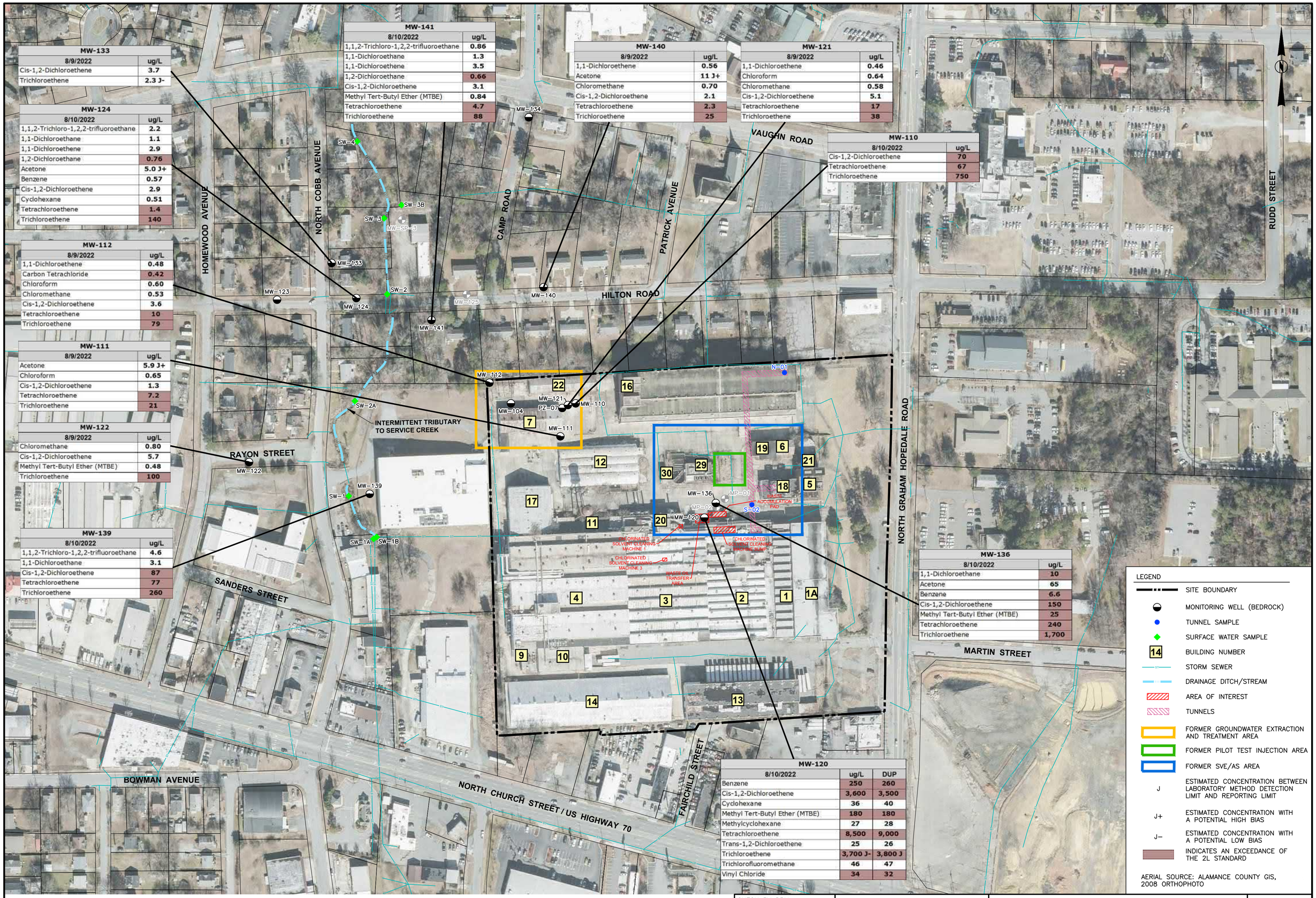
VOC RESULTS OF GROUNDWATER SAMPLES IN SAPROLITE AQUIFER ZONE (AUGUST 2022)
REMEDIAL INVESTIGATION
TARHEEL ARMY MISSILE PLANT
204 N. GRAHAM–HOPEDALE ROAD
BURLINGTON, ALAMANCE COUNTY, NORTH CAROLINA

FIGURE
18



MW-133

8/9/2022	ug/L
Cis-1,2-Dichloroethene	3.7
Trichloroethene	2.3 J-

MW-124

8/10/2022	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	2.2
1,1-Dichloroethane	1.1
1,1-Dichloroethene	2.9
1,2-Dichloroethane	0.76
Acetone	5.0 J+
Benzene	0.57
Cis-1,2-Dichloroethene	2.9
Cyclohexane	0.51
Tetrachloroethene	1.4
Trichloroethene	140

MW-112

8/9/2022	ug/L
1,1-Dichloroethene	0.48
Carbon Tetrachloride	0.42
Chloroform	0.60
Chloromethane	0.53
Cis-1,2-Dichloroethene	3.6
Tetrachloroethene	10
Trichloroethene	79

MW-111

8/9/2022	ug/L
Acetone	5.9 J+
Chloroform	0.65
Cis-1,2-Dichloroethene	1.3
Tetrachloroethene	7.2
Trichloroethene	21

MW-122

8/9/2022	ug/L
Chloromethane	0.80
Cis-1,2-Dichloroethene	5.7
Methyl Tert-Butyl Ether (MTBE)	0.48
Trichloroethene	100

MW-139

8/10/2022	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	4.6
1,1-Dichloroethane	3.1
Cis-1,2-Dichloroethene	87
Tetrachloroethene	77
Trichloroethene	260

MW-141

8/10/2022	ug/L
1,1,2-Trichloro-1,2,2-trifluoroethane	0.86
1,1-Dichloroethane	1.3
1,1-Dichloroethene	3.5
1,2-Dichloroethane	0.66
Cis-1,2-Dichloroethene	3.1
Methyl Tert-Butyl Ether (MTBE)	0.84
Tetrachloroethene	4.7
Trichloroethene	88

MW-140

8/9/2022	ug/L
1,1-Dichloroethene	0.56
Acetone	11 J+
Chloromethane	0.70
Cis-1,2-Dichloroethene	2.1
Tetrachloroethene	2.3
Trichloroethene	25

MW-121

8/9/2022	ug/L
1,1-Dichloroethene	0.46
Chloroform	0.64
Chloromethane	0.58
Cis-1,2-Dichloroethene	5.1
Tetrachloroethene	17
Trichloroethene	38

MW-110

8/10/2022	ug/L
Cis-1,2-Dichloroethene	70
Tetrachloroethene	67
Trichloroethene	750

MW-136

8/10/2022	ug/L
1,1-Dichloroethane	10
Acetone	65
Benzene	6.6
Cis-1,2-Dichloroethene	150
Methyl Tert-Butyl Ether (MTBE)	25
Tetrachloroethene	240
Trichloroethene	1,700

MW-120

8/10/2022	ug/L	DUP
Benzene	250	260
Cis-1,2-Dichloroethene	3,600	3,500
Cyclohexane	36	40
Methyl Tert-Butyl Ether (MTBE)	180	180
Methylcyclohexane	27	28
Tetrachloroethene	8,500	9,000
Trans-1,2-Dichloroethene	25	26
Trichloroethene	3,700 J-	3,800 J
Trichlorofluoromethane	46	47
Vinyl Chloride	34	32

SOURCE OF FORMER SOURCE AREAS:

ROY F. WESTON, INC., 1993, COMPREHENSIVE SITE ASSESSMENT SUBSURFACE SOIL AND GROUNDWATER INVESTIGATION AT THE WASTE ACCUMULATION PAD AND UNDERGROUND STORAGE TANK AREAS, TARHEEL ARMY MISSILE PLANT, BURLINGTON, NORTH CAROLINA, AUGUST 26.

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VOC RESULTS OF GROUNDWATER SAMPLES IN BEDROCK AQUIFER ZONE
(AUGUST 2022)
REMEDIAL INVESTIGATION
TARHEEL ARMY MISSILE PLANT
204 N. GRAHAM–HOPEDALE ROAD
BURLINGTON, ALAMANCE COUNTY, NORTH CAROLINA

FIGURE
19

Appendix A

Human-Health Risk Assessment and Screening-Level Ecological Risk Screening

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December 14, 2022

U.S. Army Corps of Engineers – Savannah District
100 W. Oglethorpe Ave.
Savannah, Georgia 31401-3604

Attn: Dena Thompson
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Re: Human-Health Risk Assessment and Screening-Level Ecological Risk Screening
Former Tarheel Army Missile Plant
204 N. Graham Hopedale Road
Burlington, North Carolina 27217
USEPA ID: NC7210020544
Terracon Project No. 7521P145

Dear Ms. Thompson:

Northwind-Jacobs Joint Venture and Terracon Consultants, Inc. appreciates the opportunity to submit this Human Health Risk Assessment (HHRA) and a Screening Level Ecological Risk Assessment (SLERA) to the U.S. Army Corps of Engineers – Savannah District for the assessment activities conducted at the above-referenced Site during 2022.

Following the North Carolina Department of Environmental Quality (NCDEQ 2021) guidance and the United States Environmental Protection Agency Risk Assessment Guidance (1989), "risk characterization is a similar process for both human health and ecological risk assessments. The fundamental paradigm for human health risk characterization has four phases: (1) hazard identification, (2) dose-response assessment, (3) exposure assessment, and (4) risk characterization. Similarly, the fundamental framework for screening level ecological risk characterization includes four analogous phases: (1) problem formulation, (2) exposure characterization, (3) ecological effects characterization, and (4) risk characterization."

The enclosed attachments present the processes, risk assessment results, and conclusions for both the HHRA and SLERA. Please let us know if you have any questions or comments.

Sincerely,
Terracon Consultants, Inc.

Laura Elliott, P.G. (NC)
Senior Geologist

Edmund Woloszyn, Jr., R.E.M.
Department Manager II – Environmental Services

Attachments

HUMAN HEALTH RISK ASSESSMENT

A human health risk assessment (HHRA) was completed by PIKA-Arcadis U.S., Inc. (Arcadis) in 2020 (*Draft Remedial Investigation Report April 2020*) for the Tarheel Army Missile Plant (TAMP) using the United States Environmental Protection Agency (USEPA) guidance documents (USEPA 1989, 2004, 2009, 2014, 2018a) and the North Carolina Department of Environmental Quality (NCDEQ) Risk Calculator (NCDEQ 2022a). In the 2020 HHRA, Arcadis concluded that the use of groundwater as a potable water source and direct contact with on-site soil drove risks that were above acceptable hazard indices and cancer risks, primarily due to the presence of high levels of trichloroethene (TCE). Arcadis also concluded that all off-site risks resulting from vapor intrusion from chemicals of potential concern (COPCs) detected in either groundwater or soil vapor were within or below the regulatory benchmarks.

Terracon completed this HHRA update using the Remedial Investigation (RI) data collected in 2022 to evaluate the potential for current risks and hazards associated with exposure to contaminated environmental media (soil, groundwater, surface water, and soil gas/vapor intrusion) at the TAMP property (on-site) and affected properties (off-site) in the adjacent neighborhood. The HHRA follows methods recommended by NCDEQ (2021) Risk-Based Calculator User Guide. The HHRA consisted of developing a conceptual site exposure model (CSEM), identifying the COPCs, entering data into the NCDEQ's July 2022 Risk Calculator based on viable exposure scenarios for onsite and offsite receptors. The HHRA also includes an uncertainty analysis to discuss variability associated with the risk evaluation.

Conceptual Site Exposure Model

The CSEM characterizes the potential sources and release mechanisms, and identifies the media of concern (exposure points), potential receptors, and their potential exposure routes for on-site and off-site receptors. Exposure points are places where exposure could potentially occur, and exposure routes are the means by which the COPCs may be absorbed by the receptor (e.g., ingestion, inhalation, and dermal contact).

Potential On-Site Exposure Scenarios

The potential on-site exposures scenarios evaluated in the CSEM included only the TAMP property (**Exhibits 1 and 2**). The TAMP facility currently is not occupied by full-time workers or commercial occupants. The TAMP site is developed with buildings and most of the property is covered in either concrete or asphalt pavement. Approximately 2 acres in the eastern portion of the site are maintained grass-covered lawn with a few trees and shrubs. Current potential receptors would include trespassers and periodic site construction workers. Future use of TAMP could include exposure receptors by on-site workers, construction workers, and trespassers to environmental media that include soil and standing water in the subterranean tunnels. In consideration of future use, the TAMP may also be re-developed for residential purposes. Therefore, residential exposure to soil was considered a complete pathway. With volatile organic compounds (VOCs) present in groundwater, exposure to soil vapors that could migrate into indoor air was also considered a completed pathway. However, the TAMP property is serviced by municipal water and there are no known water supply wells on-site. Therefore, groundwater is not available for use as a potable source and ingestion of groundwater was not considered a complete pathway for exposure in the CSEM. The CSEM for complete on-site exposure pathways at the TAMP is included as **Exhibit 3**. Please note that the

NCDEQ Risk Calculator is used to assess risk. The Risk Calculator has limits for complete exposure pathways (e.g., only soil is considered a complete pathway for construction workers). Therefore, if an exposure pathway for a specific receptor is not included in the July 2022 Risk Calculator, then that pathway was not marked complete in **Exhibit 3**.

Potential Off-Site Exposure Scenarios

The area surrounding TAMP (off-site conditions) includes residential, commercial, and light industrial properties. An intermittent stream, which is an unnamed tributary of Service Creek, lies approximately 220 feet west of the TAMP facility. This unnamed intermittent stream is classified as a R4SBC surface water body by the National Wetlands Inventory (NWI). According to the NWI, an R4SBC surface water body is an intermittent stream where surface water is present for extended periods especially early in the growing season but is absent by the end of the growing season in most years. The water table after flooding ceases is variable, extending from saturated to the surface to a water table below the ground surface. This unnamed intermittent stream channels surface water runoff through a residential urban area northward for approximately 2,200 feet where this intermittent stream confluences with an unnamed perennial stream that is a tributary to Service Creek.

Service Creek (Stream Index 16-15) is classified as Class WS-V waters, which are protected as water supplies and are generally upstream of and drain to Class WS-IV waters or waters used by industry to supply their employees with drinking water or as waters formerly used as water supply. Service Creek is also classified as a Nutrient Sensitive Water (NSW) needing additional nutrient management due to being subject to excessive growths of microscopic or macroscopic vegetation. These waters are also protected for Class C uses. Class C waters are waters protected for uses such as aquatic life propagation, survival and maintenance of biological integrity (including fishing and fish), wildlife, secondary contact recreation, and agriculture. Secondary contact recreation includes wading, boating, other uses not involving human body contact with water, and activities involving human body contact with water where such activities take place on an infrequent, unorganized, or incidental basis. Both the unnamed intermittent stream and Service Creek flow through urban land, which is accessible to the general population. Service Creek eventually flows into the Haw River (Stream Index 16-(10.5)) in the Cape Fear River Basin, which is approximately 2.08 miles downstream of the TAMP facility.

The unnamed tributary to Service Creek in the vicinity of the site is a shallow, intermittent stream that typically only contains <1 to 6 inches of water, although small pools of water are present in certain areas (.g., near culverts and outfalls) that are deeper than 6 inches. As a result, neither sustenance fishing nor secondary recreation (e.g., knee-high wading, boating) are realistic exposure scenarios. As a conservative assumption, off-site exposures in the HHRA includes contact with surface water for the recreation/trespasser receptor category.

With off-site groundwater impacted by VOCs, those compounds could potentially migrate from groundwater to soil gas and eventually into indoor air. Therefore, vapor intrusion into indoor air was considered a possible pathway for exposure. However, passive soil gas vapor sample results at off-site locations in the area of groundwater contaminant plume had no reported detections of VOCs except for toluene and total petroleum hydrocarbons (TPH). The Vapor Intrusion Screening Level (VISL) for toluene is 34,762 micrograms per cubic meter ($\mu g/m^3$) for residential exposure, whereas toluene was reported in a single soil gas sample that was collected in the 2022 RI at a concentration of 15.8 $\mu g/m^3$. Given these data, the groundwater to vapor intrusion air pathway presents a high level of uncertainty and the use of the NCDEQ VISL for VOCs is considered extremely conservative.

The off-site urbanized area is also serviced by municipal water and there are no known water supply wells in the surrounding area. Therefore, groundwater is not available for use as a potable source and ingestion of groundwater was not considered a complete pathway for exposure in the CSEM. The CSEM for off-site exposures is presented in **Exhibit 3**.

Chemicals of Potential Concern Selection

The data Terracon used for this HHRA were from the 2022 RI activities. These data were validated following Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) (February 2022), Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3, and method requirements (Section 3.11 of the 2022 RI Report [Terracon 2022)]).

The HHRA process consists of compiling and evaluating the data to select the COPCs. These chemicals included eight metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), VOCs by USEPA Method SW8260D, and semi-VOCs (SVOCs) by USEPA Method SW8270E. The objective of this evaluation was to identify the most toxic, persistent, and prevalent COPCs at TAMP expected to contribute the majority of potential exposure and risk, consistent with NCDEQ (2021a) and USEPA (1989) guidance. COPC identification constitutes a conservative, health-based screening valuation. Under USEPA (1989) guidelines, the COPCs can be identified based on criteria such as frequency of detection, toxicity, comparison with background concentrations (metals only), or whether a constituent can be considered a common laboratory contaminant (e.g., acetone, 2-butanone, methylene chloride, carbon tetrachloride, and/or phthalates).

Based on the 2022 sampling events of groundwater, surface water, soil and soil-gas as presented in Tables 3 through 9 in the 2022 RI Report (Terracon 2022), the COPC were selected and/or excluded based on the following criteria:

- For frequency, if a metal, VOC, or SVOC was identified detected above the analytical detection limit (DL) only once for any environmental media, it was excluded from selection as a COPC.
- For a conservative perspective, all analytes (metals, VOCs, and SVOCs) were deemed to have some level of toxicity based on published state or federal screening level or standard.
- If a metal or compound concentration did not exceed a screening level, then that metal or compound was excluded from selection as a COPC.
- For consideration of background levels of metals only, off-site soil samples were collected and analyzed to represent a range of naturally occurring metals (Table 4 of the 2022 RI Report [Terracon 2022]).
- If on-site soil concentrations for a particular metal were comparable to off-site soil concentrations, that metal was exclude from selection as a COPC. No background samples for metals in groundwater were included in the selection for a COPC.
- If a metal concentration in groundwater exceeded the North Carolina groundwater quality standard more than once in the dataset, that metal was included as a COPC.
- Common laboratory contaminants were also considered inclusion or exclusion as a COPC.

As a conservative approach for this HHRA, the maximum concentrations reported for each environmental media for on-site and off-site samples were used for this risk evaluation. **Tables 1-7** present the selected COPCs and the maximum concentration values for the selected COPCs.

Toxicity Assessment

The toxicity assessment describes the relationships between the administered and/or the absorbed dose of a constituent and the magnitude or likelihood of adverse health effects (USEPA, 1989). Toxicity values for potential non-carcinogenic and carcinogenic effects are embedded in NCDEQ's July 2022 Risk Calculator. Sources for these toxicity values include:

- USEPA's Integrated Risk Information System (http://www.epa.gov/iris/);
- The Provisional Peer Reviewed Toxicity Values (PPRTV) and cited references developed for the USEPA OSWER Office of Superfund Remediation and Technology Innovation (OSRTI) programs; and the
- Toxicity values from the Agency for Toxic Substances and Disease Registry (2019).

The "other" level of the hierarchy includes several sources of toxicity values that are commonly referenced by the USEPA Superfund program when a relevant toxicity value is not available from either IRIS or the PPRTV database. They include:

- California Environmental Protection Agency (Cal EPA) toxicity values, available on Cal EPA's internet website at http://www.oehha.ca.gov/risk/chemicalDB/index.asp;
- The Agency for Toxic Substances and Disease Registry (ATSDR) Minimal Risk Levels (MRLs, addressing noncancer effects only), available on ATSDR's internet website at https://www.atsdr.cdc.gov/mrls/index.html;
- The USEPA Superfund Health Effects Assessment Summary Tables (HEAST) database and cited references; and
- Additional sources of toxicity values (i.e., peer-reviewed literature).

Non-Carcinogenic Effects

For non-carcinogenic contaminants, the measure used to describe the potential for non-carcinogenic toxicity in an individual is not expressed as a probability. Instead, the potential for effects is evaluated by comparing an exposure level over a specified time period (e.g., lifetime) with a reference dose (RfD) derived for a similar exposure period. This ratio of predicted exposure to acceptable exposure levels is called the Health Effects Assessment Summary Tables (HEAST) hazard quotient (HQ) (USEPA 2001). If contaminants of concern are known to have the same target organ (e.g., liver, kidney), the HQs for those contaminants must be added to form a Hazard Index (HI). This HI must be below one (1.0) to assume no adverse health effects on the target organ.

In the development of a RfD, the upper bound of the human tolerance range must first be identified or estimated. Called the threshold, this upper bound represents a level that, if exceeded, could cause the protective mechanisms that exist in the body to be overcome and an adverse effect could occur. Next, based on a "subthreshold" level, the "no observed adverse effect level" (NOAEL) is identified. The NOAEL is then divided by one or more uncertainty factors (usually multiples of ten) to account for such things as sensitive sub-populations and extrapolation from animal studies to humans. The reference concentration (RfC) is a comparable level that represents an air concentration designed to be protective of human health. RfDs and RfCs are generally calculated by determining the highest dose at which there are no observed adverse health effects (NOAEL), and by adjusting this dose using a series of uncertainty factors (UFs) and modifying factors (MFs). The UFs conservatively account for

the variation in sensitivity within the human population and the uncertainty in extrapolating from animals to humans.

Carcinogenic Effects

For carcinogens, risks are estimated as the probability of an individual developing cancer over a lifetime as a result of exposure to a contaminant. A risk evaluation based on the presumption of a threshold is inappropriate for carcinogens. The underlying presumption for carcinogens is that the introduction of even one molecule of the contaminant can cause cancer in an individual even if the probability is very low. This conservative "non-threshold" concept is used because it is presumed that there is no level of exposure to a carcinogen that does not pose a certain level of risk. Because the threshold concept is not acceptable for carcinogens, a value different from a RfD that quantifies the relationship between dose and response must be developed. This value is known as a slope factor (SF), and it converts daily intakes of a carcinogen averaged over a lifetime directly to the upper bound risk of an individual developing cancer. That is, the risk is equal to a chronic daily intake (CDI) averaged over 70 years (lifetime) multiplied by the SF. The SF is derived through the plotting of a curve that compares dose to response. Statistical procedures usually calculate the SF as the upper 95 percent confidence limit of the slope of the dose-response curve (i.e., there is only a 5% chance that the cancer risk could be greater). Because this is the upper bound risk, the actual risk is between that value and zero. The SF is roughly equivalent to the risk per unit dose, expressed as (mg/kg/d). As with the RfD, the SF is provided by the USEPA (USEPA, 2022).

The risk of cancer due to exposure to a contaminant is commonly expressed in exponential terms, e.g., 10^{-6} and 10^{-4}. These terms equate to a risk of 1 in 1,000,000 and 1 in 10,000, respectively. Using benzene as an example, the risk estimate of 1.5×10^{-5} means that 1.5 additional cases of cancer above background might occur among 100,000 exposed persons (or 15 cases in 1,000,000 persons) as a result of benzene exposure. The background cancer rate is 1 in 3, meaning that over a lifetime, an American's probability of getting cancer is 0.333333. Adding a 10^{-6} risk would increase the probability of an individual getting cancer to 0.333334. With the addition of a 10^{-4} risk to the background rate, the probability of an individual getting cancer would be 0.333433.

Uncertainty Analysis

HHRAs have inherent uncertainties that are not fully probabilistic estimates of risk, but conditional estimates given a considerable number of assumptions about exposure and toxicity (USEPA, 1989). The approach of this HHRA is highly conservative in the use of assumptions and default values used in the NCDEQ Risk Calculator (NCDEQ, July 2022). The assumption that the maximum concentrations are the end exposure point in lieu of statistically-derived values (e.g., the 95% upper confidence limit) in various environmental media adds to conservative projections of risk.

Additional non-conservative estimates include chemicals that were not included in the quantitative risk estimate as a consequence of a dearth of information on health effects, lack of quantitation, not fully defining the extent of contamination in various environmental media, and lack of quantitative fate and transport models. This may artificially skew the overall risk calculations at the TAMP. One example of high uncertainty is associated with the transport pathway of CPOCs in groundwater to vapor intrusion, as off-site data indicated that soil gas contains volatile constituents that does not reflect the constituents reported to be in groundwater. Additional uncertainties could be introduced when defining exposure assumptions and formulating professional judgments.

NCDEQ Risk Calculator

The selected COPC and the corresponding maximum reported concentrations were entered into the NCDEQ Risk Calculator (version July 2022) and the appropriate complete exposure pathways for COPC were selected. The output forms from the NCDEQ Risk Calculator are provided in Attachment A.

On-Site Exposures

Using the maximum detected on-site concentrations of each environmental media, the risks and hazards for future residents, non-residential workers, construction workers, and the recreator/trespassers were determined to be above NCDEQ benchmarks for both the hazard index and carcinogenic risk for direct contact with soil and the surface water in the subterranean tunnels. For future residents and non-residential workers, both the non-carcinogenic and carcinogenic risks exceeded NCDEQ benchmarks. TCE appears to be driving both non-carcinogenic and carcinogenic risks for direct contact with soil for future residents, non-residential workers, construction workers, and the recreator/trespasser. TCE also seems to be the driver for non-carcinogenic risks to the trespasser coming in contact with the water in the subterranean tunnels through accidental ingestion and dermal contact. For vapor intrusion estimates based on groundwater concentrations, both the non-carcinogenic and carcinogenic risks appear to be driven by benzene, tetrachloroethene (PCE), trichloroethylene, and vinyl chloride for the future resident and non-residential worker.

Off-Site Exposures

Using the maximum detected off-site concentrations identified in the unnamed intermittent stream for exposure to surface water, the risk calculator determined that the non-carcinogenic risk for the recreator/trespasser was exceeded. The COPC that appear to be driving the non-carcinogenic risk are PCE and TCE. Vapor intrusion from groundwater-to-indoor air projections also exceeded both non-carcinogenic and carcinogenic risks for a resident. Vapor intrusion projections exceeded the non-carcinogenic risk for the non-residential worker. TCE seems to be the driver for carcinogenic risk and non-carcinogenic risk. PCE also is just above 1.0 HQ for non-carcinogenic risk. Toluene and TPH detected in the soil gas, which were not selected as COPCs, did not present a risk to human health for the soil gas to indoor air pathway. . No COPCs were reported in off-site soil gas samples, albeit the NCDEQ Risk Calculator projects a conservative transport mechanism of COPCs from groundwater to indoor air to exceed carcinogenic and non-carcinogenic risks. These estimates are extremely conservate and are considered highly uncertain as the off-site TAMP soil vapor data indicate that exposure to selected COPCs does not likely exist off-site.

HHRA Conclusions

The HHRA findings indicated that COPC, mainly TCE and PCE, have potential to cause non-carcinogenic and carcinogenic risks to the on-site and off-site populations based on highly conservative assumptions. The exposure pathways that presents the most concern are on-site exposure to contaminated soil and off-site exposure to surface water, relative to the other pathways. Extremely conservative risk estimates is the risk associated with the exposure pathway via vapor intrusion based on groundwater quality data both on-site and off-site. However, empirical data indicate that this exposure pathway is not likely to be present off-site.

SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT

Arcadis (2020) completed a SLERA in 2020, as reported in the *Draft Remedial Investigation Report* dated April 2020. In the SLERA, Arcadis concluded that the "potential risks were characterized for ecological receptors at the site by considering direct contact with and uptake by COPCs in soil (0 to 5 ft bgs) and off-site surface water. Based on this assessment, potential ecological risks at the site and in off-site surface water are considered negligible, and no further evaluation is required at TAMP."

Terracon's SLERA update presents a revised evaluation of risks to the ecology in the area impacted by COPCs at the TAMP using the 2022 RI dataset. This SLERA update provides a conservative estimate of the potential for ecological risk (or lack thereof). The SLERA process involves estimating the likelihood that a particular ecological risk exists or focuses on site-specific ecological risk assessments, where warranted. This SLERA was completed following NCDEQ's (formerly the North Carolina Department of Environment and Natural Resources or NCDENR) *Guidelines for Performing Screening Level Ecological Risk Assessments Within The North Carolina Division of Waste Manager* (October 2003). The SLERA is an eight-step process which includes the following information:

- Ecological setting
- Fate and transport mechanisms
- Potentially complete pathways
- Data collection and evaluation
- Abiotic screen
- Uncertainty and data gaps
- Scientific/management decision point
- SLERA summary

Ecological Setting

The environmental setting for the TAMP (on-site and off-site) was described in the previous section (Conceptual Site Exposure Models). In summary, the TAMP is located within the Piedmont ecoregion. The Piedmont ecoregion comprises a transitional area between the mostly mountainous ecoregions of the Appalachians to the northwest and the relatively flat coastal plain to the southeast. Much of this region has reverted to successional pine and hardwood woodlands, with an increasing conversion to an urban and suburban land cover. The TAMP site is developed except for approximately 2 acres in the eastern portion of the property, which contains an ecological urban habitat consisting of maintained grass lawn, a few mature oak and pine trees, and shrubs. This area is not known to have contaminated media that would be available receptors.

The primary concern for the SLERA for TAMP were from off-site media, specifically surface water. An unnamed intermittent stream flows north through the urban setting and drains surface runoff in the vicinity of the site. This stream eventually flows to an unnamed perennial stream that discharges into Service Creek approximately 2,200 feet to the north. Service Creek travels east until its confluence with the Haw River. These streams are within the Cape Fear drainage basin and are classified as Water Supply V and Nutrient Sensitive Waters.

Because the stream is intermittent, it provides only marginal habitat for aquatic life (i.e., fish and benthic invertebrates) in the initial flow from the site northward as VOCs attenuate along the stream's flow path (Arcadis 2020). However, exposure pathways involving groundwater and surface water were considered complete and these media were identified as media of concern for off-site ecological receptors.

Potential exposure receptors include typical species associated with the Piedmont riverine aquatic habitat include the following (N.C. Natural Heritage Program, 2001):

Group	Scientific Name	Common Name	State status (Federal Status)
Amphibians	*Eurycea guttolineata*	Three-lined Salamander	Not listed
Reptiles	*Apalone spinifera aspera*	Gulf Coast Spiny Softshell Turtle	Not listed
	Farancia abacura abacura	Eastern Mudsnake	Not listed
	Kinosternon baurii	Striped Mud Turtle	Not listed
	Thamnophis sauritus sauritus	Common Ribbonsnake	Not listed
Invertebrates	*Cambarus bartoni*	Freshwater Crayfish	Not listed
	Multiple species	Freshwater snails	

Other potentially exposed receptors include terrestrial wildlife (i.e., mammals and birds), soil invertebrates, and aquatic life (i.e., fish and epifaunal invertebrates). Arcadis 2020 cited that no threatened or endangered species were identified at the TAMP site and that the habitat was unsuitable for support of threatened or endangered species.

Fate and Transport Mechanisms

VOCs have been reported in surface water samples collected from stream stations located along the unnamed intermittent stream located west of the TAMP (Exhibit 2). The chemicals of potential ecological concern (COPECs) were selected based on whether the reported concentration of a VOC exceeded one of three criteria: North Carolina's water quality standard (15A NCAC 2B); USEPA National Recommended Water Quality Criteria for Aquatic Life & Human Health (NRWQC); and/or North Carolina's In-Stream Target Values for Surface Waters (ISTV). The VOCs that exceeded these criteria in one or more stream samples included PCE, TCE, and vinyl chloride. **Table 1** provides a summary of the VOCs that exceeded their respective criteria in surface water.

The transport of VOCs through the groundwater to surface water transport pathway has caused COPEC impacts to the unnamed intermittent stream located approximately 220 feet west of TAMP. Because the COPECs (e.g., PCE, TCE, and vinyl chloride) are volatile, they attenuate in surface water quickly through dilution and evaporation. The COPECs in the unnamed intermittent stream presents a potential exposure for flora and fauna beyond the TAMP site.

Potentially Complete Pathways

Because the TAMP is an industrial setting, ecological exposure pathways are not present on the TAMP property, and access by fauna to contaminated soil and groundwater is not feasible as the areas of soil impacted by COPEC are paved with concrete and/or asphalt. The documented conditions in the intermittent stream located approximately 220 feet west of the TAMP facility represent a complete pathway for exposure of VOCs via surface water (**Exhibit 2**). Groundwater specifically is considered

only for the potential of seeping into surface water along the intermittent stream. The CSEM (**Exhibit 3)** shows a direct update exposure pathway for aquatic flora and fauna that may be present in the intermittent stream. The VOCs identified as COPECs include PCE, TCE, and vinyl chloride.

Data Collection and Evaluation

The data Terracon collected during the 2022 RI activities have been validated and are presented in the RI Report in Section 4.0 Remediation Investigation Results. Specifically, for this SLERA, the sample results from the intermittent stream are summarized in Section 4.3 Surface Water Sample Results. In 2022, three sampling events were completed and the highest concentrations were selected for this evaluation. The HQ is the ratio of the exposure point concentration (EPC) of a given constituent to its ecotoxicity screening values (ESVs). EPCs in the SLERA are identified as the maximum detected concentrations of constituents reported in the 2022 RI. The maximum reported concentrations for the three COPECs are:

- PCE 38 micrograms per liter (µg/L)
- TCE 44 µg/L
- Vinyl Chloride 0.69 µg/L

The ESV for these COPECs were obtained from the USEPA Region 4, Surface Water Screening Values for Hazardous Waste Sites (EPA 2018), which represent a protective benchmark (e.g., water quality criteria guidelines). These ESVs are not intended to serve as cleanup levels but are intended to function as screening levels (USEPA 2003). The following chronic and acute ESV values for surface water were used:

	Chronic	**Acute**
PCE	332 µg/L	1,269 µg/L
TCE	763 µg/L	2,916 µg/L
Vinyl Chloride	482 µg/L	1,178 µg/L

The maximum concentrations for each COPEC were at least an order of magnitude or more below the bench ESV benchmark values for both chronic and acute exposure scenarios. Therefore, no further evaluation is warranted for PCE, TCE, and vinyl chloride in surface water with respect to ecological effects.

Uncertainties and Data Gaps

There were a limited number of samples collected in 2022 for use in this SLERA. The low number of datapoints do not allow for a robust statistical evaluation of the actual exposure point concentrations. By using the maximum concentrations presented in the dataset, the exposure and associated risks represent an overestimation. In addition to the use of maximum concentrations used, the SLERA does not account for environmental fate and transport of the COPECs in surface water.

Concentrations of PCE, TCE, and vinyl chloride in the unnamed tributary extended approximately 800 feet (or 0.15 miles) north of Hilton Road (i.e., slightly north of Vaughn Road) where the VOC concentrations are reduced to less than laboratory detection limits due natural processes (e.g., volatilization, biodegradation, dilution, *in situ* hydrolysis. Therefore, the use of a single, non-statistical concentration value presents an overestimation of exposure and risk due to concentration reductions in along the reach of the intermittent tributary.

SCIENTIFIC/MANAGEMENT DECISION POINT

The scientific/management decision point (SMDP) establishes where risk management decision-making occurs. The following decisions are considered at this SMDP:

- Whether the selection of COPECs, assessments of habitats, and the identification of environmental media of potential concern are sufficient to conclude that ecological risks are negligible and that remediation to mitigate ecological risks are not required.
- Whether receptors and exposure pathways have been sufficiently considered.
- Whether the information used in this SLERA indicates a potential for adverse ecological effects and a baseline environmental risk assessment should be conducted.

As described above, the SLERA identified the off-site ecological receptor, which include the fauna in the surface water of the unnamed intermittent stream west of the TAMP site, and three COPECs: TCE, PCE, and vinyl chloride. By comparing the maximum concentration of each COPEC to its respective ESV, the maximum concentration for each COPEC is well below its respective ESV; therefore, the risk to aquatic life in the unnamed intermittent stream is considered acceptable.

SLERA Summary

Based on the SMDP presented in this SLERA and the projections of over conservative assumptions used to conclude the outcome of the SMDP, there is adequate information to conclude that ecological risks at TAMP are negligible, and furthermore, a baseline ecological risk assessment is not warranted.

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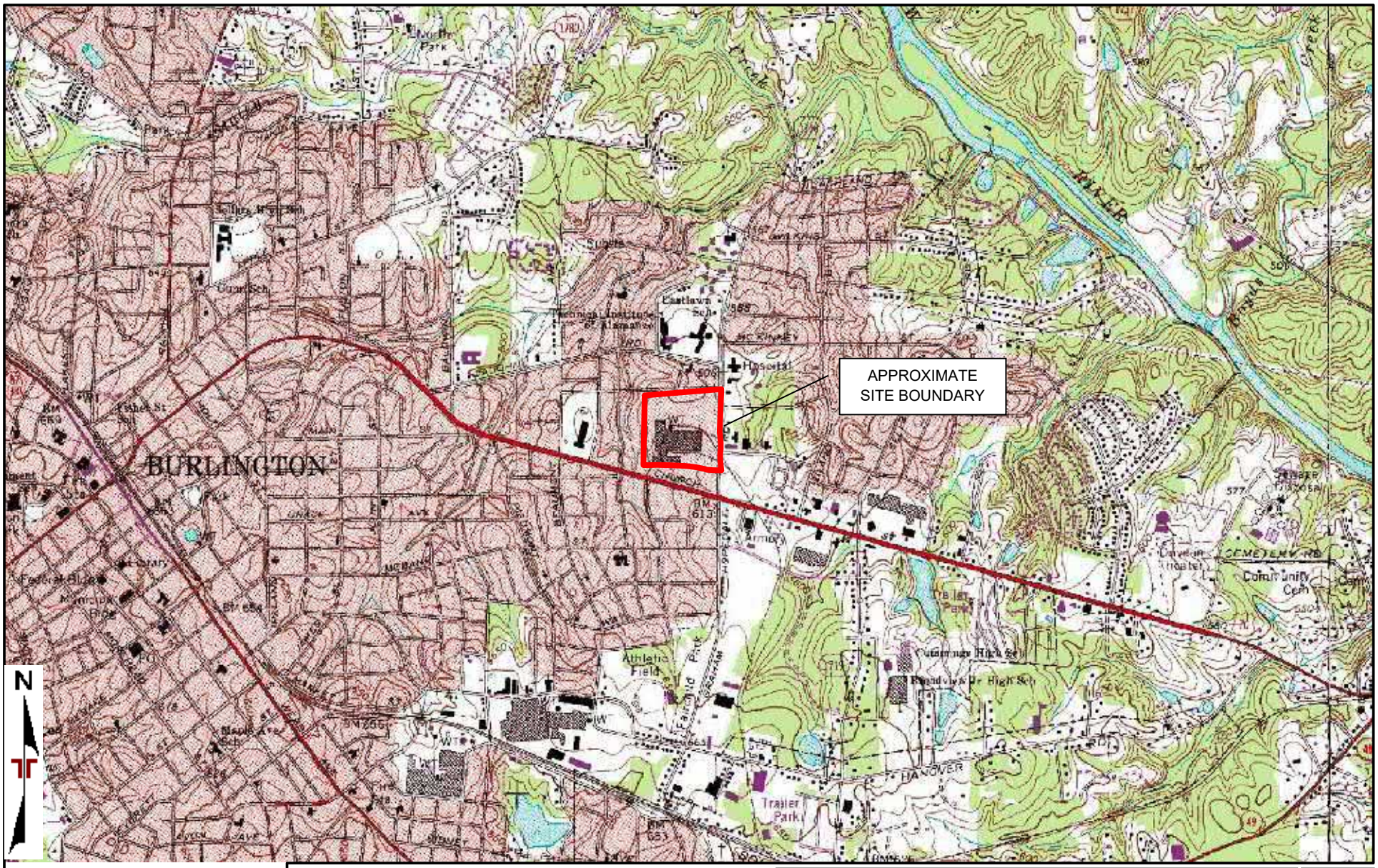
EXHIBITS



TOPOGRAPHIC MAP IMAGE COURTESY OF THE U.S. GEOLOGICAL SURVEY QUADRANGLES INCLUDE: BURLINGTON, NC (1/1/1981) and MEBANE, NC (1/1/1994).

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	DM
Drawn by:	FD
Checked by:	LF
Approved by:	DM

Project No.	7521P145
Scale:	1"=2,000'
File Name:	EXHIBITS
Date:	09DEC22

Terracon

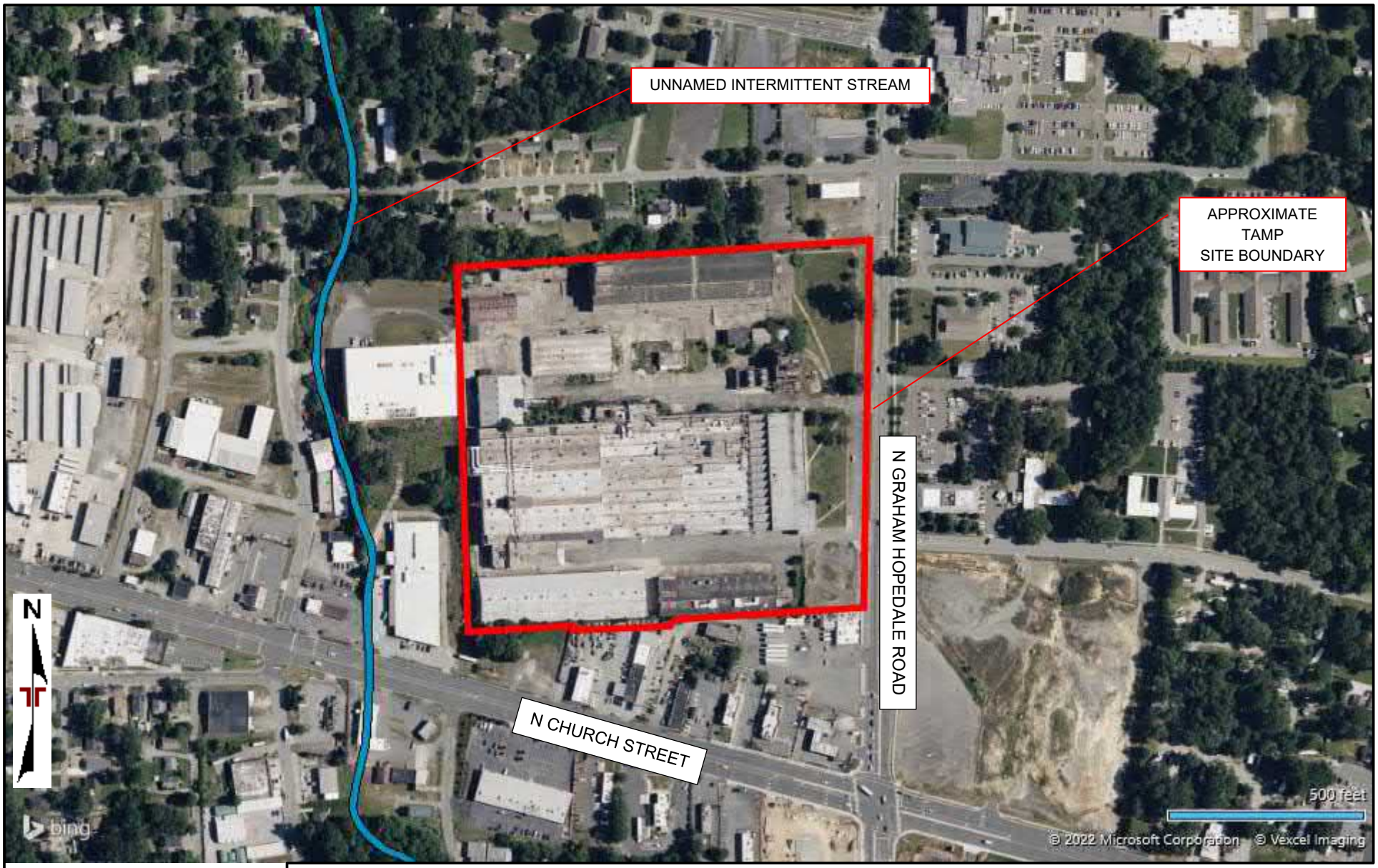
7327 W Friendly Ave Ste G
Greensboro, NC 27410-6253

TOPOGRAPHIC MAP

Tarheel Army Missile Plant
204 N. Graham Hopedale Road
Burlington, NC

Exhibit

1



AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager: DM	Project No. 7521P145
Drawn by: ED	Scale: AS SHOWN
Checked by: LE	File Name: EXHIBITS
Approved by: DM	Date: 09DEC22

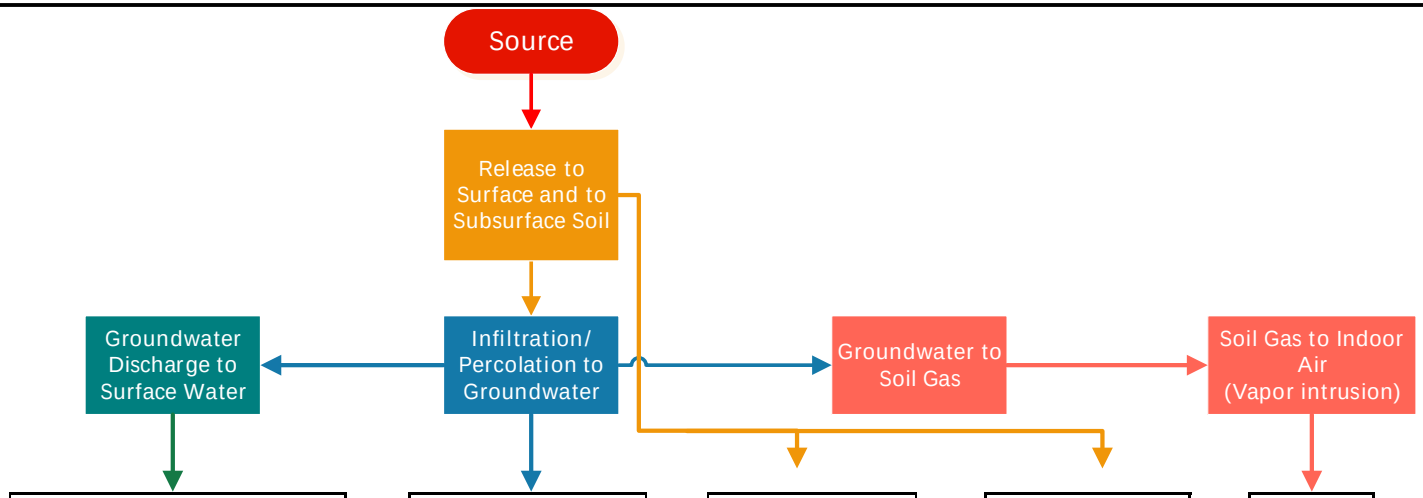
Terracon
7327 W Friendly Ave Ste G
Greensboro, NC 27410-6253

SITE DIAGRAM

Tarheel Army Missile Plant
204 N. Graham Hopedale Road
Burlington, NC

Exhibit

2



	ON-SITE & OFF-SITE Surface Water				ON-SITE & OFF-SITE Groundwater			ON-SITE Surface and Subsurface Soil			OFF-SITE Surface and Subsurface Soil			ON-SITE & OFF-SITE Indoor Air
	Ingestion	Dermal Contact	Inhalation	Direct Uptake (SLERA)	Ingestion	Dermal Contact	Inhalation	Ingestion	Dermal Contact	Inhalation	Ingestion	Dermal Contact	Inhalation	Inhalation
Resident (Adult-Child)	NA	NA	NA	NA	NA	NA	NA	X	X	X	NA	NA	NA	X
Non Resident Worker	NA	NA	NA	NA	NA	NA	NA	X	X	X	NA	NA	NA	X
Construction Worker	NA	NA	NA	NA	NA	NA	NA	X	X	X	NA	NA	NA	NA
Recreator/Trespasser	X	X	NA	X	NA	NA	NA	X	X	X	NA	NA	NA	NA

LEGEND:

NA = PATHWAY NOT APPLICABLE

X = POTENTIALLY COMPLETE PLATHWAY

Project Manager:	DM
Drawn by:	EW
Checked by:	LE
Approved by:	DM
Project No.	7521P145
Scale:	1"=2,000'
File Name:	EXIBITS
Date:	09DEC22

Terracon
7327 W Friendly Ave Ste G
Greensboro, NC 27410-6253

CONCEPTUAL SITE EXPOSURE MODEL

Tarheel Army Missile Plant
204 N. Graham Hopedale Road
Burlington, NC

Exhibit

3

TABLES

Table 1
Sorted Maximum Concentrations
From Analytical Results of Surface Water Samples

COPC	Unit	2B Standard	EPA NRWQC	NC ISTV	Max	N
Tetrachloroethylene	ug/l	**0.7**	**NE**	**120**	38	18
Trichloroethylene	ug/l	**2.5**	**NE**	**NE**	44	20
Vinyl Chloride	ug/l	**0.025**	**NE**	**NE**	0.69	2

Notes:

2B Standard = Subtitle 15A North Carolina Administrative Code (NCAC) 02B Surface Water and Wetland Standards. Effective Date September 1, 2022.

USEPA = United States Environmental Protection Agency.

NRWQC = Nationally Recommended Water Quality Criteria (https://deq.nc.gov/ncstdstable07262021).

NC ISTV = North Carolina In-Stream Target Values for Surface Waters (https://deq.nc.gov/ncstdstable07262021).

ug/L = Microgram per liter.

NE = Standard not established.

Shaded values (if present) exceeded the referenced standard.

Sample Dates From 2017-2022

COPC = Contaminant of Concern

Max = Maximum Concentration

N = Number of Samples Considered

Table 2
Sorted Maximum Concentrations
From Analytical Results of Background Soil Samples

COPC	Unit	PSRG - GW Protection	PSRG Res	PSRG Ind	Max	N
SW6020						
Arsenic	mg/kg	**5.84**	**0.677**	**3**	2.70	9
Barium	mg/kg	**577**	**3130**	**46600**	100	9
Cadmium	mg/kg				0.12	4
Chromium	mg/kg				38	9
Lead	mg/kg	**270**			10	9
Selenium	mg/kg	**2.08**	**78.2**	**1170**	2.70	9
Silver	mg/kg	**3.4**	**78.2**	**1170**	ND	

Notes:
Sample Dates From 2017-2022
COPC = Contaminant of Concern
Max = Maximum Concentration
N = Number of Samples Considered
mg/kg = milligrams per kilogram
PSRG = NCDEQ Preliminary Soil Remediation Goals (July 2022)
NCDEQ = North Carolina Department of Environmental Quality
GW = Protection of Groundwater PSRG
Res = Residential Halth Based PSRG
Ind = Industrial/Commercial Health Based PSRG
SW6020 = Laboratory Method
ND = Not Detected / Below Laboratory Detection Methods

Table 3
Sorted Maximum Concentrations
From Analytical Results of Soil Samples

COPC	Unit	PSRG - GW Protection	PSRG Res	PSRG Ind	MAX	N
SW8260D						
Tetrachloroethylene	mg/kg	**0.00634**	**17.1**	**82.4**	**0.680**	10
Trichloroethylene	mg/kg	**0.0214**	**0.871**	**3.98**	**6900**	39
Vinyl Chloride	mg/kg	**0.000205**	**0.0605**	**1.74**	**0.060**	9
SW8270E						
Benzo(a)anthracene	mg/kg	**0.354**	**1.13**	**20.6**	**2.10**	16
Benzo(a)pyrene	mg/kg	**0.118**	**0.115**	**2.11**	**2.5**	16
Benzo(b)fluoranthene	mg/kg	**1.2**	**1.15**	**21.1**	**2.80**	17

Notes:
Sample Dates From 2017-2022
COPC = Contaminant of Concern
Max = Maximum Concentration
N = Number of Samples Considered
mg/kg = milligrams per kilogram
PSRG = NCDEQ Preliminary Soil Remediation Goals (July 2022)
NCDEQ = North Carolina Department of Environmental Quality
GW = Protection of Groundwater PSRG
Res = Residential Halth Based PSRG
Ind = Industrial/Commercial Health Based PSRG
SW8260D & SW8270E = Laboratory Methods

Table 4
Sorted Maximum Concentrations
From Analytical Results of Water Samples from Tunnels

					Sample Location	TUNNEL N-01	TUNNEL S-02		
					Sample Date	7/21/2022	7/21/2022		
COPC	**Unit**	**2B Standard**	**EPA NRWQC**	**NC ISTV**	**NC 2L Standard**			**Max**	**N**
Tetrachloroethylene	ug/l	**0.7**			**0.7**	**19**	**5**	19	2
Trichloroethylene	ug/l	**2.5**			**3**	**120**	**33**	120	2

Notes:
COPC = Contaminant of Concern
MAX = Maximum Concentration
N = Number of Samples Considered
ug/l = Micrograms per liter
2B Standard = 15A NCAC .02B Surface Water Quality Standards
EPA = US Environmental Protection Agency
NRWQC = EPA Nathional Recommended Water Quality Criteria
NC = North Carolina
ISTV = In-Stream Target Values for Surface Waters, Established per language in 15A NCAC 02B .0202 & .0208
2L Standard = 15A NCAC .02L Groundwater Standards

Table 5
Sorted Maximum Concentrations
From Analytical Results of Groundwater Grab Samples

COPC	Unit	2L Standard	Max	N
SW8260D				
1,1-Dichloroethane	ug/l	6	**14**	5
1,2-Dichloroethane	ug/l	0.4	**3.2**	3
Cis-1,2-Dichloroethene	ug/l	70	**180**	4
Tetrachloroethylene	ug/l	0.7	**65**	5
Trichloroethylene	ug/l	3	**180**	7
Vinyl Chloride	ug/l	0.030	**5.9**	2

Notes:
Sample Dates From 2017-2022
COPC = Contaminant of Concern
MAX = Maximum Concentration
N = Number of Samples Considered
ug/l = Micrograms per liter
2L Standard = 15A NCAC .02L Groundwater Standards
SW8260D = Laboratory Method

Table 6
Sorted Maximum Concentrations
From Analytical Results of Groundwater Samples
from Off-Site Monitoring Wells

COPC	Unit	2L Standard	MAX	N
SW8260D				
1,1-Dichloroethane	ug/l	6	8.30	6
1,2-Dichloroethane	ug/l	0.4	4.20	5
Cis-1,2-Dichloroethene	ug/l	70	87	10
Tetrachloroethylene	ug/l	0.7	77	7
Trichloroethylene	ug/l	3	260	12

Notes:
Sample Dates From 2017-2022
COPC = Contaminant of Concern
MAX = Maximum Concentration
N = Number of Samples Considered
ug/l = Micrograms per liter
2L Standard = 15A NCAC .02L Groundwater Standards
SW8260D = Laboratory Method

Table 7
Sorted Maximum Concentrations
Analytical Results of Groundwater Samples
from On-Site Monitoring Wells

COPC	Unit	2L Standard	MAX	N
SW6020				
Barium	ug/l	700	5900	22
Cadmium	ug/l	2	4.70	11
Chromium	ug/l	10	79	12
SW8260D				
1,1-Dichloroethane	ug/l	6	10	6
1,2-Dichloroethane	ug/l	0.4	1.6	2
Benzene	ug/l	1	260	6
Cis-1,2-Dichloroethene	ug/l	70	3600	19
Methyl Tert-Butyl Ether (MTBE)	ug/l	20	180	7
Tetrachloroethylene	ug/l	0.7	9000	14
Trichloroethylene	ug/l	3	5100	19
Vinyl Chloride	ug/l	0.03	310	8
SW8270E				
Naphthalene	ug/l	6	20	3

Notes:
Sample Dates From 2017-2022
COPC = Contaminant of Concern
MAX = Maximum Concentration
N = Number of Samples Considered
ug/l = Micrograms per liter
2L Standard = 15A NCAC .02L Groundwater Standards
SW6020, SW8260D, SW8270E = Laboratory Methods

ATTACHMENT A
NCDEQ Risk Calculator Outputs – On Site

North Carolina Department of Environmental Quality
Risk Calculator

Version Date:	July 2022
Basis:	May 2022 EPA RSL Table
Site Name:	Tar Heel Army Missile Plant
Site Address:	Burlington, NC
DEQ Section:	
Site ID:	USEPA ID: NC7210020544
Exposure Unit ID:	On-Site
Submittal Date:	
Prepared By:	Laura Elliott
Reviewed By:	Ed Woloszyn

Table of Contents **TOC**

Version Date: July 2022
Basis: May 2022 EPA RSL Table

Site ID: USEPA ID: NC7210020544

Exposure Unit ID: On-Site

Form No.	Description	Check box if included
	DATA INPUT SHEETS	
	Input Section 1 - Exposure Pathways & Parameters	
Input Form 1A	Complete Exposure Pathways	☑
Input Form 1B	Exposure Factors and Target Risks	☑
Input Form 1C	Contaminant Migration Parameters	☑
Input Form 1D	Sample Statistics	☐
	Input Section 2 - Exposure Point Concentrations	
Input Form 2A	Soil Exposure Point Concentration Table	☑
Input Form 2B	Groundwater Exposure Point Concentration Table	☑
Input Form 2C	Surface Water Exposure Point Concentration Table	☑
Input Form 2D	Soil Gas Exposure Point Concentration Table	☑
Input Form 2E	Indoor Air Exposure Point Concentration Table	☐
	DATA OUTPUT SHEETS	
	Output Section 1 - Summary Output for All Calculators	
Output Form 1A	Risk for Individual Pathways	☑
Output Form 1B	Sitewide Risk	☑
	Output Section 2 - Direct Contact Soil and Groundwater Calculators	
Output Form 2A	Resident Soil	☐
Output Form 2B	Resident Groundwater Use	☐
Output Form 2C	Non-Residential Worker Soil	☐
Output Form 2D	Non-Residential Worker Groundwater Use	☐
Output Form 2E	Construction Worker Soil	☐
Output Form 2F	Recreator/Trespasser Soil	☐
Output Form 2G	Recreator/Trespasser Surface Water	☐
	Output Section 3 - Vapor Intrusion Calculators	
Output Form 3A	Resident Groundwater to Indoor Air	☐
Output Form 3B	Resident Soil Gas to Indoor Air	☐
Output Form 3C	Resident Indoor Air	☐
Output Form 3D	Non-Residential Worker Groundwater to Indoor Air	☐
Output Form 3E	Non-Residential Worker Soil Gas to Indoor Air	☐
Output Form 3F	Non-Residential Worker Indoor Air	☐
	Output Section 4 - Contaminant Migration Worksheets	
Output Form 4A	Soil to Groundwater - Forward Mode	☐
Output Form 4B	Groundwater to Groundwater - Forward Mode	☐
Output Form 4C	Soil to Surface Water - Forward Mode	☐
Output Form 4D	Groundwater to Surface Water - Forward Mode	☐
Output Form 4E	Soil to Groundwater - Backward Mode	☐
Output Form 4F	Groundwater to Groundwater - Backward Mode	☐
Output Form 4G	Soil to Surface Water - Backward Mode	☐
Output Form 4H	Groundwater to Surface Water - Backward Mode	☐

Complete Exposure Pathways	Input Form 1A

Version Date: July 2022
Basis: May 2022 EPA RSL Table
Site ID: USEPA ID: NC7210020544

Exposure Unit ID: On-Site

Note: Risk output will only be calculated for complete exposure pathways.

Receptor	Pathway	Check box if pathway complete
DIRECT CONTACT SOIL AND WATER PATHWAYS		
Resident	Soil	☑
	Groundwater Use	☐
Non-Residential Worker	Soil	☑
	Groundwater Use	☐
Construction Worker	Soil	☑
Recreator/Trespasser	Soil	☑
	Surface Water	☑
VAPOR INTRUSION PATHWAYS		
Resident	Groundwater to Indoor Air	☑
	Soil Gas to Indoor Air	☐
	Indoor Air	☐
Non-Residential Worker	Groundwater to Indoor Air	☑
	Soil Gas to Indoor Air	☐
	Indoor Air	☐
CONTAMINANT MIGRATION PATHWAYS		
Groundwater	Source Soil	☐
	Source Groundwater	☐
Surface Water	Source Soil	☐
	Source Groundwater	☐

Exposure Factors and Target Risks **Input Form 1B**

Version Date: July 2022
Basis: May 2022 EPA RSL Table
Site ID: USEPA ID: NC7210020544

Exposure Unit ID: On-Site

Exposure Parameter	Default Value	Site Specific Value	Justification
General			
Target Cancer Risk (individual)	1.0E-06	1.0E-06	
Target Cancer Risk (cumulative)	1.0E-04	1.0E-04	
Target Hazard Index (individual)	2.0E-01	2.0E-01	
Target Hazard Index (cumulative)	1.0E+00	1.0E+00	
Residential Child			
Lifetime (LT) (years)	70	70	
Body Weight (BW) (kg)	15	15	
Exposure Duration (ED) (yr)	6	6	
Exposure Frequency (EF) (d/yr)	350	350	
Exposure Time (ET) (hr/d)	24	24	
Skin Surface Area - Soil Exposure (SA_s) (cm2)	2373	2373	
Soil Adherence Factor (AF) (mg/cm^2)	0.2	0.2	
Soil Ingestion Rate (IRS) (mg/day)	200	200	
Skin Surface Area - Water Exposure (SA_w) (cm2)	6365	6365	
Water Ingestion Rate (IRW) (L/d)	0.78	0.78	
Water Exposure Time (ET_{event}) (hr/event)	0.54	0.54	
Water Event Frequency (EV) (events/day)	1	1	
Residential Adult			
Lifetime (LT) (years)	70	70	
Body Weight (BW) (kg)	80	80	
Exposure Duration (ED) (yr)	20	20	
Exposure Frequency (EF) (d/yr)	350	350	
Exposure Time (ET) (hr/d)	24	24	
Skin Surface Area - Soil Exposure (SA_s) (cm^2)	6032	6032	
Soil Adherence Factor (AF) (mg/cm^2)	0.07	0.07	
Soil Ingestion Rate (IRS) (mg/day)	100	100	
Skin Surface Area - Water Exposure (SA_w) (cm^2)	19652	19652	
Water Ingestion Rate (IRW) (L/d)	2.5	2.5	
Water Exposure Time (ET_{event}) (hr/event)	0.71	0.71	
Water Event Frequency (EV) (events/day)	1	1	
Non-Residential Worker			
Lifetime (LT) (years)	70	70	
Body Weight (BW) (kg)	80	80	
Exposure Duration (ED) (yr)	25	25	
Exposure Frequency (EF) (d/yr)	250	250	
Exposure Time (ET) (hr/d)	8	8	
Skin Surface Area - Soil Exposure (SA_s) (cm^2)	3527	3527	
Soil Adherence Factor (AF) (mg/cm^2)	0.12	0.12	
Soil Ingestion Rate (IR) (mg/day)	100	100	
Skin Surface Area - Water Exposure (SA_w) (cm^2)	19652	19652	
Water Ingestion Rate (IRW) (L/d)	0.83	0.83	
Water Exposure Time (ET_{event}) (hr/event)	0.67	0.67	
Water Event Frequency (EV) (events/day)	1	1	
Construction Worker			
Lifetime (LT) (years)	70	70	
Body Weight (BW) (kg)	80	80	
Working Weeks (EW) (wk/yr)	50	50	
Exposure Duration (ED) (yr)	1	1	
Exposure Frequency (EF) (d/yr)	250	250	
Exposure Time (ET) (hr/d)	8	8	
Skin Surface Area - Soil Exposure (SA_s) (cm^2)	3527	3527	
Soil Adherence Factor (AF) (mg/cm^2)	0.3	0.3	
Soil Ingestion Rate (IR) (mg/day)	330	330	

Exposure Factors and Target Risks **Input Form 1B**

Version Date: July 2022
Basis: May 2022 EPA RSL Table
Site ID: USEPA ID: NC7210020544

Exposure Unit ID: On-Site

Exposure Parameter	Default Value		Site Specific Value	Justification
User Defined Child				
	Recreator	Trespasser		
Lifetime (LT) (years)	70	NA	70	
Averaging Time (AT) (days/yr)	365	NA	365	
Body Weight (BW) (kg)	15	NA	15	
Exposure Duration 0-2 (ED) (yr)	2	NA	2	
Exposure Duration 2-6 (ED) (yr)	4	NA	4	
Exposure Frequency (EF) (d/yr)	195	NA	195	
Exposure Time (ET) (hr/d)	2	NA	2	
Skin Surface Area - Soil Exposure (SA_s) (cm^2)	2373	NA	2373	
Soil Adherence Factor (AF) (mg/cm^2)	0.2	NA	0.2	
Soil Ingestion Rate (IRS) (mg/day)	200	NA	200	
Skin Surface Area - Water Exposure (SA_w) (cm^2)	6365	NA	6365	
Water Ingestion Rate (IRW) (L/hr)	0.12	NA	0.12	
Water Exposure Time (ET_{event}) (hr/event)	2	NA	2	
Water Event Frequency (EV) (events/day)	1	NA	1	
User Defined Adult				
	Recreator	Trespasser		
Lifetime (LT) (years)	70	70	70	
Body Weight (BW) (kg)	80	45	80	
Exposure Duration 6-16 (ED) (yr)	10	10	10	
Exposure Duration 16-26 (ED) (yr)	10	0	10	
Exposure Frequency (EF) (d/yr)	195	90	195	
Exposure Time (ET) (hr/d)	2	2	2	
Skin Surface Area - Soil Exposure (SA_s) (cm^2)	6032	6032	6032	
Soil Adherence Factor (AF) (mg/cm^2)	0.07	0.2	0.07	
Soil Ingestion Rate (IRS) (mg/day)	100	200	100	
Skin Surface Area - Water Exposure (SA_w) (cm^2)	19652	19652	19652	
Water Ingestion Rate (IRW) (L/hr)	0.11	0.11	0.11	
Water Exposure Time (ET_{event}) (hr/event)	2	2	2	
Water Event Frequency (EV) (events/day)	1	1	1	

Exposure Point Concentrations

Version Date: July 2022

Basis: May 2022 EPA RSL Table

Site ID: USEPA ID: NC7210020544

Exposure Unit ID: On-Site

Soil Exposure Point Concentration Table

Description of Exposure Point Concentration Selection:

NOTE: If the chemical list is changed from a prior calculator run, remember to select "See All Chemicals" on the data output sheet or newly added chemicals will not be included in risk calculations

Exposure Point Concentration (mg/kg)	Notes:	CAS Number	Chemical **For the chemicals highlighted in blue, data entry notes are provided in the PSRG Table link on the Main Menu**	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Concentration	Detection Frequency
2.1	COPC	56-55-3	~Benz[a]anthracene			mg/kg		
2.5	COPC	50-32-8	~Benzo[a]pyrene			mg/kg		
2.8	COPC	205-99-2	~Benzo[b]fluoranthene			mg/kg		
0.68	COPC	127-18-4	Tetrachloroethylene			mg/kg		
6900	COPC	79-01-6	Trichloroethylene			mg/kg		
0.06	COPC	75-01-4	Vinyl Chloride			mg/kg		

Exposure Point Concentrations **Input Form 2B**

Version Date: July 2022

Basis: May 2022 EPA RSL Table

Site ID: USEPA ID: NC7210020544

Exposure Unit ID: On-Site

Groundwater Exposure Point Concentration Table

Description of Exposure Point Concentration Selection:

NOTE: If the chemical list is changed from a prior calculator run, remember to select "See All Chemicals" on the data output sheet or newly added chemicals will not be included in risk calculations

Exposure Point Concentration (ug/L)	Notes:	CAS Number	Chemical	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value	Screening Toxicity Value (Screening Level) (n/c)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion
5900	COPC	7440-39-3	Barium			ug/L										
260	COPC	71-43-2	Benzene			ug/L										
4.7	COPC	7440-43-9	Cadmium (Water)			ug/L										
79	COPC	16065-83-1	Chromium(III), Insoluble Salts			ug/L										
79		7440-47-3	Chromium, Total			ug/L										
10	COPC	75-34-3	Dichloroethane, 1,1-			ug/L										
1.6	COPC	107-06-2	Dichloroethane, 1,2-			ug/L										
3600	COPC	156-59-2	Dichloroethylene, cis-1,2-			ug/L										
180	COPC	1634-04-4	Methyl tert-Butyl Ether (MTBE)			ug/L										
20	COPC	91-20-3	~Naphthalene			ug/L										
9000	COPC	127-18-4	Tetrachloroethylene			ug/L										
5100	COPC	79-01-6	Trichloroethylene			ug/L										
310	COPC	75-01-4	Vinyl Chloride			ug/L										

Exposure Point Concentrations **Input Form 2C**

Version Date: July 2022

Basis: May 2022 EPA RSL Table

Site ID: USEPA ID: NC7210020544

Exposure Unit ID: On-Site

Surface Water Exposure Point Concentration Table

Description of Exposure Point Concentration Selection:

Tunnel Samples 7/21/22

NOTE: If the chemical list is changed from a prior calculator run, remember to select "See All Chemicals" on the data output sheet or newly added chemicals will not be included in risk calculations

Exposure Point Concentration (ug/L)	Notes:	CAS Number	Chemical	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value	Screening Toxicity Value (Screening Level) (n/c)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion
19	COPC	127-18-4	Tetrachloroethylene			ug/L										
120	COPC	79-01-6	Trichloroethylene			ug/L										

Risk for Individual Pathways	Output Form 1A
Version Date: July 2022	
Basis: May 2022 EPA RSL Table	
Site ID: USEPA ID: NC7210020544	
Exposure Unit ID: On-Site	

DIRECT CONTACT SOIL AND WATER CALCULATORS				
Receptor	**Pathway**	**Carcinogenic Risk**	**Hazard Index**	**Risk exceeded?**
Resident	Soil	7.2E-03	1.6E+03	YES
	Groundwater Use*	NC	NC	NC
Non-Residential Worker	Soil	1.1E-03	3.6E+02	YES
	Groundwater Use*	NC	NC	NC
Construction Worker	Soil	2.8E-04	2.2E+03	YES
Recreator/Trespasser	Soil	7.5E-04	1.7E+02	YES
	Surface Water*	2.7E-05	4.1E+00	YES

VAPOR INTRUSION CALCULATORS				
Receptor	**Pathway**	**Carcinogenic Risk**	**Hazard Index**	**Risk exceeded?**
Resident	Groundwater to Indoor Air	7.2E-03	1.1E+03	YES
	Soil Gas to Indoor Air	NC	NC	NC
	Indoor Air	NC	NC	NC
Non-Residential Worker	Groundwater to Indoor Air	9.9E-04	2.7E+02	YES
	Soil Gas to Indoor Air	NC	NC	NC
	Indoor Air	NC	NC	NC

CONTAMINANT MIGRATION CALCULATORS			
Pathway	**Source**	**Target Receptor Concentrations Exceeded?**	
Groundwater	Source Soil	Exceedence of 2L at Receptor?	NC
	Source Groundwater	Exceedence of 2L at Receptor?	NC
Surface Water	Source Soil	Exceedence of 2B at Receptor?	NC
	Source Groundwater	Exceedence of 2B at Receptor?	NC

Notes:

1. If lead concentrations were entered in the exposure point concentration tables, see the individual calculator sheets for lead concentrations in comparison to screening levels. Note that lead is not included in cumulative risk calculations.

2. * = If concentrations in groundwater exceed the NC 2L Standards or IMAC, or concentrations in surface water exceed the NC 2B Standards, appropriate remediation and/or institutional control measures will be necessary to be eligible for a risk-based closure.
3. NM = Not Modeled
4. NC = Pathway not calculated

Sitewide Risk **Output Form 1B**

Version Date: July 2022

Basis: May 2022 EPA RSL Table

Site ID: USEPA ID: NC7210020544

Exposure Unit ID: On-Site

		Resident - Current Scenario			Resident - Future Scenario			Non-Residential Worker - Current Scenario			Non-Residential Worker - Future Scenario			Construction Worker			Recreator/Trespasser		
Receptor	**Pathway**	**Check box to include in site-wide risk calculations**	**Carcinogenic Risk**	**Hazard Index**	**Check box to include in site-wide risk calculations**	**Carcinogenic Risk**	**Hazard Index**	**Check box to include in site-wide risk calculations**	**Carcinogenic Risk**	**Hazard Index**	**Check box to include in site-wide risk calculations**	**Carcinogenic Risk**	**Hazard Index**	**Check box to include in site-wide risk calculations**	**Carcinogenic Risk**	**Hazard Index**	**Check box to include in site-wide risk calculations**	**Carcinogenic Risk**	**Hazard Index**
DIRECT CONTACT SOIL AND WATER CALCULATORS																			
Resident	Soil	☒	7.2E-03	1.6E+03	☒	7.2E-03	1.6E+03												
	Groundwater Use*	☐	NM	NM	☐	NM	NM												
Non-Residential Worker	Soil							☒	1.1E-03	3.6E+02	☒	1.1E-03	3.6E+02						
	Groundwater Use*							☐	NM	NM		NM	NM						
Construction Worker	Soil													☒	2.8E-04	2.2E+03			
Recreator/Trespasser	Soil																☒	7.5E-04	1.7E+02
	Surface Water Use*																☒	2.7E-05	4.1E+00
VAPOR INTRUSION CALCULATORS																			
Resident	Groundwater to Indoor Air	☐	NM	NM	☒	7.2E-03	1.1E+03												
	Soil Gas to Indoor Air	☐	NM	NM	☐	NM	NM												
	Indoor Air	☒	NM	NM	☒	NM	NM												
Non-Residential Worker	Groundwater to Indoor Air							☒	9.9E-04	2.7E+02	☒	9.9E-04	2.7E+02						
	Soil Gas to Indoor Air							☐	NM	NM	☐	NM	NM						
	Indoor Air							☐	NM	NM	☐	NM	NM						
TOTAL SITEWIDE RISK FOR EACH RECEPTOR			**7.2E-03**	**1.6E+03**		**1.4E-02**	**2.8E+03**		**2.1E-03**	**6.4E+02**		**2.1E-03**	**6.4E+02**		**2.8E-04**	**2.2E+03**		**7.8E-04**	**1.7E+02**

Notes:

1. If lead concentrations were entered in the exposure point concentration tables, see the individual calculator sheets for lead concentrations in comparison to screening levels. Note that lead is not included in cumulative risk calculations.
2. * = If concentrations in groundwater exceed the NC 2L Standards or IMAC, or concentrations in surface water exceed the NC 2B Standards, appropriate remediation and/or institutional control measures will be necessary to be eligible for a risk-based closure.
3. NM = Not Modeled
4. NC = Pathway not calculated

DEQ Risk Calculator - Direct Contact - Resident Soil **Output Form 2A**

Version Date: July 2022

Basis: May 2022 EPA RSL Table

Site ID: USEPA ID: NC7210020544

Exposure Unit ID: On-Site

** - Note that inhalation on this calculator refers to outdoor inhalation of volatiles and particulates, not indoor inhalation associated with vapor intrusion.*

*** - Note that the EPA has no consensus on reference dose or cancer slope factor values for lead, therefore it is not possible to calculate cancer risk or hazard quotient. Lead concentrations are compared to the EPA screening level of 400 mg/kg for residential soil.*

CAS #	Chemical Name:	Ingestion Concentration (mg/kg)	Dermal Concentration (mg/kg)	Inhalation Concentration (mg/kg)*	Ingestion Carcinogenic Risk	Dermal Carcinogenic Risk	Inhalation Carcinogenic Risk*	Calculated Carcinogenic Risk	Ingestion Hazard Quotient	Dermal Hazard Quotient	Inhalation Hazard Quotient*	Calculated Non-Carcinogenic Hazard Quotient
56-55-3	~Benz[a]anthracene	2.1	2.1	2.1	**1.4E-06**	4.6E-07	3.7E-08	1.9E-06				
50-32-8	~Benzo[a]pyrene	2.5	2.5	2.5	**1.6E-05**	**5.4E-06**	4.9E-11	2.2E-05	1.1E-01	3.3E-02	4.0E-05	1.4E-01
205-99-2	~Benzo[b]fluoranthene	2.8	2.8	2.8	**1.8E-06**	6.1E-07	5.5E-12	2.4E-06				
127-18-4	Tetrachloroethylene	0.68	0.68	0.68	2.1E-09		2.8E-08	3.0E-08	1.4E-03		7.3E-03	8.7E-03
79-01-6	Trichloroethylene	6900	6900	6900	**7.9E-04**		**6.4E-03**	7.2E-03	**1.8E+02**		**1.5E+03**	**1.6E+03**
75-01-4	Vinyl Chloride	0.06	0.06	0.06	6.4E-07		1.6E-07	8.0E-07	2.6E-04		3.2E-04	5.8E-04
						Cumulative:		**7.2E-03**				**1.6E+03**

DEQ Risk Calculator - Direct Contact - Non-Residential Worker Soil **Output Form 2C**

Version Date: July 2022

Basis: May 2022 EPA RSL Table

Site ID: USEPA ID: NC7210020544

Exposure Unit ID: On-Site

** - Note that inhalation on this calculator refers to outdoor inhalation of volatiles and particulates, not indoor inhalation associated with vapor intrusion.*

*** - Note that the EPA has no consensus on reference dose or cancer slope factor values for lead, therefore it is not possible to calculate cancer risk or hazard quotient. Lead concentrations are compared to the EPA screening level of 800 mg/kg for commercial/industrial soil.*

CAS #	Chemical Name:	Ingestion Concentration (mg/kg)	Dermal Concentration (mg/kg)	Inhalation Concentration (mg/kg)*	Ingestion Carcinogenic Risk	Dermal Carcinogenic Risk	Inhalation Carcinogenic Risk	Calculated Carcinogenic Risk	Ingestion Hazard Quotient	Dermal Hazard Quotient	Inhalation Hazard Quotient	Calculated Non-Carcinogenic Hazard Quotient
56-55-3	~Benz[a]anthracene	2.1	2.1	2.1	6.4E-08	3.5E-08	3.1E-09	1.0E-07				
50-32-8	~Benzo[a]pyrene	2.5	2.5	2.5	7.6E-07	4.2E-07	4.0E-12	**1.2E-06**	7.1E-03	3.9E-03	9.4E-06	1.1E-02
205-99-2	~Benzo[b]fluoranthene	2.8	2.8	2.8	8.6E-08	4.7E-08	4.5E-13	1.3E-07				
127-18-4	Tetrachloroethylene	0.68	0.68	0.68	4.4E-10		6.4E-09	6.9E-09	9.7E-05		1.7E-03	1.8E-03
79-01-6	Trichloroethylene	6900	6900	6900	**9.7E-05**		**1.0E-03**	**1.1E-03**	**1.2E+01**		**3.5E+02**	**3.6E+02**
75-01-4	Vinyl Chloride	0.06	0.06	0.06	1.3E-08		9.6E-09	2.3E-08	1.7E-05		7.6E-05	9.3E-05
						Cumulative:		**1.1E-03**				**3.6E+02**

DEQ Risk Calculator - Direct Contact - Construction Worker Soil **Output Form 2E**

Version Date: July 2022

Basis: May 2022 EPA RSL Table

Site ID: USEPA ID: NC7210020544

Exposure Unit ID: On-Site

** - Note that inhalation on this calculator refers to outdoor inhalation of volatiles and particulates, not indoor inhalation associated with vapor intrusion.*

*** - Note that the EPA has no consensus on reference dose or cancer slope factor values for lead, therefore it is not possible to calculate cancer risk or hazard quotient. Lead concentrations are compared to the EPA screening level of 800 mg/kg for commercial/industrial soil.*

CAS #	Chemical Name:	Ingestion Concentration (mg/kg)	Dermal Concentration (mg/kg)	Inhalation Concentration (mg/kg)*	Ingestion Carcinogenic Risk	Dermal Carcinogenic Risk	Inhalation Carcinogenic Risk	Calculated Carcinogenic Risk	Ingestion Hazard Quotient	Dermal Hazard Quotient	Inhalation Hazard Quotient	Calculated Non-Carcinogenic Hazard Quotient
56-55-3	~Benz[a]anthracene	2.1	2.1	2.1	8.5E-09	3.5E-09	9.8E-10	1.3E-08				
50-32-8	~Benzo[a]pyrene	2.5	2.5	2.5	1.0E-07	4.2E-08	4.6E-09	1.5E-07	2.5E-02	1.0E-02	**2.8E-01**	**3.2E-01**
205-99-2	~Benzo[b]fluoranthene	2.8	2.8	2.8	1.1E-08	4.7E-09	5.2E-10	1.7E-08				
127-18-4	Tetrachloroethylene	0.68	0.68	0.68	5.8E-11		1.6E-09	1.6E-09	2.5E-04		1.1E-02	1.1E-02
79-01-6	Trichloroethylene	6900	6900	6900	**1.3E-05**		**2.7E-04**	**2.8E-04**	**4.1E+01**		**2.2E+03**	**2.2E+03**
75-01-4	Vinyl Chloride	0.06	0.06	0.06	1.7E-09		5.7E-09	7.5E-09	5.9E-05		1.2E-03	1.2E-03
						Cumulative:		**2.8E-04**				**2.2E+03**

DEQ Risk Calculator - Direct Contact - Recreator/Trespasser Soil **Output Form 2F**

Version Date: July 2022

Basis: May 2022 EPA RSL Table

Site ID: USEPA ID: NC7210020544

Exposure Unit ID: On-Site

** - Note that inhalation on this calculator refers to outdoor inhalation of volatiles and particulates, not indoor inhalation associated with vapor intrusion.*

*** - Note that the EPA has no consensus on reference dose or cancer slope factor values for lead, therefore it is not possible to calculate cancer risk or hazard quotient. Lead concentrations are compared to the EPA screening level of 400 mg/kg for residential soil.*

Receptor Type:

CAS #	Chemical Name:	Ingestion Concentration (mg/kg)	Dermal Concentration (mg/kg)	Inhalation Concentration (mg/kg)*	Ingestion Carcinogenic Risk	Dermal Carcinogenic Risk	Inhalation Carcinogenic Risk	Calculated Carcinogenic Risk	Ingestion Hazard Quotient	Dermal Hazard Quotient	Inhalation Hazard Quotient	Calculated Non-Carcinogenic Hazard Quotient
56-55-3	~Benz[a]anthracene	2.1	2.1	2.1	7.6E-07	2.5E-07	1.7E-09	**1.0E-06**				
50-32-8	~Benzo[a]pyrene	2.5	2.5	2.5	**9.1E-06**	**3.0E-06**	2.3E-12	**1.2E-05**	5.9E-02	1.8E-02	1.8E-06	7.8E-02
205-99-2	~Benzo[b]fluoranthene	2.8	2.8	2.8	**1.0E-06**	3.4E-07	2.5E-13	**1.4E-06**				
127-18-4	Tetrachloroethylene	0.68	0.68	0.68	1.1E-09		1.3E-09	2.4E-09	8.1E-04		3.4E-04	1.1E-03
79-01-6	Trichloroethylene	6900	6900	6900	**4.4E-04**		**3.0E-04**	**7.4E-04**	**9.8E+01**		**6.8E+01**	**1.7E+02**
75-01-4	Vinyl Chloride	0.06	0.06	0.06	6.1E-07		1.2E-07	7.3E-07	1.4E-04		1.5E-05	1.6E-04
						Cumulative:		**7.5E-04**				**1.7E+02**

DEQ Risk Calculator - Direct Contact - Recreator/Trespasser Surface Water **Output Form 2G**

Version Date: July 2022

Basis: May 2022 EPA RSL Table

Site ID: USEPA ID: NC7210020544

Exposure Unit ID: On-Site

Receptor Type:

CAS #	Chemical Name:	Ingestion Concentration (ug/L)	Dermal Concentration (ug/L)	Ingestion Carcinogenic Risk	Dermal Contact Carcinogenic Risk	Calculated Carcinogenic Risk	Ingestion Hazard Quotient	Dermal Contact Hazard Quotient	Calculated Non-Carcinogenic Hazard Quotient
127-18-4	Tetrachloroethylene	19	19	4.6E-08	2.8E-07	3.3E-07	2.7E-02	8.9E-02	1.2E-01
79-01-6	Trichloroethylene	120	120	**1.0E-05**	**1.6E-05**	**2.7E-05**	**2.1E+00**	**2.0E+00**	**4.0E+00**
					Cumulative:	2.7E-05			**4.1E+00**

DEQ Risk Calculator - Vapor Intrusion - Resident Groundwater to Indoor Air **Output Form 3A**

Version Date: July 2022

Basis: May 2022 EPA RSL Table

Site ID: USEPA ID: NC7210020544

Exposure Unit ID: On-Site

Carcinogenic risk and hazard quotient cells highlighted in orange are associated with non-volatile chemicals. Since these chemicals do not pose a vapor intrusion risk, no risk values are calculated for these chemicals.

Groundwater concentrations are in ug/L. Air concentrations are in ug/m^3.

CAS #	Chemical Name:	Groundwater Concentration (ug/L)	Target Indoor Air Conc. for Carcinogens @ TCR = 1E-06	Target Indoor Air Conc. for Non-Carcinogens @ THQ = 0.2	Calculated Carcinogenic Risk	Calculated Non-Carcinogenic Hazard Quotient
7440-39-3	Barium	5900	-	1.0E-01		
71-43-2	Benzene	260	3.6E-01	6.3E+00	**1.6E-04**	**1.9E+00**
7440-43-9	Cadmium (Water)	4.7	1.6E-03	2.1E-03		
16065-83-1	Chromium(III), Insoluble Salts	79	-	-		
7440-47-3	Chromium, Total	79	1.2E-05	2.1E-02		
75-34-3	Dichloroethane, 1,1-	10	1.8E+00	-	**1.3E-06**	
107-06-2	Dichloroethane, 1,2-	1.6	1.1E-01	1.5E+00	7.1E-07	1.1E-02
156-59-2	Dichloroethylene, cis-1,2-	3600	-	-		
1634-04-4	Methyl tert-Butyl Ether (MTBE)	180	1.1E+01	6.3E+02	4.0E-07	1.4E-03
91-20-3	~Naphthalene	20	8.3E-02	6.3E-01	**4.4E-06**	1.1E-01
127-18-4	Tetrachloroethylene	9000	1.1E+01	8.3E+00	**6.0E-04**	**1.6E+02**
79-01-6	Trichloroethylene	5100	4.8E-01	4.2E-01	**4.3E-03**	**9.8E+02**
75-01-4	Vinyl Chloride	310	1.7E-01	1.7E+01	**2.1E-03**	**4.2E+00**
				Cumulative:	**7.2E-03**	**1.1E+03**

DEQ Risk Calculator - Vapor Intrusion - Non-Residential Worker Groundwater to Indoor Air **Output Form 3D**

Version Date: July 2022

Basis: May 2022 EPA RSL Table

Site ID: USEPA ID: NC7210020544

Exposure Unit ID: On-Site

Carcinogenic risk and hazard quotient cells highlighted in orange are associated with non-volatile chemicals. Since these chemicals do not pose a vapor intrusion risk, no risk values are calculated for these chemicals.

Groundwater concentrations are in ug/L. Air concentrations are in ug/m^3.

CAS #	Chemical Name:	Groundwater Concentration (ug/L)	Calculated Indoor Air Concentration (ug/m^3)	Target Indoor Air Conc. for Carcinogens @ TCR = 1E-06	Target Indoor Air Conc. for Non-Carcinogens @ THQ = 0.2	Calculated Carcinogenic Risk	Calculated Non-Carcinogenic Hazard Quotient
7440-39-3	Barium	5900		-	4.4E-01		
71-43-2	Benzene	260	58.99427637	1.6E+00	2.6E+01	**3.8E-05**	**4.5E-01**
7440-43-9	Cadmium (Water)	4.7		6.8E-03	8.8E-03		
16065-83-1	Chromium(III), Insoluble Salts	79		-	-		
7440-47-3	Chromium, Total	79		1.5E-04	8.8E-02		
75-34-3	Dichloroethane, 1,1-	10	2.297628782	7.7E+00	-	3.0E-07	
107-06-2	Dichloroethane, 1,2-	1.6	0.077187244	4.7E-01	6.1E+00	1.6E-07	2.5E-03
156-59-2	Dichloroethylene, cis-1,2-	3600	600.4905969	-	-		
1634-04-4	Methyl tert-Butyl Ether (MTBE)	180	4.319705642	4.7E+01	2.6E+03	9.2E-08	3.3E-04
91-20-3	~Naphthalene	20	0.359771055	3.6E-01	2.6E+00	1.0E-06	2.7E-02
127-18-4	Tetrachloroethylene	9000	6512.673753	4.7E+01	3.5E+01	**1.4E-04**	**3.7E+01**
79-01-6	Trichloroethylene	5100	2053.761243	3.0E+00	1.8E+00	**6.9E-04**	**2.3E+02**
75-01-4	Vinyl Chloride	310	352.3303352	2.8E+00	7.0E+01	**1.3E-04**	**1.0E+00**
					Cumulative:	**9.9E-04**	**2.7E+02**

ATTACHMENT B
NCDEQ Risk Calculator Outputs – Off Site

North Carolina Department of Environmental Quality
Risk Calculator

Version Date:	July 2022
Basis:	May 2022 EPA RSL Table
Site Name:	Tarheel Army Missile Plant - Off-Site Investigation
Site Address:	Burlington, NC
DEQ Section:	USACE
Site ID:	USEPA ID: NC7210020544
Exposure Unit ID:	
Submittal Date:	12/14/2022
Prepared By:	Laura Elliott, PG
Reviewed By:	Ed Woloszyn, Jr.

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Input Form 1B	Exposure Factors and Target Risks	☑
Input Form 1C	Contaminant Migration Parameters	☑
Input Form 1D	Sample Statistics	☐
Input Section 2 - Exposure Point Concentrations		
Input Form 2A	Soil Exposure Point Concentration Table	☑
Input Form 2B	Groundwater Exposure Point Concentration Table	☑
Input Form 2C	Surface Water Exposure Point Concentration Table	☑
Input Form 2D	Soil Gas Exposure Point Concentration Table	☐
Input Form 2E	Indoor Air Exposure Point Concentration Table	☐
DATA OUTPUT SHEETS		
Output Section 1 - Summary Output for All Calculators		
Output Form 1A	Risk for Individual Pathways	☑
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Output Section 2 - Direct Contact Soil and Groundwater Calculators		
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Output Form 2B	Resident Groundwater Use	☐
Output Form 2C	Non-Residential Worker Soil	☐
Output Form 2D	Non-Residential Worker Groundwater Use	☐
Output Form 2E	Construction Worker Soil	☐
Output Form 2F	Recreator/Trespasser Soil	☐
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Output Form 4H	Groundwater to Surface Water - Backward Mode	☐

Complete Exposure Pathways	Input Form 1A

Version Date: July 2022
Basis: May 2022 EPA RSL Table

Site ID: USEPA ID: NC7210020544

Exposure Unit ID:

Note: Risk output will only be calculated for complete exposure pathways.

Receptor	Pathway	Check box if pathway complete
DIRECT CONTACT SOIL AND WATER PATHWAYS		
Resident	Soil	☐
	Groundwater Use	☐
Non-Residential Worker	Soil	☐
	Groundwater Use	☐
Construction Worker	Soil	☐
Recreator/Trespasser	Soil	☐
	Surface Water	☑
VAPOR INTRUSION PATHWAYS		
Resident	Groundwater to Indoor Air	☑
	Soil Gas to Indoor Air	☐
	Indoor Air	☐
Non-Residential Worker	Groundwater to Indoor Air	☑
	Soil Gas to Indoor Air	☐
	Indoor Air	☐
CONTAMINANT MIGRATION PATHWAYS		
Groundwater	Source Soil	☐
	Source Groundwater	☐
Surface Water	Source Soil	☐
	Source Groundwater	☐

Exposure Factors and Target Risks **Input Form 1B**

Version Date: July 2022
Basis: May 2022 EPA RSL Table
Site ID: USEPA ID: NC7210020544

Exposure Unit ID:

Exposure Parameter	Default Value	Site Specific Value	Justification
General			
Target Cancer Risk (individual)	1.0E-06	1.0E-06	
Target Cancer Risk (cumulative)	1.0E-04	1.0E-04	
Target Hazard Index (individual)	2.0E-01	2.0E-01	
Target Hazard Index (cumulative)	1.0E+00	1.0E+00	
Residential Child			
Lifetime (LT) (years)	70	70	
Body Weight (BW) (kg)	15	15	
Exposure Duration (ED) (yr)	6	6	
Exposure Frequency (EF) (d/yr)	350	350	
Exposure Time (ET) (hr/d)	24	24	
Skin Surface Area - Soil Exposure (SA_s) (cm2)	2373	2373	
Soil Adherence Factor (AF) (mg/cm^2)	0.2	0.2	
Soil Ingestion Rate (IRS) (mg/day)	200	200	
Skin Surface Area - Water Exposure (SA_w) (cm2)	6365	6365	
Water Ingestion Rate (IRW) (L/d)	0.78	0.78	
Water Exposure Time (ET_{event}) (hr/event)	0.54	0.54	
Water Event Frequency (EV) (events/day)	1	1	
Residential Adult			
Lifetime (LT) (years)	70	70	
Body Weight (BW) (kg)	80	80	
Exposure Duration (ED) (yr)	20	20	
Exposure Frequency (EF) (d/yr)	350	350	
Exposure Time (ET) (hr/d)	24	24	
Skin Surface Area - Soil Exposure (SA_s) (cm^2)	6032	6032	
Soil Adherence Factor (AF) (mg/cm^2)	0.07	0.07	
Soil Ingestion Rate (IRS) (mg/day)	100	100	
Skin Surface Area - Water Exposure (SA_w) (cm^2)	19652	19652	
Water Ingestion Rate (IRW) (L/d)	2.5	2.5	
Water Exposure Time (ET_{event}) (hr/event)	0.71	0.71	
Water Event Frequency (EV) (events/day)	1	1	
Non-Residential Worker			
Lifetime (LT) (years)	70	70	
Body Weight (BW) (kg)	80	80	
Exposure Duration (ED) (yr)	25	25	
Exposure Frequency (EF) (d/yr)	250	250	
Exposure Time (ET) (hr/d)	8	8	
Skin Surface Area - Soil Exposure (SA_s) (cm^2)	3527	3527	
Soil Adherence Factor (AF) (mg/cm^2)	0.12	0.12	
Soil Ingestion Rate (IR) (mg/day)	100	100	
Skin Surface Area - Water Exposure (SA_w) (cm^2)	19652	19652	
Water Ingestion Rate (IRW) (L/d)	0.83	0.83	
Water Exposure Time (ET_{event}) (hr/event)	0.67	0.67	
Water Event Frequency (EV) (events/day)	1	1	
Construction Worker			
Lifetime (LT) (years)	70	70	
Body Weight (BW) (kg)	80	80	
Working Weeks (EW) (wk/yr)	50	50	
Exposure Duration (ED) (yr)	1	1	
Exposure Frequency (EF) (d/yr)	250	250	
Exposure Time (ET) (hr/d)	8	8	
Skin Surface Area - Soil Exposure (SA_s) (cm^2)	3527	3527	
Soil Adherence Factor (AF) (mg/cm^2)	0.3	0.3	
Soil Ingestion Rate (IR) (mg/day)	330	330	

Exposure Factors and Target Risks **Input Form 1B**

Version Date: July 2022
Basis: May 2022 EPA RSL Table
Site ID: USEPA ID: NC7210020544

Exposure Unit ID:

Exposure Parameter	Default Value		Site Specific Value	Justification
User Defined Child				
	Recreator	Trespasser		
Lifetime (LT) (years)	70	NA	70	
Averaging Time (AT) (days/yr)	365	NA	365	
Body Weight (BW) (kg)	15	NA	15	
Exposure Duration 0-2 (ED) (yr)	2	NA	2	
Exposure Duration 2-6 (ED) (yr)	4	NA	4	
Exposure Frequency (EF) (d/yr)	195	NA	195	
Exposure Time (ET) (hr/d)	2	NA	2	
Skin Surface Area - Soil Exposure (SA_s) (cm^2)	2373	NA	2373	
Soil Adherence Factor (AF) (mg/cm^2)	0.2	NA	0.2	
Soil Ingestion Rate (IRS) (mg/day)	200	NA	200	
Skin Surface Area - Water Exposure (SA_w) (cm^2)	6365	NA	6365	
Water Ingestion Rate (IRW) (L/hr)	0.12	NA	0.12	
Water Exposure Time (ET_{event}) (hr/event)	2	NA	2	
Water Event Frequency (EV) (events/day)	1	NA	1	
User Defined Adult				
	Recreator	Trespasser		
Lifetime (LT) (years)	70	70	70	
Body Weight (BW) (kg)	80	45	80	
Exposure Duration 6-16 (ED) (yr)	10	10	10	
Exposure Duration 16-26 (ED) (yr)	10	0	10	
Exposure Frequency (EF) (d/yr)	195	90	195	
Exposure Time (ET) (hr/d)	2	2	2	
Skin Surface Area - Soil Exposure (SA_s) (cm^2)	6032	6032	6032	
Soil Adherence Factor (AF) (mg/cm^2)	0.07	0.2	0.07	
Soil Ingestion Rate (IRS) (mg/day)	100	200	100	
Skin Surface Area - Water Exposure (SA_w) (cm^2)	19652	19652	19652	
Water Ingestion Rate (IRW) (L/hr)	0.11	0.11	0.11	
Water Exposure Time (ET_{event}) (hr/event)	2	2	2	
Water Event Frequency (EV) (events/day)	1	1	1	

Contaminant Migration Parameters			Input Form 1C
Version Date: July 2022			
Basis: May 2022 EPA RSL Table			
Site ID: USEPA ID: NC7210020544			
Exposure Unit ID:			
Provide justification for the contaminant migration parameters used.			
Parameter	Default Value	Site Specific Value	Justification
Distance to Protection of Groundwater Point of Exposure (POE_{gw}) (feet)	0	0	
Distance to Protection of Surface Water Point of Exposure (POE_{sw}) (feet)	0	0	
Depth to Base of Affected Soils (d_s) (cm)	1244	1,244	
Length of Affected Soil Parallel to Assumed GW Flow Direction (L) (cm)	Site-specific value required	4,250	~140 feet (soil boring location map June 2022, SB-11 to SB-01)
Areal extent of soil contamination range 0.5-500 (A_s) (acres)	0.5	3.5	Approximate area of soil sampling in affected soils
Fraction of vegetative cover (V) (unitless)	0.5	0.3	Site and monitoring well network area.
Water Filled Soil Porosity (θ_w) (unitless)	0.15 (soil to outdoor air pathway)	0.15	
	0.3 (soil to groundwater pathway)	0.3	

Contaminant Migration Parameters	Input Form 1C

Version Date: July 2022
Basis: May 2022 EPA RSL Table
Site ID: USEPA ID: NC7210020544

Exposure Unit ID:

Provide justification for the contaminant migration parameters used.

Parameter	Default Value	Site Specific Value	Justification
Air Filled Soil Porosity (θa) (unitless)	0.28 (soil to outdoor air pathway)	0.28	
	0.13 (soil to groundwater pathway)	0.13	
Total Soil Porosity (n) (unitless)	0.43	0.43	
Dry Soil Bulk Density (ρ_b) (g/cm^3)	1.5	1.5	
Net Infiltration Rate (I) (cm/yr)	66	66	
Fraction Organic Carbon (foc) (unitless)	0.006 (soil to outdoor air pathway)	0.006	
	0.002 (soil leaching to groundwater pathway)	0.002	
Aquifer Hydraulic Conductivity (K) (cm/d)	Site-specific value required	232	https://clu-in.org/products/fracrock/sitedtl.cfm?mid=294 7.6 ft/day
Hydraulic Gradient (i) (unitless)	Site-specific value required	0.042	MW-101 to MW-112 July 2015 data = (590.13ft-573.17ft)/400ft

Contaminant Migration Parameters	Input Form 1C

Version Date: July 2022
Basis: May 2022 EPA RSL Table

Site ID: USEPA ID: NC7210020544

Exposure Unit ID:

Provide justification for the contaminant migration parameters used.

Parameter	Default Value	Site Specific Value	Justification
Average Groundwater Temperature (T_{gw}) (°C)	25	25	
Aquifer Thickness (d_a) (cm)	Site-specific value required		
Groundwater Source Thickness (S_d) (cm)	Site-specific value required		
Groundwater Source Width (S_w) (cm)	Site-specific value required		
Plume Thickness at GW/SW Discharge (δsw) (cm)	Site-specific value required		
Plume Width at GW/SW Discharge (W_{gwsw}) (cm)	Site-specific value required		
Surface Water Flowrate at GW/SW Discharge (Q_{sw}) (cm^3/d)	Site-specific value required		

Exposure Point Concentrations **Input Form 2A**

Version Date: July 2022

Basis: May 2022 EPA RSL Table

Site ID: USEPA ID: NC7210020544

Exposure Unit ID:

Soil Exposure Point Concentration Table

Description of Exposure Point Concentration Selection:

NOTE: If the chemical list is changed from a prior calculator run, remember to select "See All Chemicals" on the data output sheet or newly added chemicals will not be included in risk calculations

Exposure Point Concentration (mg/kg)	Notes:	CAS Number	Chemical **For the chemicals highlighted in blue, data entry notes are provided in the PSRG Table link on the Main Menu**	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value	Screening Toxicity Value (Screening Level) (n/c)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion

Exposure Point Concentrations **Input Form 2B**

Version Date: July 2022

Basis: May 2022 EPA RSL Table

Site ID: USEPA ID: NC7210020544

Exposure Unit ID:

Groundwater Exposure Point Concentration Table

Description of Exposure Point Concentration Selection:

NOTE: If the chemical list is changed from a prior calculator run, remember to select "See All Chemicals" on the data output sheet or newly added chemicals will not be included in risk calculations

Exposure Point Concentration (ug/L)	Notes:	CAS Number	Chemical	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value	Screening Toxicity Value (Screening Level) (n/c)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion
14	COPC	75-34-3	Dichloroethane, 1,1-			ug/L										
4.2	COPC	107-06-2	Dichloroethane, 1,2-			ug/L										
180	COPC	156-59-2	Dichloroethylene, cis-1,2-			ug/L										
77	COPC	127-18-4	Tetrachloroethylene			ug/L										
260	COPC	79-01-6	Trichloroethylene			ug/L										
5.9	COPC	75-01-4	Vinyl Chloride			ug/L										

Exposure Point Concentrations | **Input Form 2C**

Version Date: July 2022

Basis: May 2022 EPA RSL Table

Site ID: USEPA ID: NC7210020544

Exposure Unit ID:

Surface Water Exposure Point Concentration Table

Description of Exposure Point Concentration Selection:

NOTE: If the chemical list is changed from a prior calculator run, remember to select "See All Chemicals" on the data output sheet or newly added chemicals will not be included in risk calculations

Exposure Point Concentration (ug/L)	Notes:	CAS Number	Chemical	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value	Screening Toxicity Value (Screening Level) (n/c)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion
38	COPC	127-18-4	Tetrachloroethylene			ug/L										
44	COPC	79-01-6	Trichloroethylene			ug/L										
0.69	COPC	75-01-4	Vinyl Chloride			ug/L										

Risk for Individual Pathways	Output Form 1A
Version Date: July 2022	
Basis: May 2022 EPA RSL Table	
Site ID: USEPA ID: NC7210020544	
Exposure Unit ID:	

DIRECT CONTACT SOIL AND WATER CALCULATORS				
Receptor	**Pathway**	**Carcinogenic Risk**	**Hazard Index**	**Risk exceeded?**
Resident	Soil	NC	NC	NC
	Groundwater Use*	NC	NC	NC
Non-Residential Worker	Soil	NC	NC	NC
	Groundwater Use*	NC	NC	NC
Construction Worker	Soil	NC	NC	NC
Recreator/Trespasser	Soil	NC	NC	NC
	Surface Water*	2.4E-05	1.7E+00	YES

VAPOR INTRUSION CALCULATORS				
Receptor	**Pathway**	**Carcinogenic Risk**	**Hazard Index**	**Risk exceeded?**
Resident	Groundwater to Indoor Air	2.7E-04	5.2E+01	YES
	Soil Gas to Indoor Air	NC	NC	NC
	Indoor Air	NC	NC	NC
Non-Residential Worker	Groundwater to Indoor Air	3.9E-05	1.2E+01	YES
	Soil Gas to Indoor Air	NC	NC	NC
	Indoor Air	NC	NC	NC

CONTAMINANT MIGRATION CALCULATORS			
Pathway	**Source**	**Target Receptor Concentrations Exceeded?**	
Groundwater	Source Soil	Exceedence of 2L at Receptor?	NC
	Source Groundwater	Exceedence of 2L at Receptor?	NC
Surface Water	Source Soil	Exceedence of 2B at Receptor?	NC
	Source Groundwater	Exceedence of 2B at Receptor?	NC

Notes:

1. If lead concentrations were entered in the exposure point concentration tables, see the individual calculator sheets for lead concentrations in comparison to screening levels. Note that lead is not included in cumulative risk calculations.

2. * = If concentrations in groundwater exceed the NC 2L Standards or IMAC, or concentrations in surface water exceed the NC 2B Standards, appropriate remediation and/or institutional control measures will be necessary to be eligible for a risk-based closure.
3. NM = Not Modeled
4. NC = Pathway not calculated

Sitewide Risk | **Output Form 1B**

Version Date: July 2022

Basis: May 2022 EPA RSL Table

Site ID: USEPA ID: NC7210020544

Exposure Unit ID:

		Resident - Current Scenario			Resident - Future Scenario			Non-Residential Worker - Current Scenario			Non-Residential Worker - Future Scenario			Construction Worker			Recreator/Trespasser		
Receptor	**Pathway**	**Check box to include in site-wide risk calculations**	**Carcinogenic Risk**	**Hazard Index**	**Check box to include in site-wide risk calculations**	**Carcinogenic Risk**	**Hazard Index**	**Check box to include in site-wide risk calculations**	**Carcinogenic Risk**	**Hazard Index**	**Check box to include in site-wide risk calculations**	**Carcinogenic Risk**	**Hazard Index**	**Check box to include in site-wide risk calculations**	**Carcinogenic Risk**	**Hazard Index**	**Check box to include in site-wide risk calculations**	**Carcinogenic Risk**	**Hazard Index**
DIRECT CONTACT SOIL AND WATER CALCULATORS																			
Resident	Soil	☐	NM	NM	☐	NM	NM												
	Groundwater Use*	☐	NM	NM	☐	NM	NM												
Non-Residential Worker	Soil							☐	NM	NM	☐	NM	NM						
	Groundwater Use*							☐	NM	NM	☐	NM	NM						
Construction Worker	Soil													☐	NM	NM			
Recreator/Trespasser	Soil																☐	NM	NM
	Surface Water Use*																☑	2.3E-05	1.5E+00
VAPOR INTRUSION CALCULATORS																			
Resident	Groundwater to Indoor Air	☑	2.7E-04	5.2E+01	☐	NM	NM												
	Soil Gas to Indoor Air	☐	NM	NM	☐	NM	NM												
	Indoor Air	☐	NM	NM	☐	NM	NM												
Non-Residential Worker	Groundwater to Indoor Air							☑	3.9E-05	1.2E+01	☐	NM	NM						
	Soil Gas to Indoor Air							☐	NM	NM	☐	NM	NM						
	Indoor Air							☐	NM	NM	☐	NM	NM						
TOTAL SITEWIDE RISK FOR EACH RECEPTOR			**2.7E-04**	**5.2E+01**		0.0E+00	0.0E+00		3.9E-05	**1.2E+01**		0.0E+00	0.0E+00		0.0E+00	0.0E+00		2.3E-05	**1.5E+00**

Notes:

1. If lead concentrations were entered in the exposure point concentration tables, see the individual calculator sheets for lead concentrations in comparison to screening levels. Note that lead is not included in cumulative risk calculations.
2. * = If concentrations in groundwater exceed the NC 2L Standards or IMAC, or concentrations in surface water exceed the NC 2B Standards, appropriate remediation and/or institutional control measures will be necessary to be eligible for a risk-based closure.
3. NM = Not Modeled
4. NC = Pathway not calculated

Appendix B

Historical Site Ownership Information

FILED ELECTRONICALLY
ALAMANCE COUNTY NC
HUGH WEBSTER

FILED May 31, 2018
AT 12:25:27 PM
BOOK 03777
START PAGE 0599
END PAGE 0602
INSTRUMENT # 08973
EXCISE TAX $3,500.00

This instrument prepared by: Kennon Craver, PLLC,
a licensed North Carolina attorney,
Delinquent taxes, if any, to be paid by the
closing attorney to the Tax Collector
upon disbursement of closing proceedings.

NORTH CAROLINA SPECIAL WARRANTY DEED

Excise Tax: $3,500.00

Return to: Grantee

This instrument was prepared by: Richard H. Hicks, Jr., Attorney at Law (Without examination of title)

Brief description for the Index: Parcel Identifier No. 8875945707

THIS DEED made this 21 day of MAY, 2018, by and between

GRANTOR	GRANTEE
Donald G. Neuenberger, Trustee of the R.D.N Trust dated December 5, 2016, and any amendments thereto c/o Hicks McDonald Noecker LLP 100 South Elm Street, Suite 510 Greensboro, NC 27401	CENTRAL PARK BURLINGTON, LLC, a North Carolina limited liability company 7120 Creek Wood Road Chapel Hill, NC 27514-7450

The designation Grantor and Grantee as used herein shall include said parties, their heirs, successors, and assign, and shall include singular, plural, masculine, feminine or neuter as required by context.

WITNESSETH, that the Grantor, for a valuable consideration paid by the Grantee, the receipt of which is hereby acknowledged, has and by these presents does grant, bargain, sell and convey unto the Grantee in fee simple, all that certain lot or parcel of land situated in Burlington Township, Alamance County, North Carolina, and more particularly described as follows:

ALL OF THAT PROPERTY DESCRIBED ON EXHIBIT A ATTACHED HERETO AND INCORPORATED HEREIN.

The property hereinabove described was acquired by Grantor by instrument recorded in Book ____, page__.
A map showing the above described property is recorded in Plat Book ____, page __.

TO HAVE AND TO HOLD the aforesaid lot or parcel of land and all privileges and appurtenances thereto belonging to the Grantee in fee simple.

Submitted electronically by "Kennon Craver, PLLC"
in compliance with North Carolina statutes governing recordable documents
and the terms of the submitter agreement with the Alamance County Register of Deeds.

The property conveyed hereby does not include the primary residence of Grantor.

And the Grantor covenants with the Grantee, that Grantor has done nothing to impair such title as Grantor received, and Grantor will warrant and defend the title against the lawful claims of all persons claiming by, under or through Grantor, other than the following exceptions:

Those exceptions set out on EXHIBIT B, which is attached hereto and incorporated herein by reference.

IN WITNESS WHEREOF, the Grantor has duly executed the foregoing as of the day and year first above written

_____ [SEAL]
Donald G. Neuenberger, Trustee of the R.D.N Trust
dated December 5, 2016, and any amendments thereto

STATE OF Maryland

COUNTY OF Anne Arundel

I, Danielle Fazenbaker (*Name of Notary Public*), a Notary Public of the County of Anne Arundel and State of Maryland, certify that Donald G. Neuenberger, Trustee of the R.D.N Trust dated December 5, 2016, and any amendments thereto personally came before me this day and acknowledged the execution of the foregoing instrument.

WITNESS my hand and official seal or stamp, this the 21st day of May, 2018.

[Affix Notarial Seal/Stamp]

DANIELLE FAZENBAKER
Notary Public
My Commission Expires 7/6/2021
ANNE ARUNDEL COUNTY, MD

Danielle Fazenbaker
Signature of Notary Public

My Commission Expires: 07/06/2021.

EXHIBIT A

All that certain tract or parcel of land situated in Alamance County, North Carolina and more particularly described as follows:

STARTING at a point which is located by starting at NCGS "Plymouth" (Northing: 854237.4798 feet, Easting: 1872394.282 feet), thence North 81 degrees 6' 43" East 3,467.64 feet to NCGS "Kirk" (Northing: 854773.1885 feet, Easting: 1875819.926 feet); thence South 81 degrees 5' 32" East 3,213.92 feet to a disk (Northing: 854275.5349 feet, Easting: 1878995.0872 feet) the point and place of BEGINNING; thence North 00 degrees 23' 00" West 920.56 feet to an iron pin; thence North 89 degrees 41' 39" East 1,069.48 feet to a disk in the right of way of North Graham-Hopedale Road; thence South 3 degrees 23' 52" West 922.47 feet to an iron pin; thence South 89 degrees 41' 37" West 493.49 feet to a point; thence South 17 degrees 11' 36" West 15.90 feet; thence South 89 degrees 43' 21" West 235.95 feet to a point; thence North 17 degrees 11' 36" East 15.77 feet to an iron pin; thence South 89 degrees 41' 37" West 279.18 feet to the point and place of BEGINNING and being 22.04 acres, more or less, according to the survey entitled "Plat for Hopedale Investment, LLC" prepared by Boswell Surveyors, Inc., dated September 24, 2004.

TOGETHER WITH all improvements located on the land and all fixtures attached or appurtenant to the land or improvements; and

TOGETHER WITH all rights now or ever possessed by Grantor as to the United States government regarding responsibility for the investigation, remediation, removal and cleanup of hazardous substances or wastes present on the property, including but not limited to all rights and interests arising from that Quitclaim Deed from the United States of America to Hopedale Investment, LLC dated November 29, 2004, recorded on November 30, 2004 in Book 2169, Page 675, Alamance County Registry and under that Consent Agreement entered into on February 19, 2004 between the Director of the Division of Waste Management of the North Carolina Department of Environment and Natural Resources and the Deputy Assistant Secretary of the Army and the Remedial Action Plan, attached thereto.

EXHIBIT B
TO
SPECIAL WARRANTY DEED FROM DONALD G. NEUENBERGER, TRUSTEE OF THE R.D.N TRUST DATED DECEMBER 5, 2016 TO CENTRAL PARK BURLINGTON, LLC

This conveyance is made subject to the following exceptions:

1. 2018 ad valorem taxes, and subsequent years;
2. Title to any portion of the land lying within the right of way of Graham-Hopedale Road, F Martin Street, and US 70;
3. Restrictions and other matters contained in Quitclaim Deed(s) filed for record in Book 2169, Page 675, and in Book 2169, Page 691, Alamance County Registry; and
4. Rights of tenants in possession, as tenants only, under unrecorded leases for a duration of less than three (3) years; and
5. Easements, covenants, restrictions and rights of way appearing of record which affect the property and which are legally enforceable.

Owner Name: CENTRAL PARK BURLINGTON LLC

7120 CREEK WOOD DRIVE
CHAPEL HILL, NC 27514
GPIN: 8875847981
PID: 146-596-103

October 5, 2022

0 0.02 0.04 mi

Address Points

- Address
- Tax Address
- Preliminary Address

Heavy Industrial Development Applicants

- APPLIED FOR PERMIT
- PERMIT APPROVED
- PERMIT RENEWED
- UNDER CONSTRUCTION

Alamance County GIS
Alamance County Tax Department

DISCLAIMER:
The datasets and maps available are not survey grade or a legal document. They are a best approximation of what is on the ground, but do contain errors. The data comes from various sources nationally, the state of North Carolina, and here in Alamance County. Alamance County will not be held responsible for the misuse, misrepresentation, or misinterpretation of the data or maps. These maps and data are a service provided for the benefit for Alamance County citizens. We constantly strive to improve the quality and expand the amount of data and maps available.

ALAMANCE COUNTY shall assume no liability for any errors, omissions, or inaccuracies in the information provided regardless of how caused; or any decision made or action taken or not taken by user in reliance upon any information or data furnished hereunder. The user knowingly waives any and all claims for damages against any and all of the entities comprising the Alamance County GIS System that may arise from the mapping data. Date: 10/5/2022

Alamance County Government

TAX ADMINISTRATION RECORD SEARCH

Account Details for **CENTRAL PARK BURLINGTON LLC**

Property Owner	Owner's Mailing Address	Property Location Address
CENTRAL PARK BURLINGTON LLC	**7120 CREEK WOOD DRIVE** **CHAPEL HILL , NC 27514**	**COBB AVE**

Administrative Data

Parcel ID No.	**139443**
GPIN	**8875847981**
OLD Tax Map ID	**146-596-103**
Tax District	**12 - CITY OF BURLINGTON**
Land Use Code	**320**
Land Use Desc	**MANUFACTURING**
Exemption Code	
Neighborhood	**BLC05**

Administrative Data

Legal Desc	**BA CHURCH & COBB ST LT 2**
Plat Bk/Pg	47 / 70

Valuation Information

Tax Value $

Tax Value - Land and all permanent improvements, if any, effective valuation date January 1, 2017, date of County's most recent General Reappraisal

Assessed Value $ **705,704**

If Assessed Value does not equal Market Value, then the parcel may be in a tax deferment program, be split by the county line, or be overridden to match an alternative valuation approach.

Sales History - 4 Previous Sales Found for Parcel number 8875847981

Parcel ID No	Date	Name	Owner ID	Book / Page	Sale Price
1	05/31/2018	CENTRAL PARK BURLINGTON LLC	0675094	3777 / 0420	$450,000.00
2	01/27/2012	GUNN & ASSOC LLC PROFIT & SHARING PLN & WACCAMAW PLATTER LLC	0615119	3074 / 0222	$0.00
3	06/20/2005	WACCAMAW PLATTER LLC &	434717	2260 / 111	$350,000.00
4	03/06/1996	NS MPG INC	UNKNOWN	985 / 955	$1,182,500.00

Data Disclaimer: All data shown here is from other primary data sources and is public information. Users of this data are hereby notified that the aforementioned public information sources should be consulted for verification of the information contained on this website. While efforts have been made to use the most current and accurate data, Alamance County, NC and Data Providers assume no legal responsibility for the use of the information contained herein.

Please direct any questions or comments about the data displayed here to tax.help@alamance-nc.com

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Alamance County Government
TAX ADMINISTRATION RECORD SEARCH

Select Search:
Real Property Record Search
Tax Bill Search
County Homepage
Alamance Homepage

Account | Buildings | Land | Sketch | Tax Card | Deeds | Sales | Tax Bill | Map

Account Details for **CENTRAL PARK BURLINGTON LLC**

New Search

Administrative Data	
Parcel ID No.	**139443**
PIN	**8875 84 7981**
Land Use Code	**320**
Land Use Desc	**MANUFACTURING**

Administrative Data	
Building Location Address	**COBB AVE**

Improvement Detail
(1st Major Improvement on Subject Parcel)

Year Built	**1987**
Built Use/Style	**MFG/PROCESSING**
Grade	**C / AVERAGE QUALITY (C)**
* Percent Complete	**100**
Heated Area (S/F)	**50400.0**
** Bathroom(s)	**0 Full Bath(s)**
** Bedroom(s)	**0**

* Note - As of January 1
* * Note - Bathroom(s), Bedroom(s), shown for description only
* * * Note - If multiple improvements equal "MLT" then parcel includes additional major improvements

Improvement Valuation (1st Major Improvement on Subject Parcel)

* Improvement Full Tax Value $	** Improvement Assessed Value $
	554,279

* Note - Tax Value effective Date equal January 1, 2017, date of County's most recent General Reappraisal
** Note - If Assessed Value not equal Tax Value then variance resulting from formal appeal procedure

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Owner Name: CENTRAL PARK BURLINGTON LLC

7120 CREEK WOOD DRIVE
CHAPEL HILL, NC 27514
GPIN: 8875945707
PID: 148-600-214

October 5, 2022

0 0.03 0.06 mi

Address Points

- Address
- Tax Address
- Preliminary Address

Heavy Industrial Development Applicants

- APPLIED FOR PERMIT
- PERMIT APPROVED
- PERMIT RENEWED
- UNDER CONSTRUCTION

Alamance County GIS
Alamance County Tax Department

DISCLAIMER:
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Account Details for **CENTRAL PARK BURLINGTON LLC**

New Search

Property Owner	Owner's Mailing Address	Property Location Address
CENTRAL PARK BURLINGTON LLC	**7120 CREEK WOOD DRIVE CHAPEL HILL , NC 27514**	**204 N GRAHAM HOPEDALE RD**

Administrative Data

Parcel ID No.	**139757**
GPIN	**8875945707**
OLD Tax Map ID	**148-600-214**
Tax District	**12 - CITY OF BURLINGTON**
Land Use Code	**340**
Land Use Desc	**STORAGE**
Exemption Code	
Neighborhood	**BLC05**

Administrative Data

Legal Desc	**N GRAHAM HOPEDALE RD**
Plat Bk/Pg	**/**

Valuation Information

Tax Value $

Tax Value - Land and all permanent improvements, if any, effective valuation date January 1, 2017, date of County's most recent General Reappraisal

Assessed Value $ **742,816**

If Assessed Value does not equal Market Value, then the parcel may be in a tax deferment program, be split by the county line, or be overridden to match an alternative valuation approach.

Sales History - 6 Previous Sales Found for Parcel number 139757

Parcel ID No	Date	Name	Owner ID	Book / Page	Sale Price
1	05/31/2018	CENTRAL PARK BURLINGTON LLC	0675094	3777 / 0599	$1,750,000.00
2	05/17/2018	RDN TRUST	0674726	3773 / 0161	$0.00
3	08/28/2013	SAUCIER INC	0641626	3256 / 0582	$755,000.00
4	11/30/2004	HOPEDALE INVESTMENT LLC	48390	2169 / 675	$0.00
5	01/01/1959	U S ARMY ORDINANCE	UNKNOWN	0234 / 0318	$0.00
6	07/01/1954	UNITED STATES OF AMERICA	UNKNOWN	0234 / 0318	$0.00

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Account Details for **CENTRAL PARK BURLINGTON LLC**

New Search

Administrative Data		Administrative Data	
Parcel ID No.	**139757**	Building Location Address	**204 N GRAHAM HOPEDALE RD**
PIN	**8875 94 5707**		
Land Use Code	**340**		
Land Use Desc	**STORAGE**		

Improvement Detail
(1st Major Improvement on Subject Parcel)

Year Built	**1943**
Built Use/Style	**MFG/PROCESSING**
Grade	**C / AVERAGE QUALITY (C)**
* Percent Complete	**100**
Heated Area (S/F)	**407252.0**
** Bathroom(s)	**0 Full Bath(s)**
** Bedroom(s)	**0**

* Note - As of January 1
* * Note - Bathroom(s), Bedroom(s), shown for description only
* * * Note - If multiple improvements equal "MLT" then parcel includes additional major improvements

Improvement Valuation (1st Major Improvement on Subject Parcel)

* Improvement Full Tax Value $	** Improvement Assessed Value $
	437,334

* Note - Tax Value effective Date equal January 1, 2017, date of County's most recent General Reappraisal
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Account Details for **CENTRAL PARK BURLINGTON LLC**

New Search

Administrative Data		Land Supplemental	
Parcel Ref No	**139757**	Deeded Acres	**0.00**
PIN	**8875 94 5707**		
Land Use Code	**340**	Tax District Note	**12 - CITY OF BURLINGTON**
Land Use Desc	**STORAGE**	Present-Use Info	**CUMMINGS**

Land Value Detail (Effective Date January 1, 2017, date of County's most recent General Reappraisal)

Land Full Value (LFV) $	Land Present-Use Value (PUV) $	Land Total Assessed Value $
305,482	**305,482**	**305,482**

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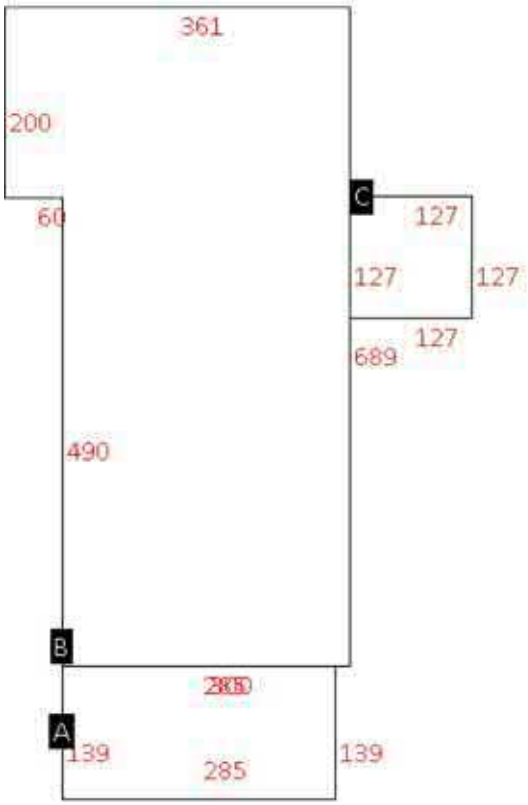
Account Details for **CENTRAL PARK BURLINGTON LLC**

New Search

(Building 1) - Sketch for Parcel ID: **139757**

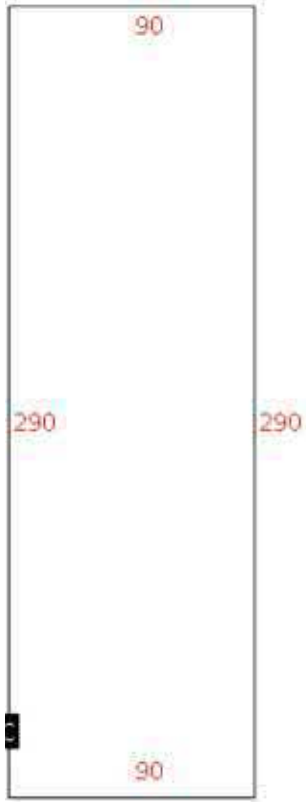


Label	Description	Base SF	Total SF
A	MFG/PROCESSING	39900.00	39900.00
B	MFG/PROCESSING	219000.00	219000.00
C	MFG/PROCESSING	16384.00	16384.00

(Building 2) - Sketch for Parcel ID: **139757**

Label	Description	Base SF	Total SF
A	MFG/PROCESSING	52650.00	52650.00

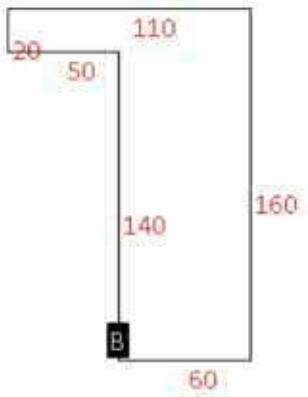
(Building 3) - Sketch for Parcel ID: **139757**



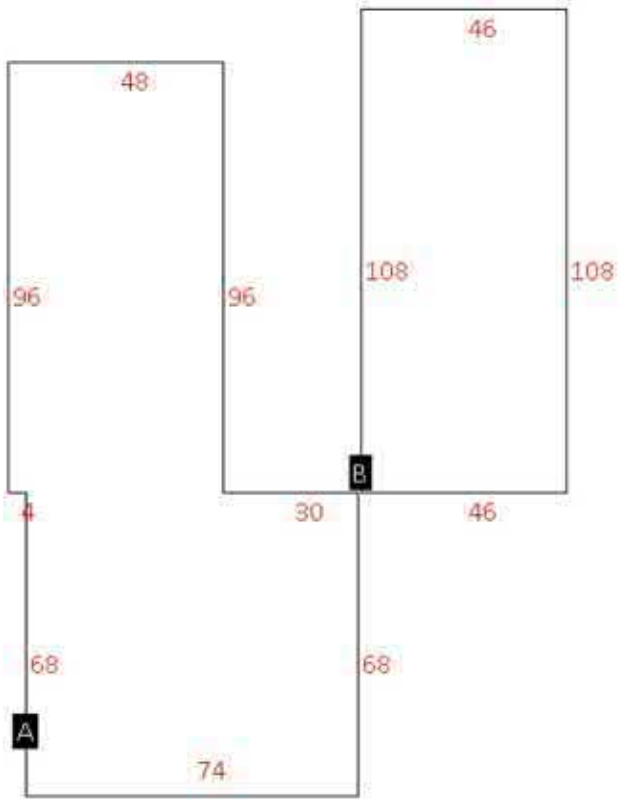
Label	Description	Base SF	Total SF
C	MFG/PROCESSING	26100.00	26100.00

(Building 4) - Sketch for Parcel ID: **139757**

Label	Description	Base SF	Total SF
B	WAREHOUSE	10600.00	10600.00



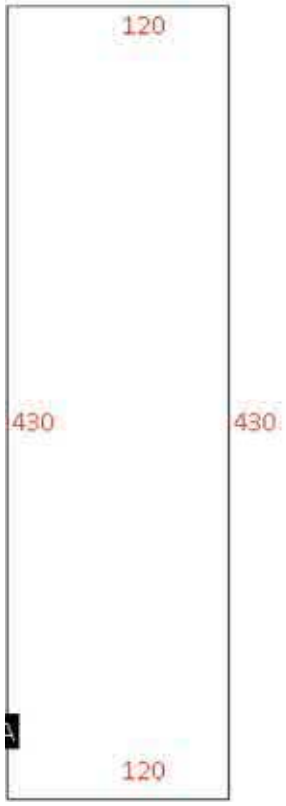
(Building 5) - Sketch for Parcel ID: **139757**



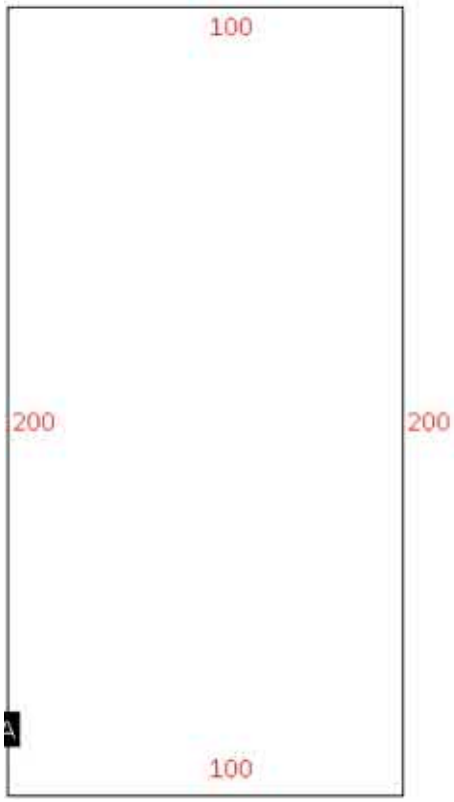
Label	Description	Base SF	Total SF
A	WAREHOUSE	9640.00	9640.00
B	WAREHOUSE	4968.00	4968.00

(Building 6) - Sketch for Parcel ID: **139757**

Label	Description	Base SF	Total SF
A	MFG/PROCESSING	51600.00	51600.00



(Building 7) - Sketch for Parcel ID: **139757**



Label	Description	Base SF	Total SF
A	WAREHOUSE	20000.00	20000.00

(Building 8) - Sketch for Parcel ID: **139757**

Label	Description	Base SF	Total SF
C	WAREHOUSE	6800.00	6800.00

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Appendix C

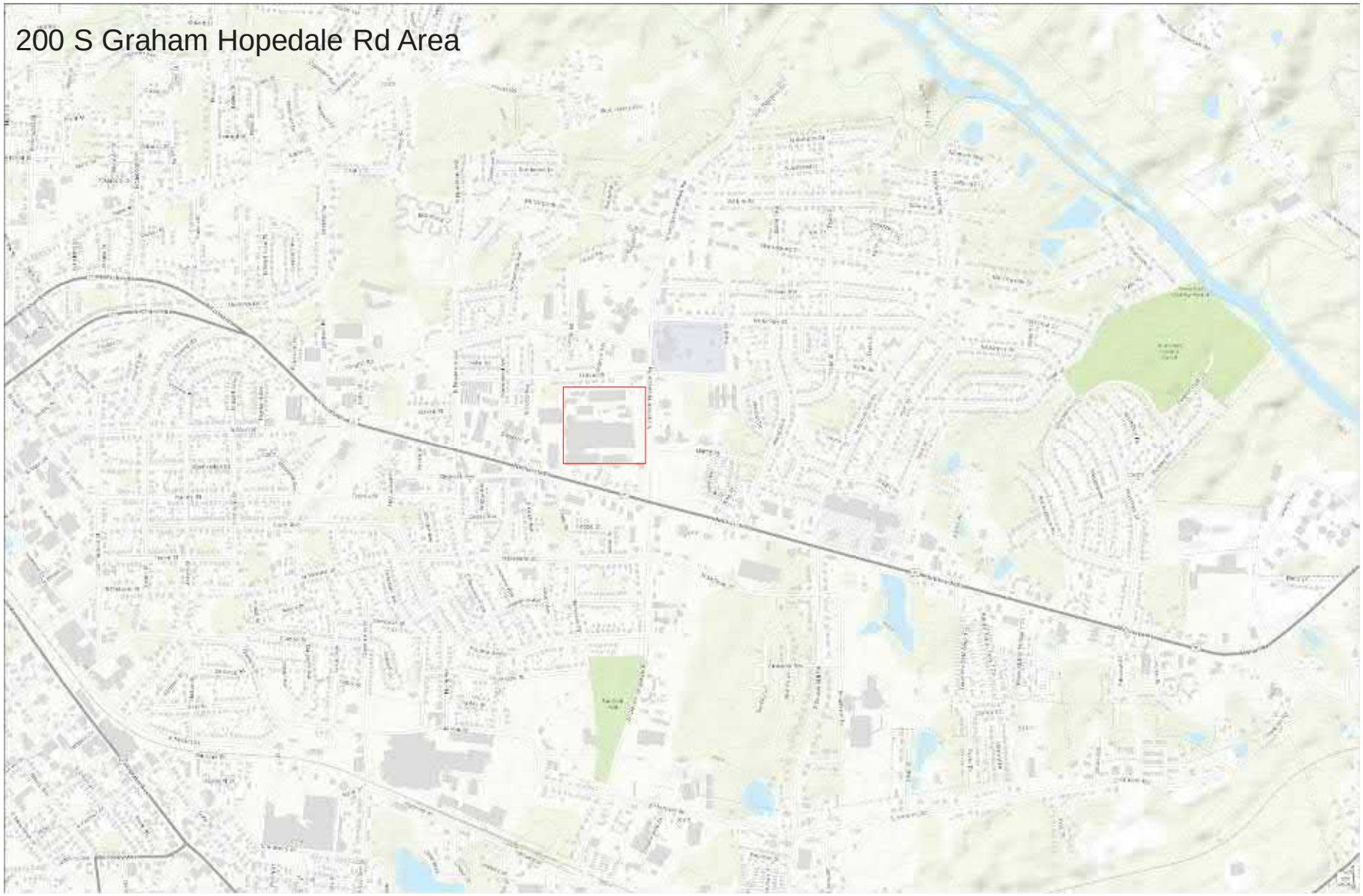
Local Geologic Lineament Tracing Information

NCGS - Geology Training and Continuing Education Event - (Alamance County)

Presentation by Mr. Phillip Bradley, PG
Assistant Section Chief for the North Carolina Geologic Survey

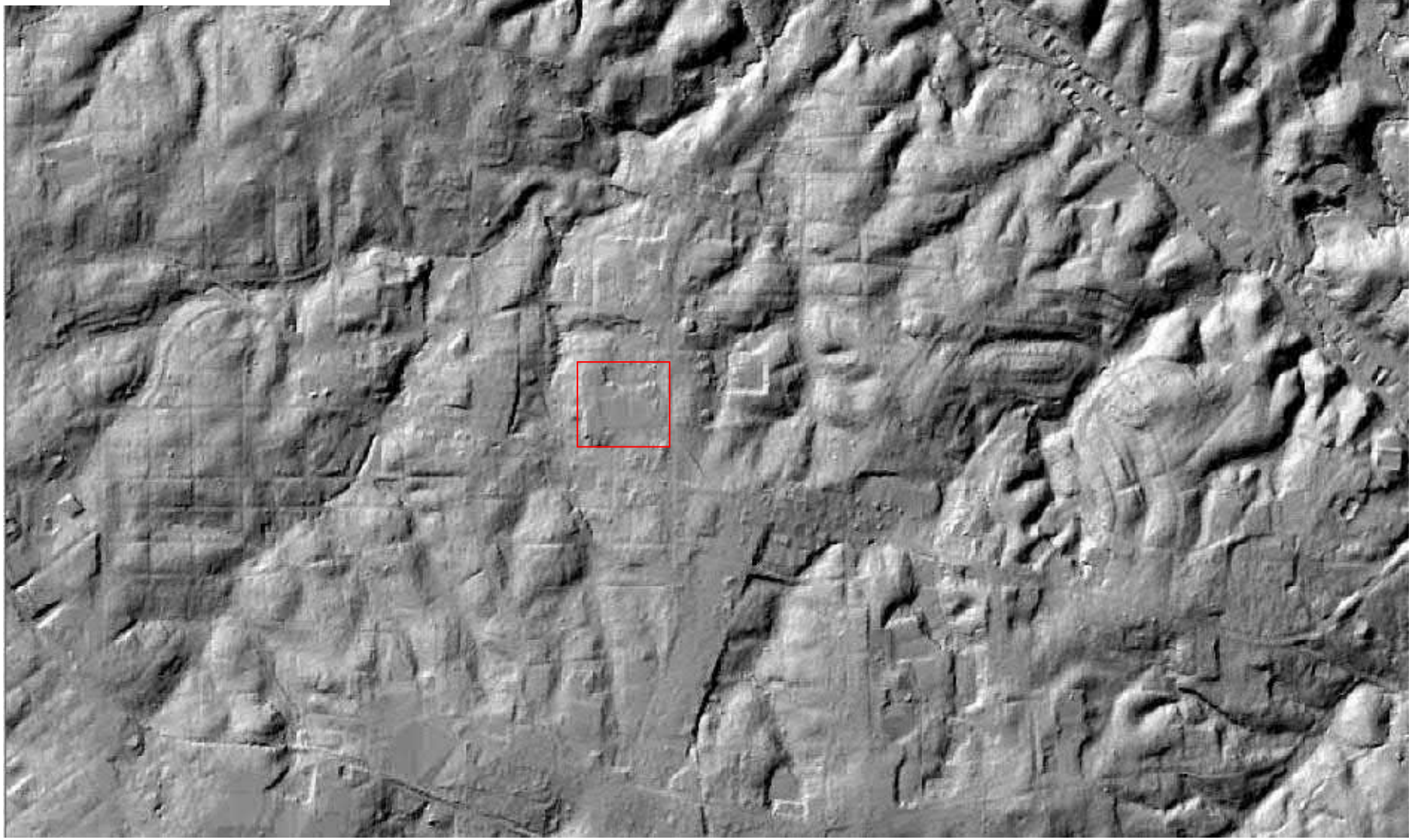
December 10, 2021

200 S Graham Hopedale Rd Area



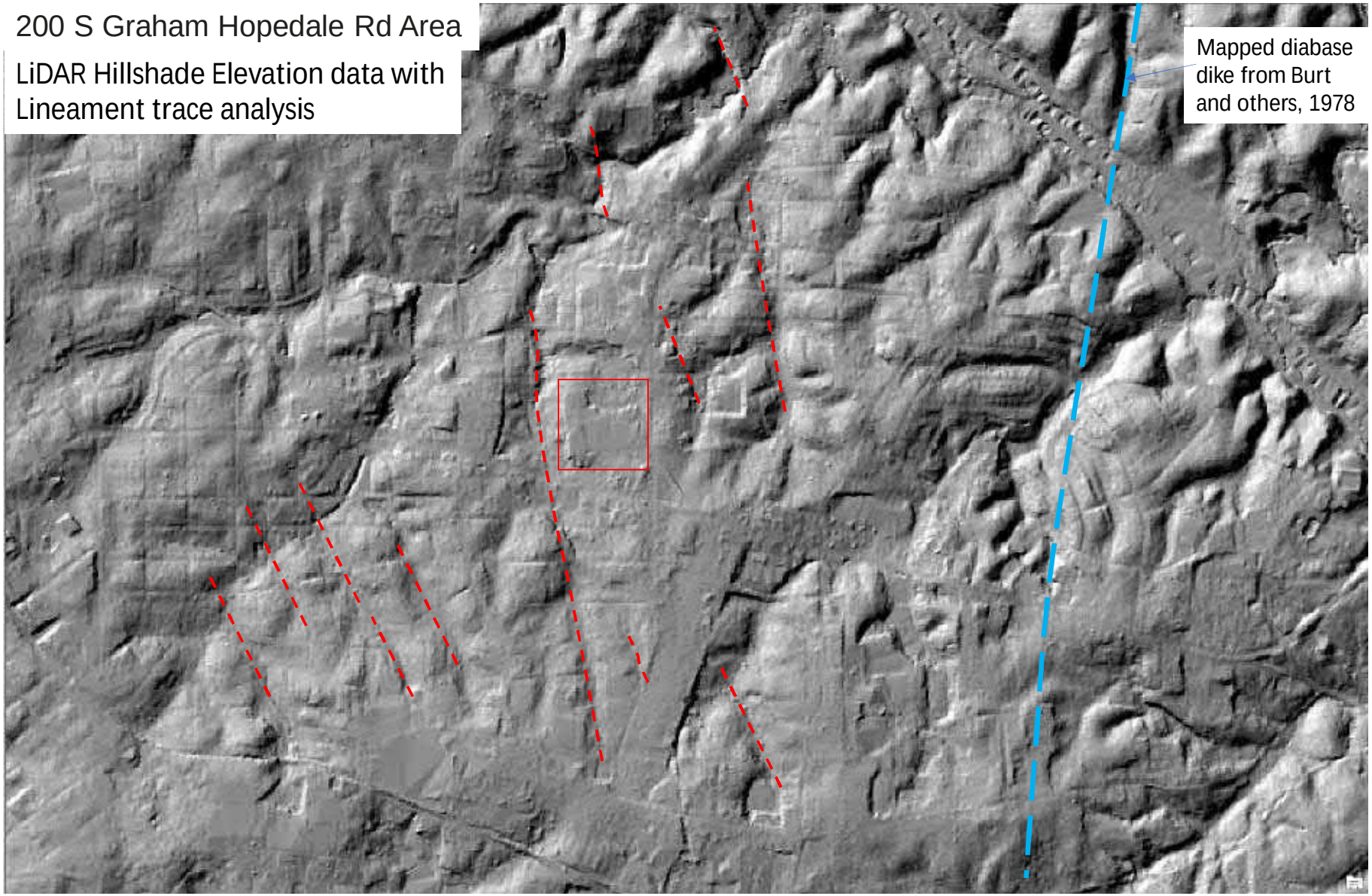
200 S Graham Hopedale Rd Area

LiDAR Hillshade Elevation data



200 S Graham Hopedale Rd Area

LiDAR Hillshade Elevation data with Lineament trace analysis



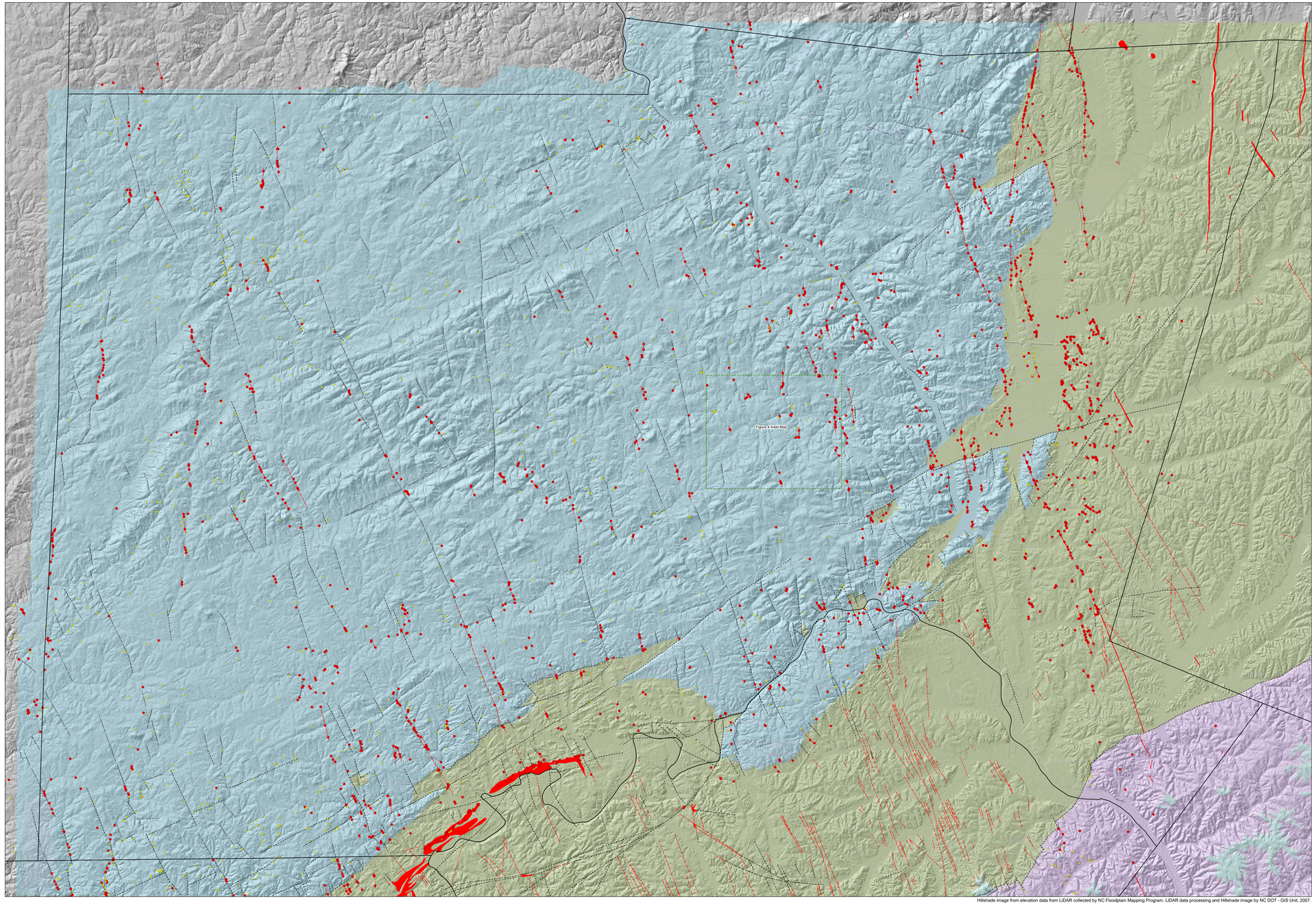
Burt, E.R., Carpenter, P.A., III, McDaniel, R.D., and Wilson, W.F., 1978, Diabase Dikes of the Eastern Piedmont of North Carolina: North Carolina Geological Survey Information Circular 23, 12 p. text plus map compilation.

Note – this map is poorly georeferenced

This Geologic map was funded in part by the USGS National Cooperative Geologic Mapping Program

North Carolina Department of Environmental Quality
Division of Energy, Mineral and Land Resources
Brian L. Wrenn, Division Director
Kenneth B. Taylor, State Geologist

North Carolina Geological Survey
Open File Report 2022-04



Hillshade image from elevation data from LiDAR collected by NC Floodplain Mapping Program. LiDAR data processing and Hillshade image by NC DOT - GIS Unit, 2007.

EXPLANATION OF MAP SYMBOLS
GROUNDWATER FEATURES

- indicates location of diabase boulder(s)
- indicates location of vuggy and/or massive quartz boulders
- inferred diabase dike
- inferred diabase dike intrusion along fault
- inferred fault location
- other geologic dikes distinct from diabase
- linear geomorphic feature interpreted from hillshade LiDAR - origin uncertain
- county boundaries
- diabase present as wide dike or sill

What is a Groundwater Features Map?
This Groundwater Features Map presents the approximate locations of geologic features that were identified during geologic mapping activities in Chatham County by the North Carolina Geological Survey (Bradley et al., 2022). The geologic mapping identified multiple geologic structures in the map area that are collectively interpreted as Groundwater Features.

Chatham County has abundant bedrock fractures. Groundwater is present in these fractures and groundwater is one of the main sources of potable water county wide. A Groundwater Feature, as designated on this map, may be a zone of increased bedrock fractures and may therefore be zones of increased groundwater flow. The Groundwater Feature may have important ramifications to groundwater availability and pollutant transport. This map is a tool for groundwater professionals, county staff, landowners, well drillers and other stakeholders to assist in their various decision-making processes as it pertains to groundwater issues.

When a groundwater professional is tasked with siting groundwater supply wells, waste disposal fields, investigating the extent of groundwater contamination or other tasks that involve groundwater quality and its flow in the subsurface, one of the first tasks is to develop a site-specific groundwater conceptual model. Using topographic maps along with their education and experience, a groundwater professional can make inferences that can approximate the groundwater conditions at a site. As other parameters (like the geology, precipitation amount, depth to groundwater, etc.) become available, the site conceptual model can be refined. This Groundwater Features Map will be very helpful in the initial stages of developing a site conceptual model. This process is usually done by groundwater professionals, however some of the basic concepts can be understood by the non-professional. An excellent resource for the groundwater professional and non-professionals interested in the techniques of developing a groundwater conceptual model for locations within the Piedmont and Mountains of NC is LeGrand (2004). The LeGrand (2004) guidance manual is written primarily for the groundwater professional, however key concepts will be understood by the non-professional.

Bedrock Fracture System
The geology of Chatham County is complex with many different rock types. The majority of the county is underlain by ancient metamorphosed volcanic rock known as the Carolina terrane (Slate belt). Smaller portions of the eastern and southern parts of the county are underlain by sedimentary rocks of the Triassic basin (Figure 1). Generally, the rocks of the Carolina terrane have more water-bearing fractures than the rocks of the Triassic basin.

Bedrock fractures can be very efficient conductors of groundwater and they may be interconnected in complex ways. The amount of water that fractures transmit can be highly variable and can result in drastically different well yields in a single neighborhood or street. Under natural (non-pumping) conditions, groundwater within fractures follows the local hydraulic gradient. In cases of strongly oriented fracture systems, the groundwater may follow the fractures and flow in directions inconsistent with the expected hydraulic gradient. When water is removed from a well by pumping, the natural groundwater flow directions are disturbed and groundwater from interconnected network of fractures is transported to the well. Undesirable contaminants (e.g. fecal coliform, nitrates, petroleum hydrocarbons, chlorinated hydrocarbons, metals, etc.) may also flow in the preferred pathways created by the fracture network. These contaminants can travel a great distance within the bedrock fracture systems.

Groundwater is recharged to the fracture system by the slow infiltration of rainwater through the soil and into the fractured rock. Often there are just a few highly fractured zones that transmit the infiltrating water to the deeper fracture network. Because of Chatham County's geologic history, the bedrock in parts of the county is more fractured and theses fractures can occur in a preferred orientation. Figures 2 and 3 present a rose diagram that displays directional data and the frequency of fracture data from outcrops in the Carolina terrane and Deep River Triassic Basin, respectively. The diagrams show a strong preferred orientation of fractures in a northwest – southeast direction that are consistent with the orientation of diabase dikes, brittle faults and lineaments. A northeast – southwest fracture pattern is also present.

What features are identified on the map?
The map includes point and line elements that are approximations of the occurrence of a relevant geologic feature, either observed in the field or interpreted from LiDAR hillshade elevation data.

Points
Diabase - The red circle points identify a location where a boulder(s) or cobble(s) of the rock type diabase was observed. Diabase is a mafic igneous rock with a composition similar to ocean floor basalts which intruded the Piedmont approximately 200 million years ago. Diabase occurs in narrow, nearly vertical sheets called dikes. The red circle locations mark the surface trace of a diabase dike. Diabase dikes are known by groundwater professionals to be good places to install productive groundwater wells in comparison to the surrounding rocks.

Quartz – Quartz is a common rock forming mineral and can be present as gravel- to boulder-sized debris throughout Chatham County. Zones of quartz can form associated with faulting and other geologic environments. In the map area, quartz cobbles and boulders are common. The quartz may be an indication of an area that was faulted in the geologic past and likely has abundant bedrock fractures.

Quartz can also occur associated with locations that have undergone hydrothermal alteration. Rocks that show signs of hydrothermal alteration are common in parts of Chatham and adjacent counties. The hydrothermal alteration is the reason there are historic copper mines in the southwest portion of Chatham County. Hydrothermal alteration occurs when water, heated by magma, permeates through rocks or deposits and changes their composition by adding, removing or redistributing chemical elements. Hydrothermal alteration often creates zones of the mineral quartz. Quartz formed during faulting and hydrothermal alteration can look identical. Site specific investigations may be needed if a site has abundant quartz debris to determine if it may be an indication of presence of abundant fractures or another reason.

Lines
Inferred diabase dike – A line representing the interpreted location of a diabase dike is provided when the distribution of diabase points and/or topography implies the presence of a mappable dike. Diabase dikes are present as thin (up to 200 feet wide – but more typically are a few feet to 40 feet wide) bodies. Diabase can also occur as sills within the sedimentary rocks of the Triassic basin. Sills are tabular bodies that are oriented generally parallel to the bedding of the Triassic sediments. The location of the line is an approximation and should be confirmed by a site-specific field investigation.

The orientation of diabase dikes can vary. Most are near-vertical, but some have dips as low as 45 degrees have been observed. As such, the surface trace does not necessarily match the subsurface location. When attempting to intersect a diabase dike to improve potential well yield, knowledge of the subsurface orientation of the diabase dike is needed. Diabase dikes can dip in any direction.

Inferred brittle fault - A line representing the interpreted location of a brittle fault is provided when geologic units abruptly end (truncated) and/or topography implies the presence of a mappable fault. The location of the line is an approximation and should be confirmed by a site-specific field investigation. On the map, a fault is designated as a line; however, a fault will have a zone of fractured rock on either side of the fault line – called a fault zone or damage zone. Faults can vary widely in length and width. Major brittle faults can extend for miles and have fault zones that are 100's to 1000's of feet wide. Smaller faults can extend for inches to 100's of feet. The general rule-of-thumb is an area that has a brittle fault is likely to have more fractures in the bedrock than a location away from the fault. Also, there is typically a decrease in the intensity of bedrock fractures as one moves farther away from the fault.

Linear geomorphic feature interpreted from hillshade LiDAR - A lineament is a linear (relatively straight) topographic feature. A naturally occurring lineament usually reflects characteristics of the underlying rocks. LiDAR elevation data for Chatham County became available in ca. 2007. LiDAR (Light Detection And Ranging) elevation data is acquired using an airplane-mounted laser transmitter that measures very accurate elevation data. This data set has revealed an extraordinary network of lineaments that are parallel to diabase dikes and known orientations of brittle faults. Some of these lineaments can be traced for multiple miles across Chatham County. The lineaments are interpreted to be likely fracture zones; however, field observations could not confirm the presence of each potential brittle fault.

The map area has hundreds of lineaments when viewed at varying scales. Only the major lineaments that are easily visible at 50,000- to 100,000-scale are identified on the Groundwater Features Map. Like brittle faults, lineaments can widely vary in length and width. Major lineaments extend for miles and have linear topographic expressions that are 100's to greater than 500 feet wide in some locations.

What features are not identified on the map?
Multiple unmarked geomorphic lineaments are visible when viewed at 24,000- to 50,000-scale on the data from LiDAR. These minor lineaments extend for short distances (100's to 1000's of feet). Minor lineaments are not indicated on the map but can be identified by a close inspection of the map. These minor lineaments may have important implications for site-specific investigations. Figure 4 shows an example of the identification of minor lineaments at a more detailed scale.

How to use the map
This Groundwater Features Map can be utilized for a variety of applications including: 1) locations to site groundwater wells to improve yield, 2) identify vulnerable locations and/or flow paths for groundwater impact, 3) identify groundwater recharge areas (useful to designate areas of protection), and 4) identify groundwater discharge areas.

When using this map, it is important to note that the size of data points and line widths are exaggerated compared to the size of data stations in the field. For example, all diabase stations are represented by red dots with a diameter of 0.05 inches on the map, equivalent to approximately 210 feet across in real-life. In Chatham County, diabase stations can range in size from several boulders that measure more than 3 feet in diameter to a few cobbles measuring less than one foot. Despite obvious differences in size, all diabase station locations are represented by the same symbol. The same is true for the features represented by lines on this map. While the lines that represent diabase dikes are approximately 0.02 inches wide on the map (about 80 feet in real-life), the real width of dikes covers a wide range. Therefore, the size of symbols on this map is not necessarily representative of the true size of groundwater features.

Example Potential Use of the Data
Siting of groundwater wells: This dataset can help land owners, environmental professionals, well drillers, and other stakeholders site productive groundwater wells. Wells installed within zones of increased fractures (a Groundwater Feature) will have a higher likelihood of being a productive well.

Mitigating the impact of well interference: Pumping a well removes groundwater and lowers the water level in the well and nearby rock as water is diverted toward the well. If multiple wells are installed in the same fractured network, they may compete for water and cause an enhanced lowering of the water table. In locations in the vicinity of Groundwater Features, the lowering of the water table may be more pronounced and may extend in a preferred direction due to the linear nature of the Groundwater Feature. Understanding the relationship of the location of water wells and the bedrock fracture network is important to avoid and/or help mitigate well interference issues.

Groundwater vulnerability: Groundwater Features are potential locations of local groundwater recharge and/or areas in which the groundwater may be more vulnerable to an impact from anthropogenic contamination due to the increased fractures in the underlying bedrock. Groundwater vulnerability is a measure of how easy or difficult potential contaminants can migrate from the surface or near surface to groundwater. The rate of infiltration is highly dependent on the soil and contaminant properties, which can vary greatly from location to location. This dataset of Groundwater Features can be used as part of a groundwater vulnerability study. The presence of a Groundwater Feature does not necessarily indicate vulnerable groundwater. The dataset can be used in the decision-making process to determine the extent of site-specific investigations into the vulnerability of the groundwater when siting of waste disposal facilities, chemical storage, or other facilities that have the potential to impact groundwater if not properly managed.

References
Bradley, P.J. (with contributions in alphabetical order from: Bechtel, R.; Blocher, W.B.; Butler, R.J.; Clark, T.W.; Gay, N.K.; Grimley, D.A.; Hanna, H.D.; Malaska, M.J.; Peach, B.T.; Rice, A.K.; Stoddard, E.F.; and Watson, M.E.), 2022, Compiled geologic map of Chatham County and surrounding areas, North Carolina: North Carolina Geological Survey Open-file Report 2022-03, scale 1:50,000, in color.

LeGrand, Harry, Sr. 2004, A Master Conceptual Model for Hydrogeological Site Characterization in the Piedmont and Mountain Region of North Carolina, North Carolina Department of Environment and Natural Resources- Division of Water Quality-Groundwater Section, 38 pages. http://digital.ncdcr.gov/cdm/ref/collection/p249901coll22/id/1360

N
W E
S

Groundwater Features Map of Chatham County and Surrounding Areas, North Carolina.

By
Bradley, Philip J., NC Department of Environmental Quality, North Carolina Geological Survey, Raleigh, NC, pbradley@ncdenr.gov

Bolich, Richard E., Retired from NC Department of Environmental Quality, Division of Water Resources, Raleigh, NC

Map preparation and editing by Emily K. Michael

SCALE 1:50,000
2 1 0 2 4 6 Kilometers
1 0.5 0 1 2 3 Miles

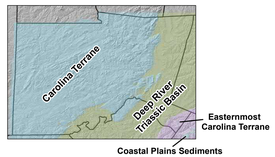


Figure 1: Generalized Geologic Map of Chatham County and Surrounding Areas

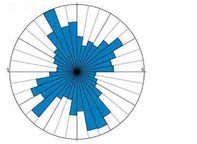


Figure 2: Unidirectional Rose Diagram of Fracture Orientations in Carolina Terrane Rocks
N = 2,048
Outer Circle = 5%

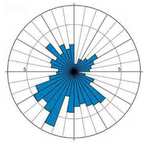


Figure 3: Unidirectional Rose Diagram of Fracture Orientations in the Deep River Triassic Basin
N = 488
Outer Circle = 7%

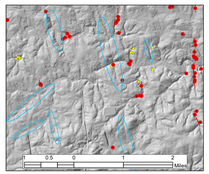


Figure 4: Example of identification of minor lineaments. Minor lineaments are indicated by blue ellipses. Other unmarked minor lineaments are present in area.

This is a derivative map with data collected during geologic mapping that was funded in part by the USGS National Cooperative Geologic Mapping Program under STATEMAP award numbers 01HQAG0061, 2001; 06HQAG0033, 2006; 07HQAG0140, 2007; G10AC00425, 2010; G11AC20296, 2011;G12AC20008, 2012; G13AC00204, 2013; G14AC00230, 2014; G15AC00237, 2015; G16AC00288, 2016; G17AC00284, 2017; G18AC00205, 2018; G19AC00235, 2019 and G20AC00249, 2020.

The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the U.S. Government. This map and explanatory information is submitted for publication with the understanding that the United States Government is authorized to reproduce and distribute reprints for governmental use.

DWR
Division of Water Resources

Appendix D

Excerpts from Historical Investigation Reports

SHALLOW SUBSURFACE INVESTIGATION OF SUMP AND DRAIN LINE AREAS AT THE AT&T TARHEEL ARMY MISSILE PLANT BURLINGTON, NORTH CAROLINA

August 1993

Prepared for:

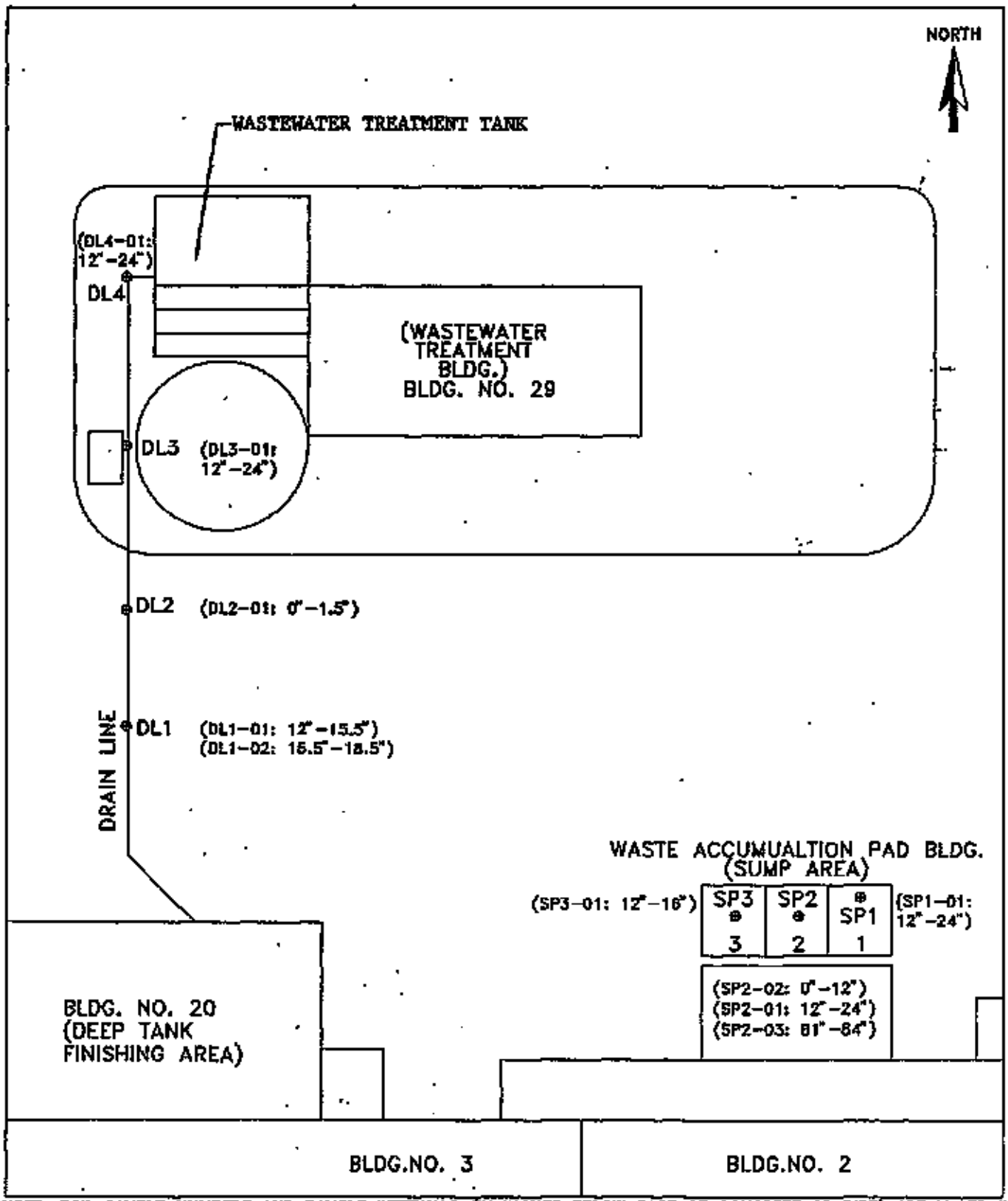
AT&T
Guilford Center
P.O. Box 25000
Greensboro, North Carolina 27420-5000

Prepared by

ROY F. WESTON, INC.
1000 Perimeter Park Drive, Suite E
Morrisville, North Carolina 27560

Work Order No. 02400-023-002

MKII\RPT:02400023.002\at&ttrhl.fm



NOTE: SOIL SAMPLE NUMBERS AND SAMPLE INTERVALS (IN INCHES BELOW BASE OF CONCRETE OR PIPE) ARE LISTED IN PARENTHESES NEXT TO SAMPLE LOCATIONS

SCALE (Feet)
0 20
10 30

WESTON

FIGURE	2-1
DATE	12/7/92
REVISION	0
DRAWN BY	N.T., W.H.
FILE	ATTFIG21

SAMPLING LOCATIONS FOR SUMP AND DRAIN LINE
AT&T
TARHEEL ARMY MISSILE PLANT
BURLINGTON, NORTH CAROLINA

Table 3–1

Results of Volatile Organic Compound Analyses for Samples Collected from Sump Area

SOIL BORING # :	SP1	SP2	SP2	SP2–reprep	SP2	SP3	RB–reprep
SAMPLE #: (ATTBR–)	SP1–01	SP2–01	SP2–02	SP2–03	SP2–04	SP3–01	RB–01
SAMPLE INTERVAL :	12" – 24"	12" – 24"	0" – 12"	81" – 84"	125" (GW)	12" – 16"	
SAMPLE DATE :	8/20/92	8/20/92	8/20/92	8/20/92	8/26/92	8/20/92	8/20/92
PARAMETER							
Carbon Disulfide	< 7	< 68	< 7	< 6	< 5	< 6	4 J
1,1–Dichloroethene	< 7	< 68	< 7	< 6	130	64	< 5
1,1–Dichloroethane	< 7	27	14	< 6	220 E	180	< 5
1,2–Dichloroethene (total)	< 7	< 68	< 7	< 6	460 E	130	< 5
Chloroform	< 7	< 68	< 7	< 6	< 5	< 6	5
1,2–Dichloroethane	< 7	< 68	< 7	< 6	100	< 6	< 5
2–Butanone	< 13	<140	< 13	6 J	< 10	17	< 10
1,1,1–Trichloroethane	5	160	76	< 6	310 E	1,600	< 5
Trichloroethene	10	94	13	< 6	860 E	260	< 5
1,1,2–Trichloroethane	< 7	< 68	< 7	< 6	8	< 6	< 5
Tetrachloroethene	400 E	100,000 E	3,000,000 E	4 J	13,000 E	19,000 E	11
Toluene	3	120	13	< 6	5	120	< 5
Ethylbenzene	< 7	36 J	3 J	< 6	< 5	54	< 5
Xylene (total)	< 7	220	17	< 6	< 5	350	< 5
Trichlorotrifloroethane	NR	NR	NR	NR	NR	2000 JN	NR
Unknown C10H16	NR	NR	NR	NR	NR	200 JN	NR

Notes: Units are in micrograms per kilogram (ug/kg), except for SP2–04, RB–01, and RB–01 reprep, which are in micrograms per liter (ug/L).
< indicates that material was analyzed for but not detected; the number is the minimum quantitation limit.
J indicates an estimated value.
RB indicates rinse blank.
Sample interval is relative to bottom of concrete of sump; for sample SP2–04, a groundwater sample was collected from borehole SP–2, with SP–2 total depth equal to 125 inches.
E indicates results for a parameter required one or more dilutions to quantitate; the concentration presented indicates the results of the analysis for that compound conducted at the final dilution.
Reprep indicates reanalysis of the sample was required due to problems encountered during the initial analysis.
JN indicates an estimated value for a Tentatively Identified Compound.

Table 3–2

Results of Metals Analyses for Samples Collected from Sump and Drain Line Areas

AREA	Sump	Sump	Sump	Sump	Sump	Sump	Sump
SOIL BORING # :	SP1	SP2	SP2	SP2	SP2	SP3	RB
SAMPLE #: (ATTBR–)	SP1–01	SP2–01	SP2–02	SP2–03	SP2–04	SP3–01	RB–01
SAMPLE INTERVAL :	12" – 24"	12" – 24"	0" – 12"	81" – 84"	125" (GW)	12" – 16"	
SAMPLE DATE :	8/20/92	8/20/92	8/20/92	8/20/92	8/26/92	8/20/92	8/20/92
PARAMETER							
Silver	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA
Chromium	57.7	58.3	57	7.6	0.48	24.6	<0.020
Copper	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA
Lead	10.6	4.8	3.6	1.9	0.063	4.3	<0.0020
Zinc	55.4	36.0	33.8	50.1	2.6	32.5	<0.010

AREA	Drain Line	Drain Line	Drain Line	Drain Line	Drain Line	Drain Line	
SOIL BORING # :	DL1	DL1	DL2	DL3	DL4	RB	Back–
SAMPLE #: (ATTBR–)	DL1–01	DL1–02	DL2–01	DL3–01	DL4–01	RB–02	Ground*
SAMPLE INTERVAL :	12" – 15.5"	15.5" – 18.5"	0" – 1"	12" – 24"	12" – 24"		
SAMPLE DATE :	8/26/92	8/26/92	8/26/92	8/26/92	8/26/92	8/26/92	
PARAMETER							
Silver	<2.8	<3.0	<3.3	<3.4	<3.3	<0.030	<0.510
Cadmium	<0.47	<0.51	<0.55	<0.56	0.65	<0.0050	<0.486
Chromium	39.3	11.8	28.4	72.7	67.2	<0.020	23.1
Copper	4.2	2.8	45.5	28.4	32.2	<0.020	39.9
Nickel	<1.9	<2.0	22.0	29.7	33.1	<0.020	4.01
Lead	14.2	6.2	11.4	7.0	25.3	0.0042	<5.43
Zinc	10.2	5.6	43.6	28.0	29.4	0.014	35.1

Notes: Units are milligrams per kilogram (mg/kg), except SP2–04, RB–01, and RB–02, which are in milligrams per liter (mg/L).
< indicates that material was analyzed for but not detected; the number is the minimum quantitation limit.
RB indicates rinse blank.
NA indicates Not Applicable – parameter not included in analytic suite.
Sample interval: for sump samples, the interval is relative to the bottom of concrete of sump; for drain line samples, the interval is relative to the bottom of pipe; for sump sample SP2–04, a groundwater sample was collected from borehole SP–2, with SP–2 having a total depth of 125 inches.
* Background soil sample was collected by others during a previous study conducted at the site.

COMPREHENSIVE SITE ASSESSMENT
SUBSURFACE SOIL AND GROUNDWATER INVESTIGATION AT THE WASTE ACCUMULATION PAD AND UNDERGROUND STORAGE TANK AREAS
TARHEEL ARMY MISSILE PLANT
BURLINGTON, NORTH CAROLINA

Prepared for:

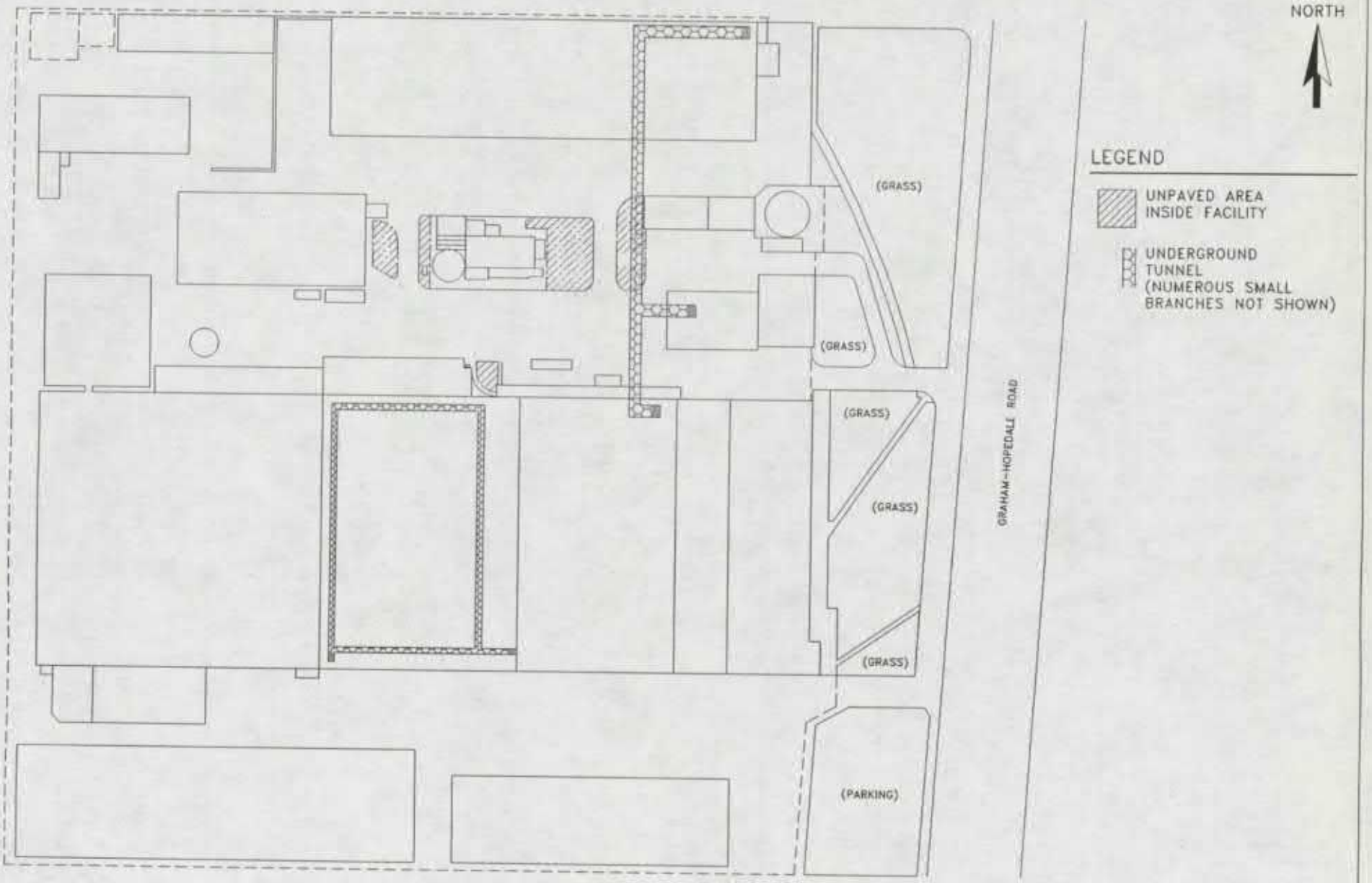
AT&T
Guilford Center
P.O. Box 25000
Greensboro, North Carolina 27420-5000

Prepared by:

ROY F. WESTON, INC.
1000 Perimeter Park Drive
Suite E
Morrisville, North Carolina 27560

Work Order No. 2400-27-01

26 August 1993



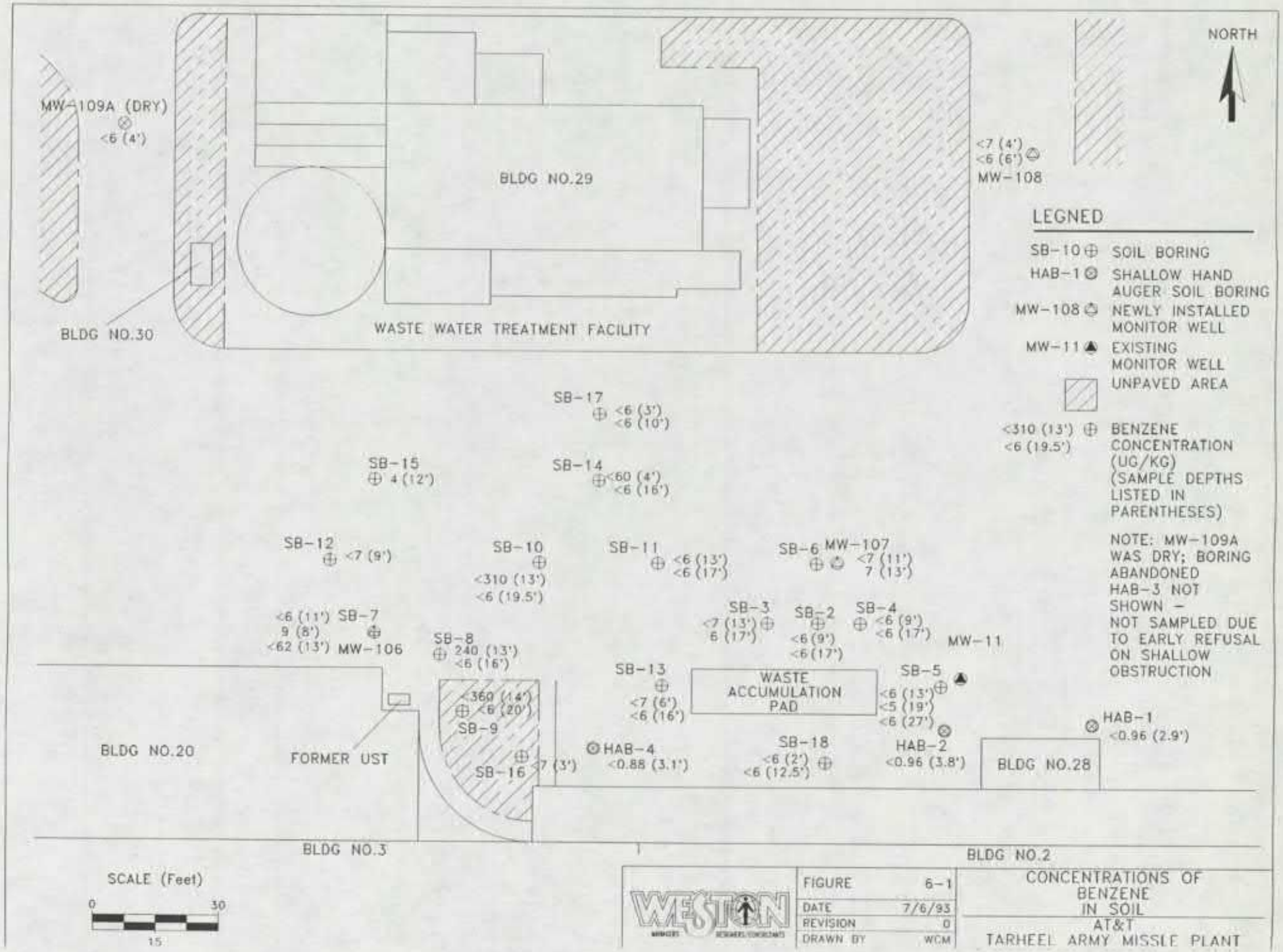
SCALE (Feet)

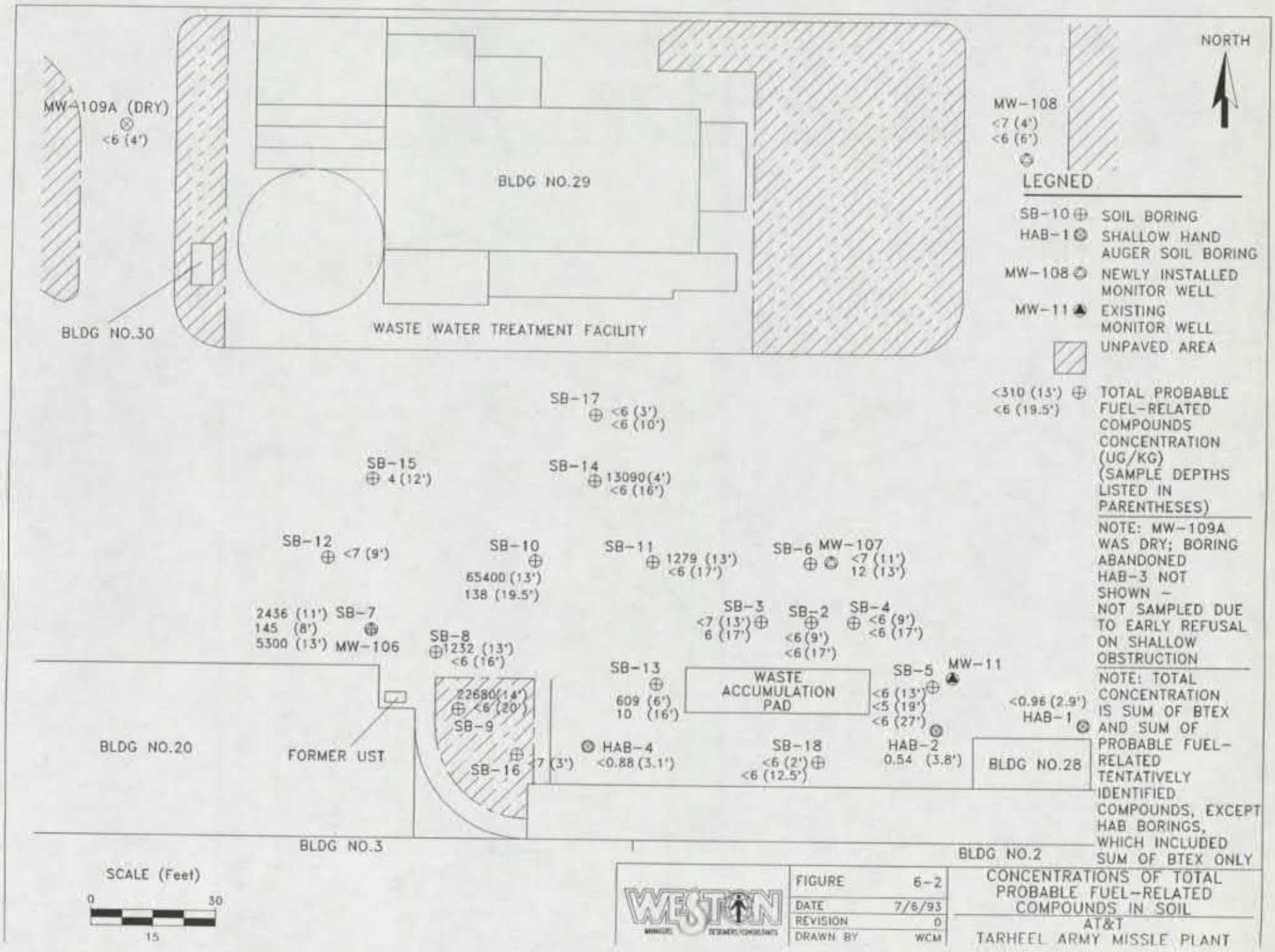
0 50 100

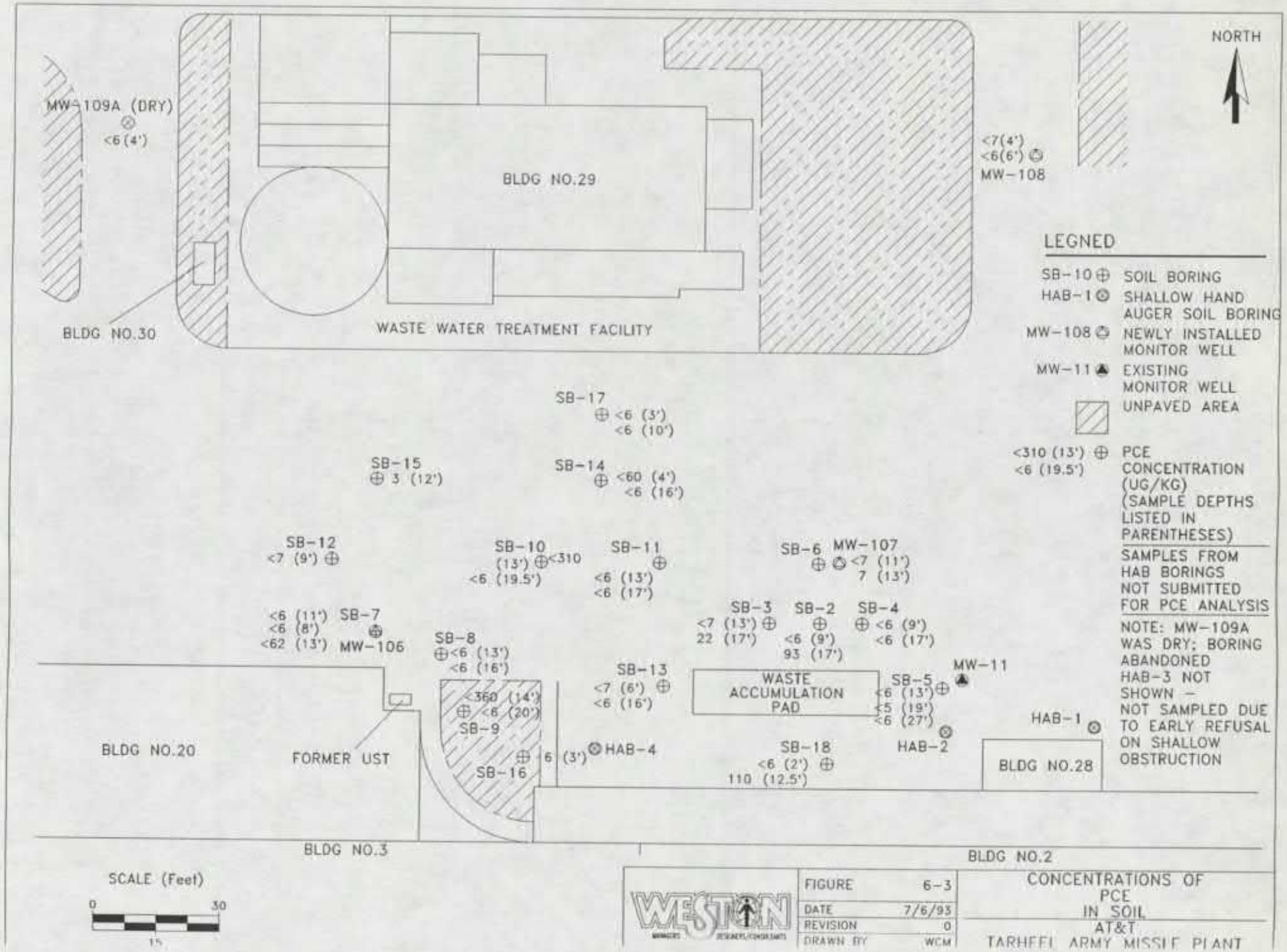
25 75 150

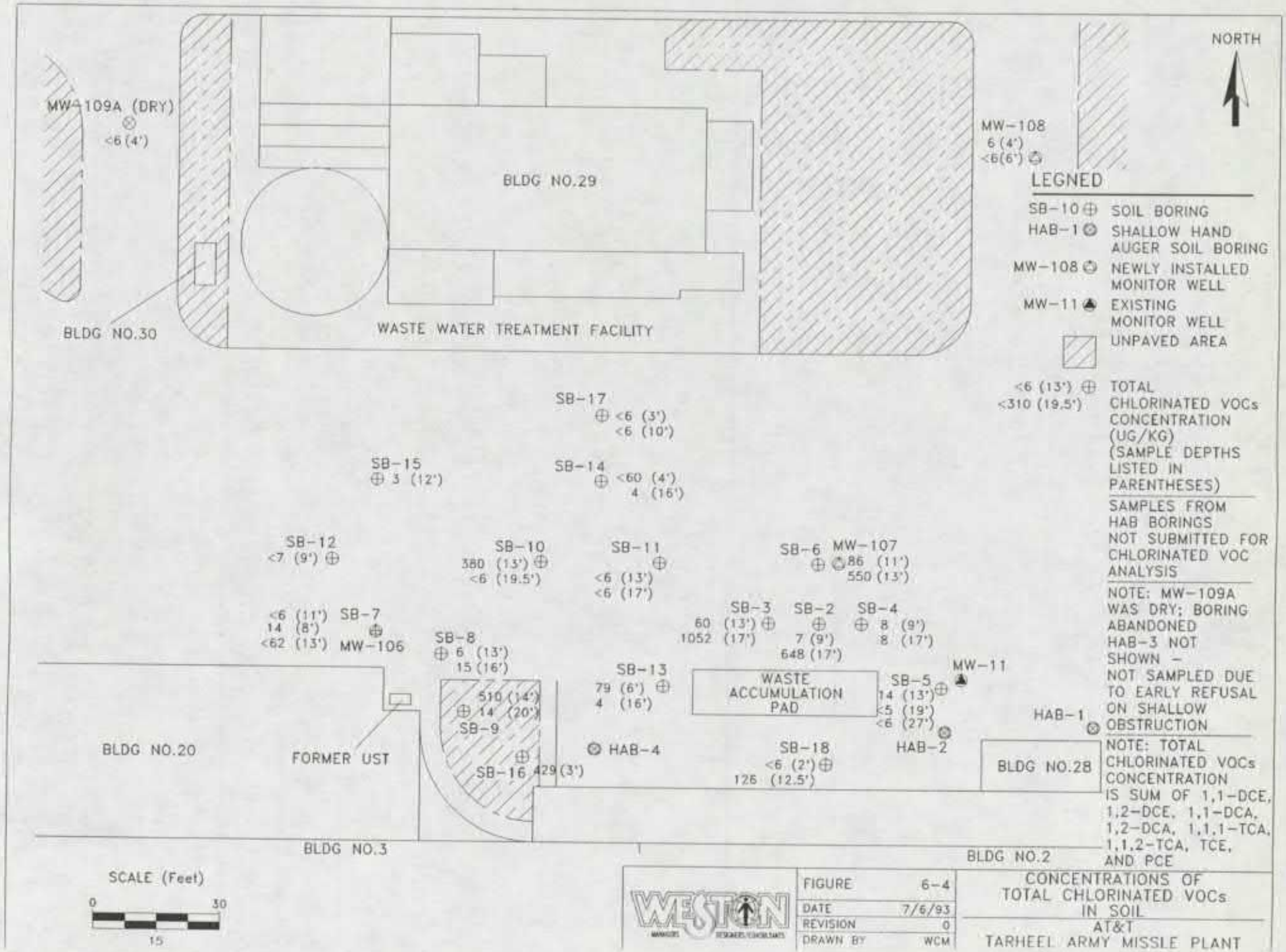
WESTON	FIGURE	3-2
	DATE	7/2/93
	REVISION	0
	DRAWN BY	WCM

APPROXIMATE LOCATION OF UNDERGROUND TUNNELS INTERCEPTING GROUNDWATER
AT&T
TARHEEL ARMY MISSLE PLANT


NORTH
MW-109A (DRY)
<6 (4')
BLDG NO.29
BLDG NO.30
WASTE WATER TREATMENT FACILITY
<7 (4')
<6 (6')
MW-108
LEGNED
SB-10 SOIL BORING
HAB-1 SHALLOW HAND AUGER SOIL BORING
MW-108 NEWLY INSTALLED MONITOR WELL
MW-11 EXISTING MONITOR WELL
UNPAVED AREA
<310 (13')
<6 (19.5')
BENZENE CONCENTRATION (UG/KG) (SAMPLE DEPTHS LISTED IN PARENTHESES)
NOTE: MW-109A WAS DRY; BORING ABANDONED HAB-3 NOT SHOWN - NOT SAMPLED DUE TO EARLY REFUSAL ON SHALLOW OBSTRUCTION
SB-17
<6 (3')
<6 (10')
SB-15
4 (12')
SB-14
<60 (4')
<6 (16')
SB-12
<7 (9')
SB-10
<310 (13')
<6 (19.5')
SB-11
<6 (13')
<6 (17')
SB-6
MW-107
<7 (11')
7 (13')
<6 (11')
9 (8')
<62 (13')
SB-7
MW-106
SB-8
240 (13')
<6 (16')
SB-3
<7 (13')
6 (17')
SB-2
<6 (9')
<6 (17')
SB-4
<6 (9')
<6 (17')
MW-11
SB-13
<7 (6')
<6 (16')
WASTE ACCUMULATION PAD
SB-5
<6 (13')
<5 (19')
<6 (27')
<360 (14')
<6 (20')
SB-9
HAB-1
<0.96 (2.9')
BLDG NO.20
FORMER UST
SB-16
<7 (3')
HAB-4
<0.88 (3.1')
SB-18
<6 (2')
<6 (12.5')
HAB-2
<0.96 (3.8')
BLDG NO.28
BLDG NO.3
BLDG NO.2
SCALE (Feet)
0
30
15
WESTON
FIGURE 6-1
DATE 7/6/93
REVISION 0
DRAWN BY WCM
CONCENTRATIONS OF BENZENE IN SOIL
AT&T
TARHEEL ARMY MISSLE PLANT


NORTH
MW-109A (DRY)
<6 (4')
BLDG NO.29
BLDG NO.30
WASTE WATER TREATMENT FACILITY
MW-108
<7 (4')
<6 (5')
LEGNED
SB-10 SOIL BORING
HAB-1 SHALLOW HAND AUGER SOIL BORING
MW-108 NEWLY INSTALLED MONITOR WELL
MW-11 EXISTING MONITOR WELL
UNPAVED AREA
<310 (13') <6 (19.5') TOTAL PROBABLE FUEL-RELATED COMPOUNDS CONCENTRATION (UG/KG) (SAMPLE DEPTHS LISTED IN PARENTHESES)
NOTE: MW-109A WAS DRY; BORING ABANDONED HAB-3 NOT SHOWN - NOT SAMPLED DUE TO EARLY REFUSAL ON SHALLOW OBSTRUCTION
NOTE: TOTAL CONCENTRATION IS SUM OF BTEX AND SUM OF PROBABLE FUEL-RELATED TENTATIVELY IDENTIFIED COMPOUNDS, EXCEPT HAB BORINGS, WHICH INCLUDED SUM OF BTEX ONLY
SB-17
<6 (3')
<6 (10')
SB-15
4 (12')
SB-14
13090(4')
<6 (16')
SB-12
<7 (9')
SB-10
65400 (13')
138 (19.5')
SB-11
1279 (13')
<6 (17')
SB-6 MW-107
<7 (11')
12 (13')
2436 (11') SB-7
145 (8')
5300 (13') MW-106
SB-8
1232 (13')
<6 (16')
SB-3
<7 (13')
6 (17')
SB-2
<6 (9')
<6 (17')
SB-4
<6 (9')
<6 (17')
SB-13
609 (6')
10 (16')
WASTE ACCUMULATION PAD
SB-5
MW-11
<6 (13')
<5 (19')
<6 (27')
22680(14')
<6 (20')
SB-9
SB-16
7 (3')
HAB-4
<0.88 (3.1')
SB-18
<6 (2')
<6 (12.5')
HAB-2
0.54 (3.8')
<0.96 (2.9')
HAB-1
BLDG NO.28
BLDG NO.20
FORMER UST
BLDG NO.3
BLDG NO.2
SCALE (Feet)
0
30
15
WESTON
FIGURE 6-2
DATE 7/6/93
REVISION 0
DRAWN BY WCM
CONCENTRATIONS OF TOTAL PROBABLE FUEL-RELATED COMPOUNDS IN SOIL
AT&T
TARHEEL ARMY MISSLE PLANT


NORTH
MW-109A (DRY)
<6 (4')
BLDG NO.29
<7(4')
<6(6')
MW-108
BLDG NO.30
WASTE WATER TREATMENT FACILITY
LEGNED
SB-10 SOIL BORING
HAB-1 SHALLOW HAND AUGER SOIL BORING
MW-108 NEWLY INSTALLED MONITOR WELL
MW-11 EXISTING MONITOR WELL
UNPAVED AREA
<310 (13') <6 (19.5') PCE CONCENTRATION (UG/KG) (SAMPLE DEPTHS LISTED IN PARENTHESES)
SAMPLES FROM HAB BORINGS NOT SUBMITTED FOR PCE ANALYSIS
NOTE: MW-109A WAS DRY; BORING ABANDONED HAB-3 NOT SHOWN - NOT SAMPLED DUE TO EARLY REFUSAL ON SHALLOW OBSTRUCTION
SB-17
<6 (3')
<6 (10')
SB-15
3 (12')
SB-14
<60 (4')
<6 (16')
SB-12
<7 (9')
SB-10
(13') <310
<6 (19.5')
SB-11
<6 (13')
<6 (17')
SB-6 MW-107
<7 (11')
7 (13')
<6 (11') SB-7
<6 (8')
<62 (13') MW-106
SB-8
<6 (13')
<6 (16')
SB-3
<7 (13')
22 (17')
SB-2
<6 (9')
93 (17')
SB-4
<6 (9')
<6 (17')
MW-11
SB-13
<7 (6')
<6 (16')
WASTE ACCUMULATION PAD
SB-5
<6 (13')
<5 (19')
<6 (27')
<360 (14')
<6 (20')
SB-9
HAB-1
BLDG NO.20
FORMER UST
SB-16
6 (3')
HAB-4
SB-18
<6 (2')
110 (12.5')
HAB-2
BLDG NO.28
BLDG NO.3
BLDG NO.2
SCALE (Feet)
0
30
15
WESTON
FIGURE 6-3
DATE 7/6/93
REVISION 0
DRAWN BY WCM
CONCENTRATIONS OF PCE IN SOIL
AT&T
TARHEEL ARMY MISSILE PLANT


NORTH
MW-109A (DRY)
<6 (4')
BLDG NO.29
MW-108
6 (4')
<6(6')
BLDG NO.30
WASTE WATER TREATMENT FACILITY
LEGNED
SB-10 SOIL BORING
HAB-1 SHALLOW HAND AUGER SOIL BORING
MW-108 NEWLY INSTALLED MONITOR WELL
MW-11 EXISTING MONITOR WELL
UNPAVED AREA
<6 (13') <310 (19.5') TOTAL CHLORINATED VOCs CONCENTRATION (UG/KG) (SAMPLE DEPTHS LISTED IN PARENTHESES)
SAMPLES FROM HAB BORINGS NOT SUBMITTED FOR CHLORINATED VOC ANALYSIS
NOTE: MW-109A WAS DRY; BORING ABANDONED HAB-3 NOT SHOWN - NOT SAMPLED DUE TO EARLY REFUSAL ON SHALLOW OBSTRUCTION
NOTE: TOTAL CHLORINATED VOCs CONCENTRATION IS SUM OF 1,1-DCE, 1,2-DCE, 1,1-DCA, 1,2-DCA, 1,1,1-TCA, 1,1,2-TCA, TCE, AND PCE
SB-17
<6 (3')
<6 (10')
SB-15
3 (12')
SB-14
<60 (4')
4 (16')
SB-12
<7 (9')
SB-10
380 (13')
<6 (19.5')
SB-11
<6 (13')
<6 (17')
SB-6
MW-107
86 (11')
550 (13')
<6 (11')
14 (8')
<62 (13')
SB-7
MW-106
SB-8
6 (13')
15 (16')
510 (14')
14 (20')
SB-9
SB-16
429 (3')
SB-3
60 (13')
1052 (17')
SB-2
7 (9')
648 (17')
SB-4
8 (9')
8 (17')
SB-13
79 (6')
4 (16')
WASTE ACCUMULATION PAD
SB-5
14 (13')
<5 (19')
<6 (27')
MW-11
HAB-1
HAB-2
HAB-4
SB-18
<6 (2')
126 (12.5')
BLDG NO.28
BLDG NO.20
FORMER UST
BLDG NO.3
BLDG NO.2
SCALE (Feet)
0
30
15
WESTON
FIGURE 6-4
DATE 7/6/93
REVISION 0
DRAWN BY WCM
CONCENTRATIONS OF TOTAL CHLORINATED VOCs IN SOIL
AT&T
TARHEEL ARMY MISSLE PLANT

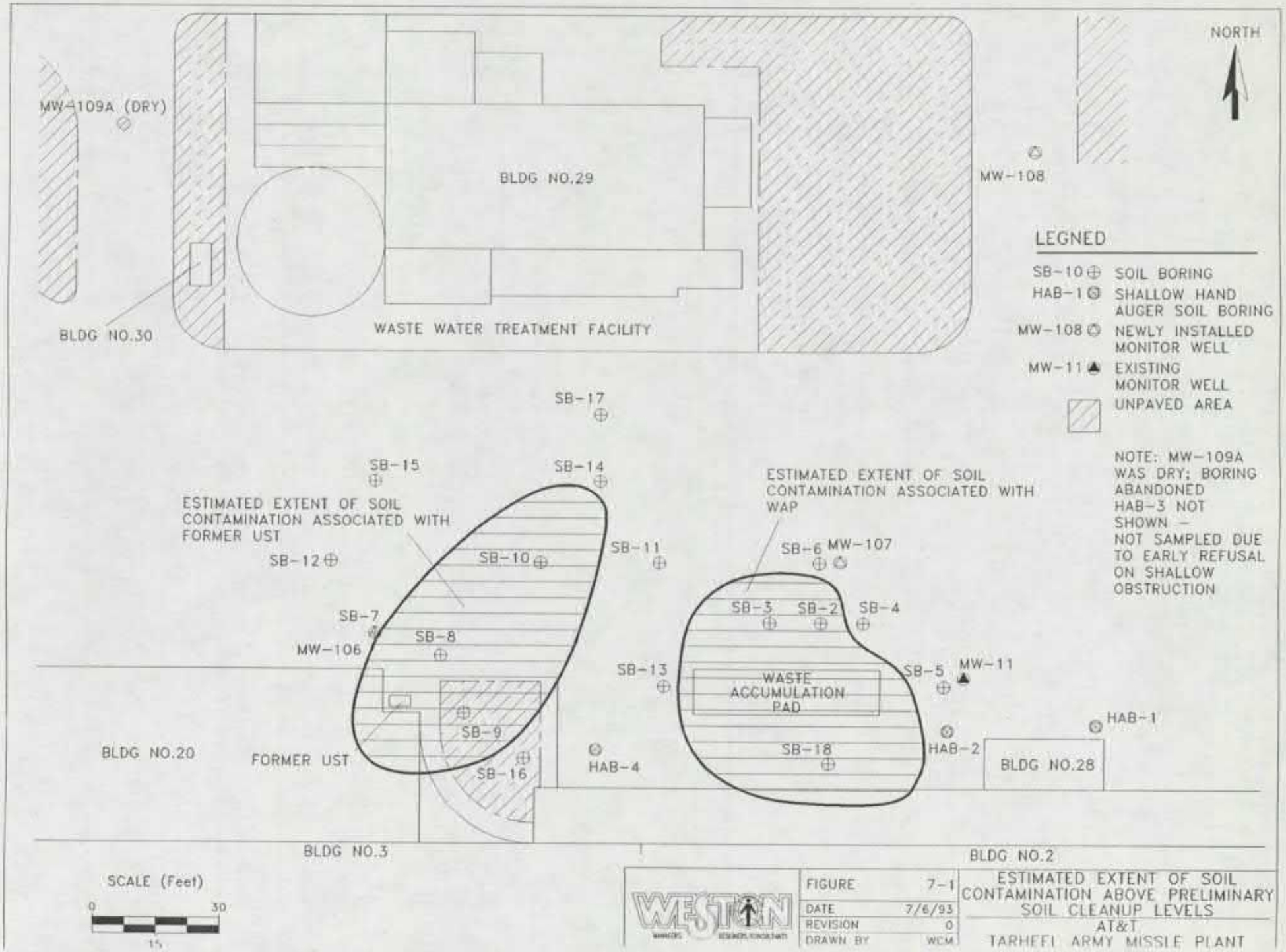


FIGURE	7-1
DATE	7/6/93
REVISION	0
DRAWN BY	WCM

ESTIMATED EXTENT OF SOIL CONTAMINATION ABOVE PRELIMINARY SOIL CLEANUP LEVELS
AT&T
TARHEEL ARMY MISSILE PLANT

TABLE 6–1
RESULTS OF ANALYSES OF SOIL SAMPLES

BORING #:	SB1	SB2	SB2	SB3	SB3	SB4	SB4	SB5	SB5	SB5
SAMPLE #: (ATT–)	SB1–10	SB2–9	SB2–17	SB3–13	SB3–17	SB4–9	SB4–17	SB5–13	SB5–19	SB5–27
SAMPLE DEPTH:	10'	9'	17'	13'	17'	9'	17'	13'	19'	27'
SAMPLE DATE:	5/10/93	5/11/93	5/11/93	5/11/93	5/11/93	5/11–93	5/11/93	5/12/93	5/12/93	5/12/93
Lead (7421)	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (418.1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (8240)	NA									
Acetone		22 B	1000 BB	1100 BB	24 B	120 B	170 B	21	<10	43 B
Carbon Disulfide		<6	<6	<7	<7	<6	<6	<6	<5	<6
Methylene Chloride		<6	<6	8 B	9 B	<6	<6	6	<5	<6
2–Butanone (MEK)		<13	<13	<13	<14	<12	<12	<11	<10	<12
1,1–Dichloroethene		<6	7	<7	<7	<6	<6	<6	<5	<6
1,2–Dichloroethene (total)		7	78	41	120	<6	<6	<6	<5	<6
1,1–Dichloroethane		<6	15	<7	<7	<6	<6	<6	<5	<6
1,2–Dichloroethane		<6	<6	8	10	8	8	8	<5	<6
1,1,1–Trichloroethane		<6	15	<7	<7	<6	<6	<6	<5	<6
1,1,2–Trichloroethane		<6	<6	<7	<7	<6	<6	6	<5	<6
Trichloroethene		<6	440 E	11	900 E	<6	<6	<6	<5	<6
Tetrachloroethene		<6	93	<7	22	<6	<6	<6	<5	<6
Benzene		<6	<6	<7	6 J	<6	<6	<6	<5	<6
Toluene		<6	<6	<7	<7	<6	<6	<6	<5	<6
Ethylbenzene		<6	<6	<7	<7	<6	<6	<6	<5	<6
Xylene (total)		<6	<6	<7	<7	<6	<6	<6	<5	<6
VOC TICs (8240)										
2–Propanol		20 J	2000 J	8000 J	400 J	2000 J	2000 J	ND	ND	7 J
Total Probable–Fuel–Related TICs		ND	NI	ND	ND	ND	ND	ND	ND	ND
Total Probable–Non–Fuel–Related TICs		ND	NI	28 J	ND	ND	ND	ND	ND	ND
Total Unknown TICs		ND	NI	20 J	ND	ND	ND	ND	6 J	ND
Total BTEX and Probable–Fuel–Related TICs		ND	ND	ND	6	ND	ND	ND	ND	ND

Units are in micrograms per kilogram.
J indicates an estimated value.
NA indicates sample was not analyzed for the indicated parameter.
TIC = Tentatively Identified Compound
<# indicates that a material was analyzed for but not detected; the number is the minimum quantitation limit.
B indicates compound was found in the blank and the sample.
E indicates concentration exceeds the instrument calibration range and was subsequently diluted.
ND indicates compound not detected and not reported as part of the TIC list.
Total Probable–Fuel–Related TICs is sum of the following TICs: 2–methylbutane; methyl propane; cyclic hydrocarbon; substitute alkyl benzene; substitute benzene; substitute cyclohexane; unknown alkyl benzene; unknown hydrocarbon.
Total Probable–Non–Fuel–Related TICs is sum of the following TICs: trichlorotrifluoroethane; unknown acid; unknown alcohol; unknown ketone.
Total Unknown TICs is sum of unknown TICs.
Total BTEX and Probable–Fuel–Related TICs [illegible]

TABLE 6–1 (CONTINUED)
RESULTS OF ANALYSES OF SOIL SAMPLES

BORING #:	SB6	SB6	SB7	SB7	SB8	SB8	SB9	SB9	SB10	SB10
SAMPLE #: (ATT–)	SB6–11	SB6–13	SB7–11	SB7–13	SB8–13	SB8–16	SB9–14	SB9–20	SB10–13	SB10–19.5
SAMPLE DEPTH:	11'	13'	11'	13'	13'	16'	14'	20'	13'	19.5'
SAMPLE DATE:	5/12/93	5/12/93	5/13/93	5/13/93	5/13/93	5/13/93	5/14/93	5/14/93	5/14/93	5/14/93
Lead (7421)	NA	NA	640	2,800	1,000	1,600	1,400	210	4,000	1,000
Total Petroleum Hydrocarbons (418.1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (8240)										
Acetone	15	15 B	49 B	<120	150 B	110	540 JB	21 B	710 B	84
Carbon Disulfide	<7	<7	<6	<62	<6	<6	<360	<6	<310	<6
Methylene Chloride	7	<7	8 B	<62	9 B	<6	<360	<6	<310	<6
2–Butanone (MEK)	<14	<14	13	<120	39	23	<720	<12	<620	<13
1,1–Dichloroethene	<7	<7	<6	<62	<6	<6	<360	<6	<310	<6
1,2–Dichloroethene (total)	29	230	<6	<62	6 J	<6	<360	<6	<310	<6
1,1–Dichloroethane	<7	20	<6	<62	<6	<6	<360	<6	<310	<6
1,2–Dichloroethane	19	<7	<6	<62	<6	9	<360	8	<310	<6
1,1,1–Trichloroethane	<7	<7	<6	<62	<6	<6	<360	<6	380	<6
1,1,2–Trichloroethane	13	<7	<6	<62	<6	6	<360	6	<310	<6
Trichloroethene	25	300	<6	<62	<6	<6	510	<6	<310	<6
Tetrachloroethene	<7	7	<6	<62	<6	<6	<360	<6	<310	<6
Benzene	<7	7	<6	<62	240	<6	<360	<6	<310	<6
Toluene	<7	<7	<6	<62	430 E	<6	<360	<6	2800	<6
Ethylbenzene	<7	<7	16	<62	32	<6	<360	<6	2600	<6
Xylene (total)	<7	5 J	20	<62	130	<6	680	<6	14000	8
VOC TICs (8240)										
2–Propanol	ND	8 J	ND	ND	ND	ND	ND	ND	ND	ND
Total Probable–Fuel–Related TICs	ND	ND	2400 J	5300 J	400 J	ND	22000 J	ND	46000 J	130 J
Total Probable–Non–Fuel–Related TICs	ND	ND	ND	ND	49 J	ND	ND	100 J	ND	ND
Total Unknown TICs	ND	ND	ND	ND	50 J	7 J	11000 J	ND	19000 J	90 J
Total BTEX and Probable–Fuel–Related TICs	ND	12	2436	5300	1232	ND	22680	ND	65400	138

Units are in micrograms per kilogram.
J indicates an estimated value.
NA indicates sample was not analyzed for the indicated parameter.
TIC = Tentatively Identified Compound
<# indicates that a material was analyzed for but not detected; the number is the minimum quantitation limit.
B indicates compound was found in the blank and the sample.
E indicates concentration exceeds the instrument calibration range and was subsequently diluted.
ND indicates compound not detected and not reported as part of the TIC list.
Total Probable–Fuel–Related TICs is sum of the following TICs: 2–methylbutane; methyl propene; cyclic hydrocarbon; substitute alkyl benzene; substitute benzene; substitute cyclohexane; unknown alkyl benzene; unknown hydrocarbon.
Total Probable–Non–Fuel–Related TICs is sum of the following TICs: trichlorotrifluoroethane; unknown acid; unknown alcohol; unknown ketone.
Total Unknown TICs is sum of unknown TICs.
Total BTEX and Probable–Fuel–Related TICs [illegible]

TABLE 6–1 (CONTINUED)
RESULTS OF ANALYSES OF SOIL SAMPLES

BORING #:	SB11	SB11	SB12	SB13	SB13	SB14	SB14	SB–15	SB–16
SAMPLE #: (ATT–)	SB11–13	SB11–17	SB12–9	SB13–6	SB13–16	SB14–4	SB14–16	SB–15–12	SB–16–3
SAMPLE DEPTH:	13'	17'	9'	6'	16'	4'	16'	12'	3'
SAMPLE DATE:	5/17/93	5/17/93	5/18/93	5/18/93	5/18/93	5/18/93	5/18/93	5/25/93	5/25/93
Lead (7421)	1,400	780	900	1,800	1,100	17,100	950	1,800	6,700
Total Petroleum Hydrocarbons (418.1)	NA	NA	NA	NA	NA	NA	NA	836,000	295,000
VOCs (8240)									
Acetone	76	23 B	13 B	82 B	13 JB	360 B	44 B	27	13
Carbon Disulfide	<6	<6	<7	<7	<6	<60	<6	<6	<7
Methylene Chloride	<6	<6	<7	18	<6	110	16	<6	<7
2–Butanone (MEK)	30	<12	<13	14	<13	54 J	11	<12	<13
1,1–Dichloroethene	<6	<6	<7	<7	<6	<60	<6	<6	<7
1,2–Dichloroethene (total)	<6	<6	<7	56	<6	<60	<6	<6	86
1,1–Dichloroethane	<6	<6	<7	17	<6	<60	<6	<6	<7
1,2–Dichloroethane	<6	<6	<7	6	4 J	<60	4 J	<6	<7
1,1,1–Trichloroethane	<6	<6	<7	<7	<6	<60	<6	<6	<7
1,1,2–Trichloroethane	<6	<6	<7	<7	<6	<60	<6	<6	7
Trichloroethene	<6	<6	<7	<7	<6	<60	<6	<6	330 E
Tetrachloroethene	<6	<6	<7	<7	<6	<60	<6	3 J	6 J
Benzene	<6	<6	<7	<7	<6	<60	<6	4 J	<7
Toluene	<6	<6	<7	9	<6	<60	<6	<6	<7
Ethylbenzene	<6	<6	<7	<7	<6	<60	<6	<6	<7
Xylene (total)	19	<6	<7	10	<6	<60	<6	<6	<7
VOC TICs (8240)									
2–Propanol	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Probable–Fuel–Related TICs	1260 J	ND	ND	590 J	10 J	13090 J	ND	ND	ND
Total Probable–Non–Fuel–Related TICs	ND	ND	ND	80 J	ND	ND	ND	ND	ND
Total Unknown TICs	80 J	40 J	ND	370 J	ND	80 J	40 J	ND	ND
Total BTEX and Probable–Fuel–Related TICs	1279	ND	ND	609	10	13090	ND	4	ND

Units are in micrograms per kilogram.
J Indicates an estimated value.
NA Indicates sample was not analyzed for the indicated parameter.
TIC = Tentatively Identified Compound
<# Indicates that a material was analyzed for but not detected; the number is the minimum quantitation limit.
B Indicates compound was found in the blank and the sample.
E Indicates concentration exceeds the instrument calibration range and was subsequently diluted.
ND indicates compound not detected and not reported as part of the TIC list.
Total Probable–Fuel–Related TICs is sum of the following TICs: 2–methylbutane; methyl propane; cyclic hydrocarbon; substitute alkyl benzene; substitute benzene; substitute cyclohexane; unknown alkyl benzene; unknown hydrocarbon.
Total Probable–Non–Fuel–Related TICs is sum of the following TICs: trichlorotrifluoroethane; unknown acid; unknown alcohol; unknown ketone.
Total Unknown TICs is sum of unknown TICs.
[illegible]

TABLE 6–1 (CONTINUED)
RESULTS OF ANALYSES OF SOIL SAMPLES

BORING #:	SB–17	SB–17	SB–18	SB–18	SB–18	HAB–1	HAB–2	HAB–4	HAB–4
SAMPLE #: (ATT–)	SB–17–3	SB–17–10	HB–1–2	HB–1–2B	HB–1–12.5	HAB–1–35	HAB–2–46	HAB–4–37	HAB–4WL
SAMPLE DEPTH:	3'	10'	2'	2'	12.5'	2.9'	3.8'	3.1'	(Water, 3.1')
SAMPLE DATE:	5/26/93	5/26/93	5/27/93	5/27/93	6/17/93	6/22/93	6/22/93	6/23/93	6/23/93
Lead (7421)	22700	NA	16800	7000	1500	NA	NA	NA	NA
Total Petroleum Hydrocarbons (418.1)	62900	NA	941000	344000	< 31,400	< 31,300	39800	99000	2110000
VOCs (8240)				NA		(8020)	(8020)	(8020)	(8020)
Acetone	46	11 J	49		60	NA	NA	NA	NA
Carbon Disulfide	<6	<6	<6		<6	NA	NA	NA	NA
Methylene Chloride	<6	<6	<6		<6	NA	NA	NA	NA
2–Butanone (MEK)	<12	<12	<13		<12	NA	NA	NA	NA
1,1–Dichloroethene	<6	<6	<6		<6	NA	NA	NA	NA
1,2–Dichloroethene (total)	<6	<6	<6		4 J	NA	NA	NA	NA
1,1–Dichloroethane	<6	<6	<6		<6	NA	NA	NA	NA
1,2–Dichloroethane	<6	<6	<6		<6	NA	NA	NA	NA
1,1,1–Trichloroethane	<6	<6	<6		<6	NA	NA	NA	NA
1,1,2–Trichloroethane	<6	<6	<6		<6	NA	NA	NA	NA
Trichloroethene	<6	<6	<6		6	NA	NA	NA	NA
Tetrachloroethene	<6	<6	<6		110	NA	NA	NA	NA
Benzene	<6	<6	<6		<6	<0.96	<0.96 J	<0.88	1.8
Toluene	<6	<6	<6		<6	<0.96	0.54	<0.88	1.8
Ethylbenzene	<6	<6	<6		<6	<0.96	<0.96	<0.88	<0.80
Xylene (total)	<6	<6	<6		<6	<0.96	<0.96	<0.88	1.8
VOC TICs (8240)									
2–Propanol	NI	ND	NI		ND	NA	NA	NA	NA
Total Probable–Fuel–Related TICs	NI	ND	NI		ND	NA	NA	NA	NA
Total Probable–Non–Fuel–Related TICs	NI	ND	NI		ND	NA	NA	NA	NA
Total Unknown TICs	NI	ND	NI		ND	NA	NA	NA	NA
Total BTEX and Probable–Fuel–Related TICs	ND	ND	ND		ND	ND	0.54	ND	5.4

Units are in micrograms per kilogram except for HAB–4WL, which is in micrograms per liter.
J indicates an estimated value.
NA indicates sample was not analyzed for the indicated parameter.
TIC = Tentatively Identified Compound (8240 analyses only)
Total Probable–Fuel–Related TICs is sum of the following TICs: 2–methylbutane; methyl propene; cyclic hydrocarbon; substitute alkyl benzene; substitute benzene; substitute cyclohexane; unknown alkyl benzene; unknown hydrocarbon.
Total Probable–Non–Fuel–Related TICs is sum of the following TICs: trichlorotrifluoroethane; unknown acid; unknown alcohol; unknown ketone.
Total Unknown TICs is sum of unknown TICs.
Total BTEX and Probable–Fuel–Related TICs [illegible]

<# indicates that a material was analyzed for but not detected; the number is the minimum quantitation limit.
B indicates compound was found in the blank and the sample.
E indicates concentration exceeds the instrument calibration range and was subsequently diluted.
ND indicates compound not detected and not reported as part of the TIC list.

TABLE 6-1 (CONTINUED)
RESULTS OF ANALYSES OF SOIL SAMPLES

BORING #:	MW101	MW102	MW103	MW104	MW105	MW106	MW-108	MW-108	MW-109A	MW-109
SAMPLE #: (ATT-)	MW101-16	MW102-16	MW103-11	MW104-3.5	MW105-17	MW106-8	MW108-4	MW108-6	MW109A-4	MW109-7
SAMPLE DEPTH:	16'	16'	11'	3.5'	17'	8'	4'	6'	4'	7'
SAMPLE DATE:	5/11/93	5/11/93	5/11/93	5/12/93	5/12/93	5/13/93	5/24/93	5/24/93	5/25/93	5/26/93
Lead (7421)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (418.1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (8240)										
Acetone	<13	<12	<12	14 B	100 B	<13	30 B	43 B	21	<12
Carbon Disulfide	<6	<6	<6	<6	<8	<6	10	<6	<6	<6
Methylene Chloride	<6	<6	10 B	<6	<8	<6	<7	<6	<6	<6
2-Butanone (MEK)	<13	<12	<12	<13	<15	<13	<14	<13	<13	<12
1,1-Dichloroethene	<6	<6	<6	<6	<8	<6	<7	<6	<6	<6
1,2-Dichloroethene (total)	<6	<6	<6	<6	<8	14	<7	<6	<6	<6
1,1-Dichloroethane	<6	<6	<6	<6	<8	<6	<7	<6	<6	<6
1,2-Dichloroethane	9	<6	<6	<6	<8	<6	6 J	<6	<6	3 J
1,1,1-Trichloroethane	<6	<6	<6	<6	<8	<6	<7	<6	<6	<6
1,1,2-Trichloroethane	<6	<6	<6	<6	<8	<6	<7	<6	<6	<6
Trichloroethene	<6	<6	<6	<6	<8	<6	<7	<6	<6	<6
Tetrachloroethene	<6	<6	<6	<6	<8	<6	<7	<6	<6	<6
Benzene	<6	<6	<6	<6	<8	9	<7	<6	<6	<6
Toluene	<6	<6	<6	<6	<8	<6	<7	<6	<6	<6
Ethylbenzene	<6	<6	<6	<6	<8	21	<7	<6	<6	<6
Xylene (total)	<6	<6	<6	<6	<8	6 J	<7	<6	<6	<6
VOC TICs (8240)										
2-Propanol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Probable-Fuel-Related TICs	ND	ND	ND	47 J	ND	109 J	ND	ND	ND	ND
Total Probable-Non-Fuel-Related TICs	ND	ND	ND	ND	ND	9 J	ND	ND	ND	ND
Total Unknown TICs	ND	ND	ND	7 J	ND	18 J	ND	ND	ND	ND
Total BTEX and Probable-Fuel-Related TICs	ND	ND	ND	47	ND	145	ND	ND	ND	ND

Units are in micrograms per kilogram.
J indicates an estimated value.
NA indicates sample was not analyzed for the indicated parameter.
TIC = Tentatively Identified Compound
<# indicates that a material was analyzed for but not detected; the number is the minimum quantitation limit.
B indicates compound was found in the blank and the sample.
B indicates concentration exceeds the instrument calibration range and was subsequently diluted.
ND indicates compound not detected and not reported as part of the TIC list.
Total Probable-Fuel-Related TICs is sum of the following TICs: 2-methylbutane; methyl propene; cyclic hydrocarbon; substitute alkyl benzene; substitute benzene; substitute cyclohexane; unknown alkyl benzene; unknown hydrocarbon.
Total Probable-Non-Fuel-Related TICs is sum of the following TICs: trichlorotrifluoroethane; unknown acid; unknown alcohol; unknown ketone.
Total Unknown TICs is sum of unknown TICs.
[illegible]

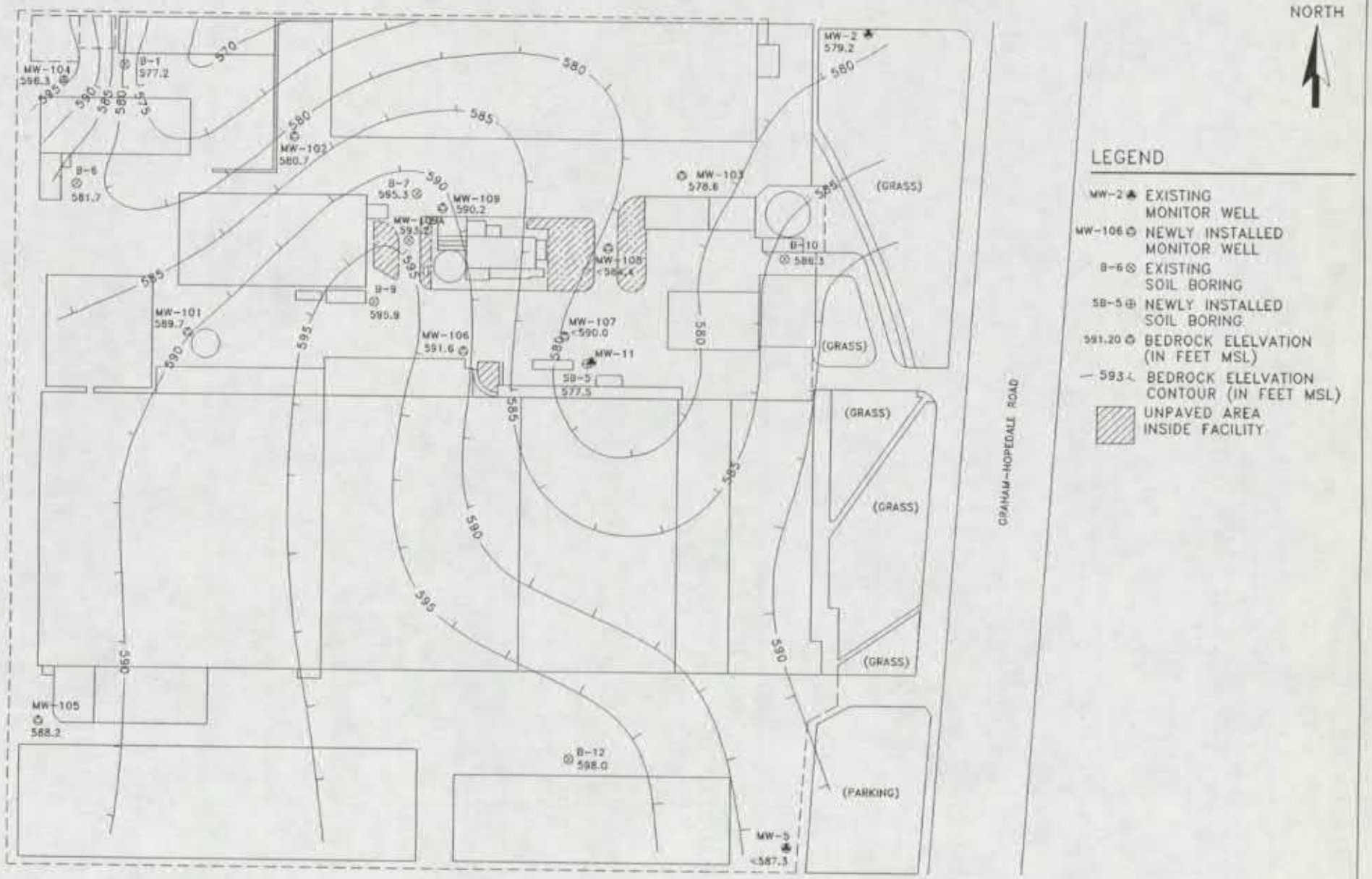
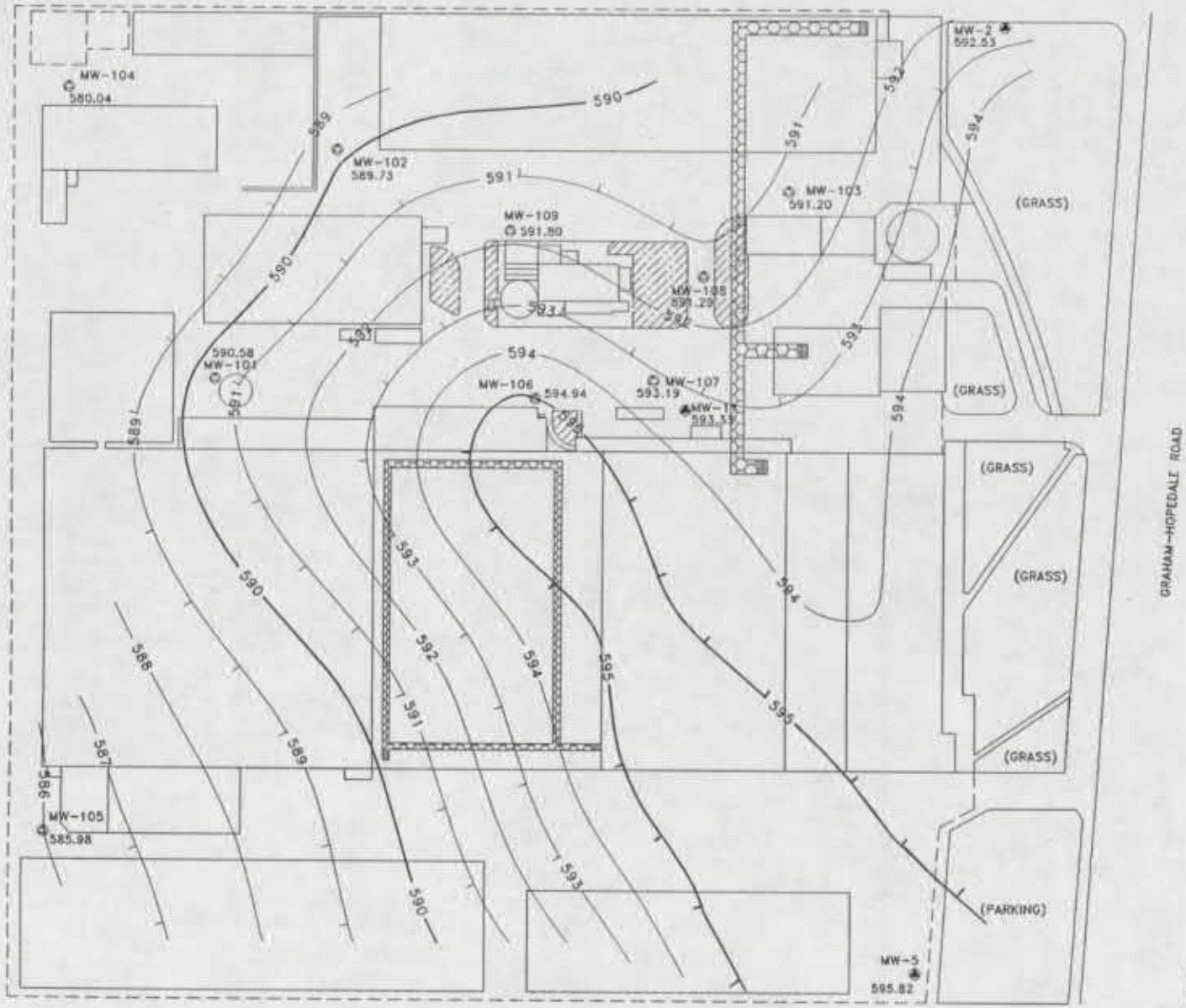


FIGURE	5-7	ESTIMATED BEDROCK ELEVATIONS AT&T TARHEEL ARMY MISSLE PLANT
DATE	7/21/93	
REVISION	0	
DRAWN BY	WCM	



NORTH

LEGEND

- MW-2 ♣ EXISTING MONITOR WELL
- MW-106 ✪ NEWLY INSTALLED MONITOR WELL
- 591.20 ✪ GROUNDWATER ELELVATION (IN FEET MSL)
- — 593 ∠ GROUNDWATER ELELVATION CONTOUR (IN FEET MSL)
- UNPAVED AREA INSIDE FACILITY
- UNDERGROUND TUNNEL (NUMEROUS SMALL BRANCHES NOT SHOWN)

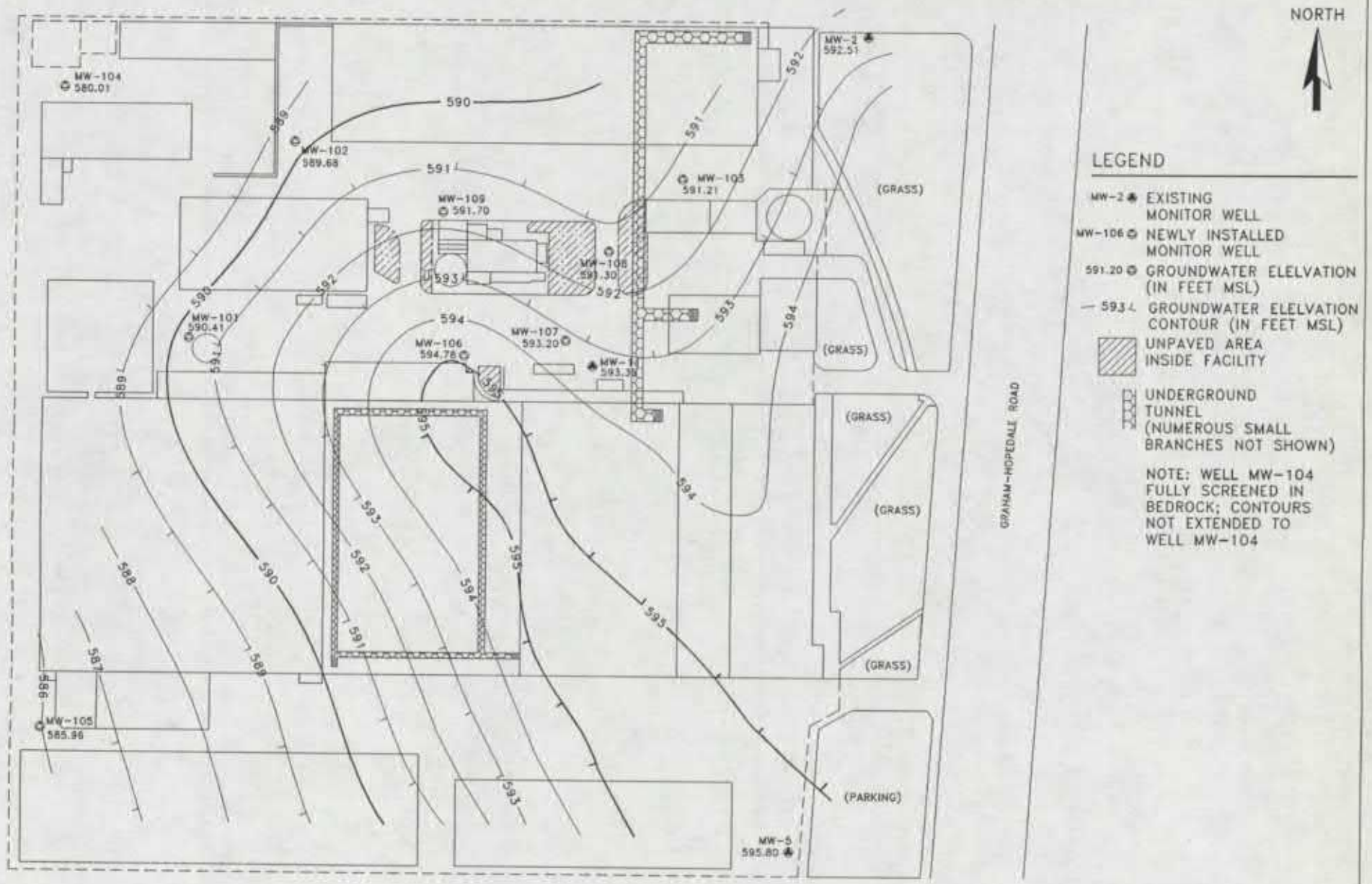
NOTE: WELL MW-104 FULLY SCREENED IN BEDROCK; CONTOURS NOT EXTENDED TO WELL MW-104

SCALE (Feet)

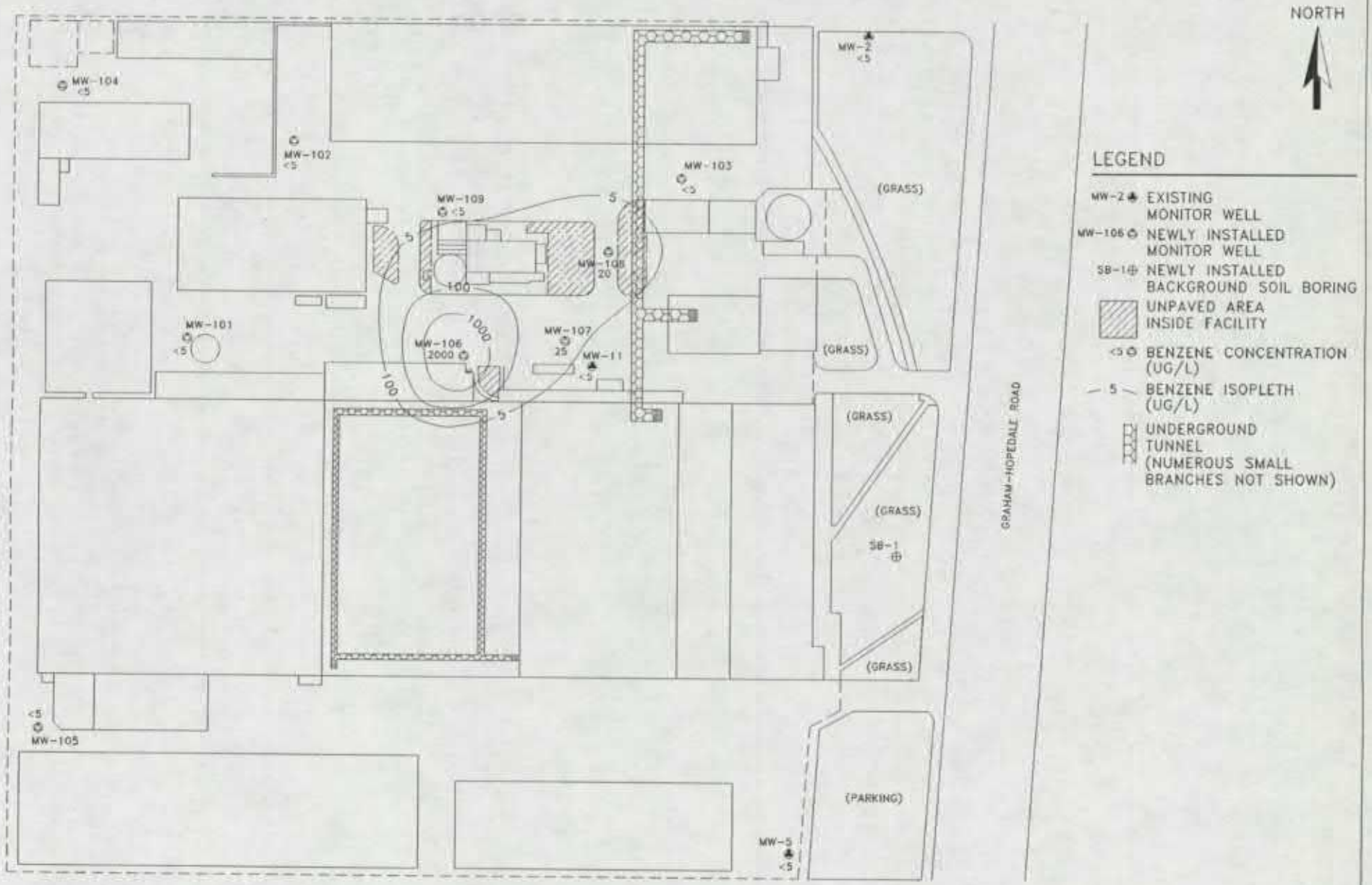
0 50 100

25 75 150

WESTON	FIGURE 5-8	GROUNDWATER ELEVATIONS FOR 1 JUNE 1993
	DATE 6/29/93	AT&T
	REVISION 0	TARHEEL ARMY MISSLE PLANT
	DRAWN BY WCM	



WESTON	FIGURE 5-9	GROUNDWATER ELEVATIONS FOR 4 JUNE 1993 AT&T TARHEEL ARMY MISSLE PLANT
	DATE 6/29/93	
	REVISION 0	
	DRAWN BY WCM	

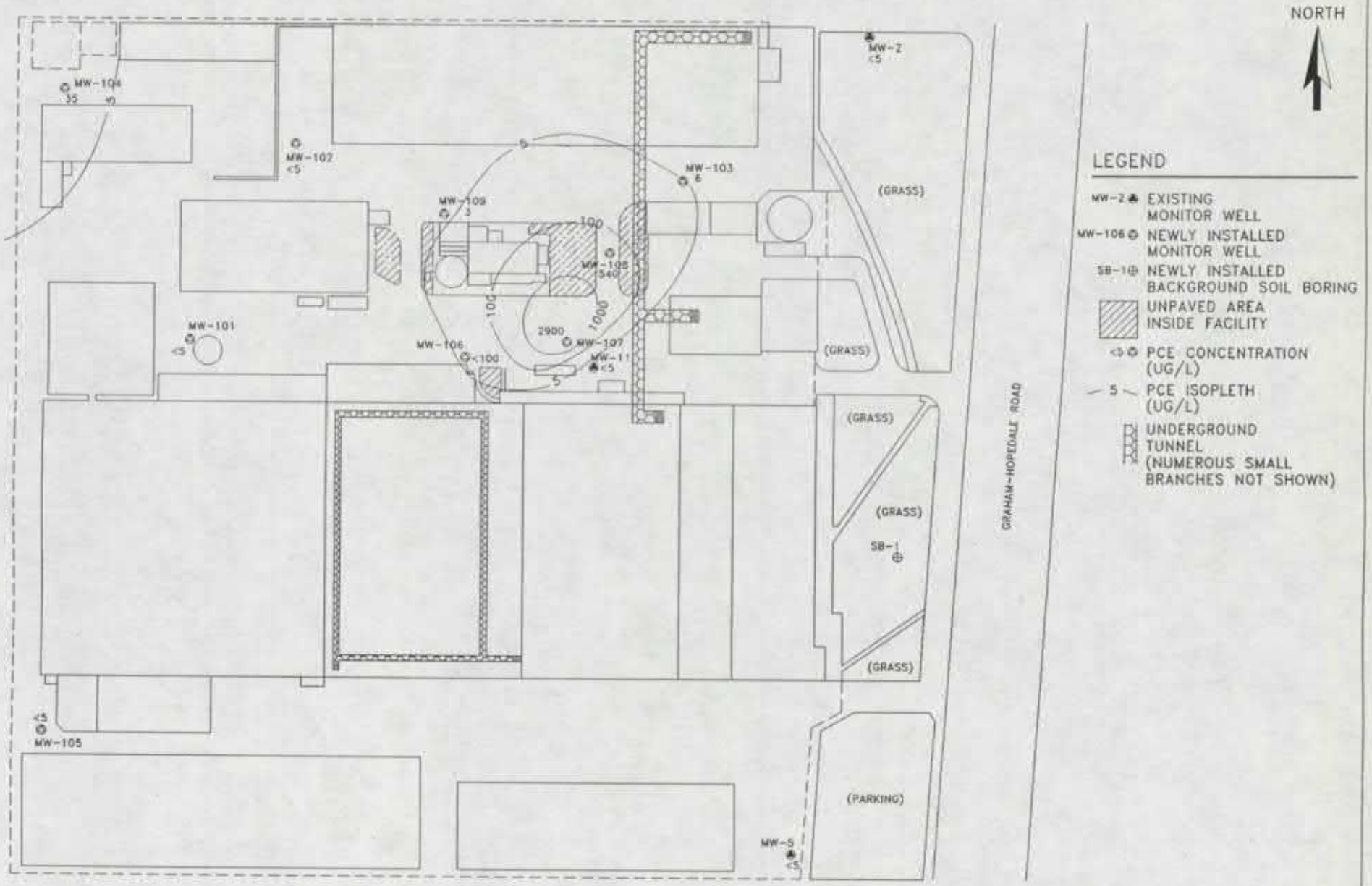


SCALE (Feet)

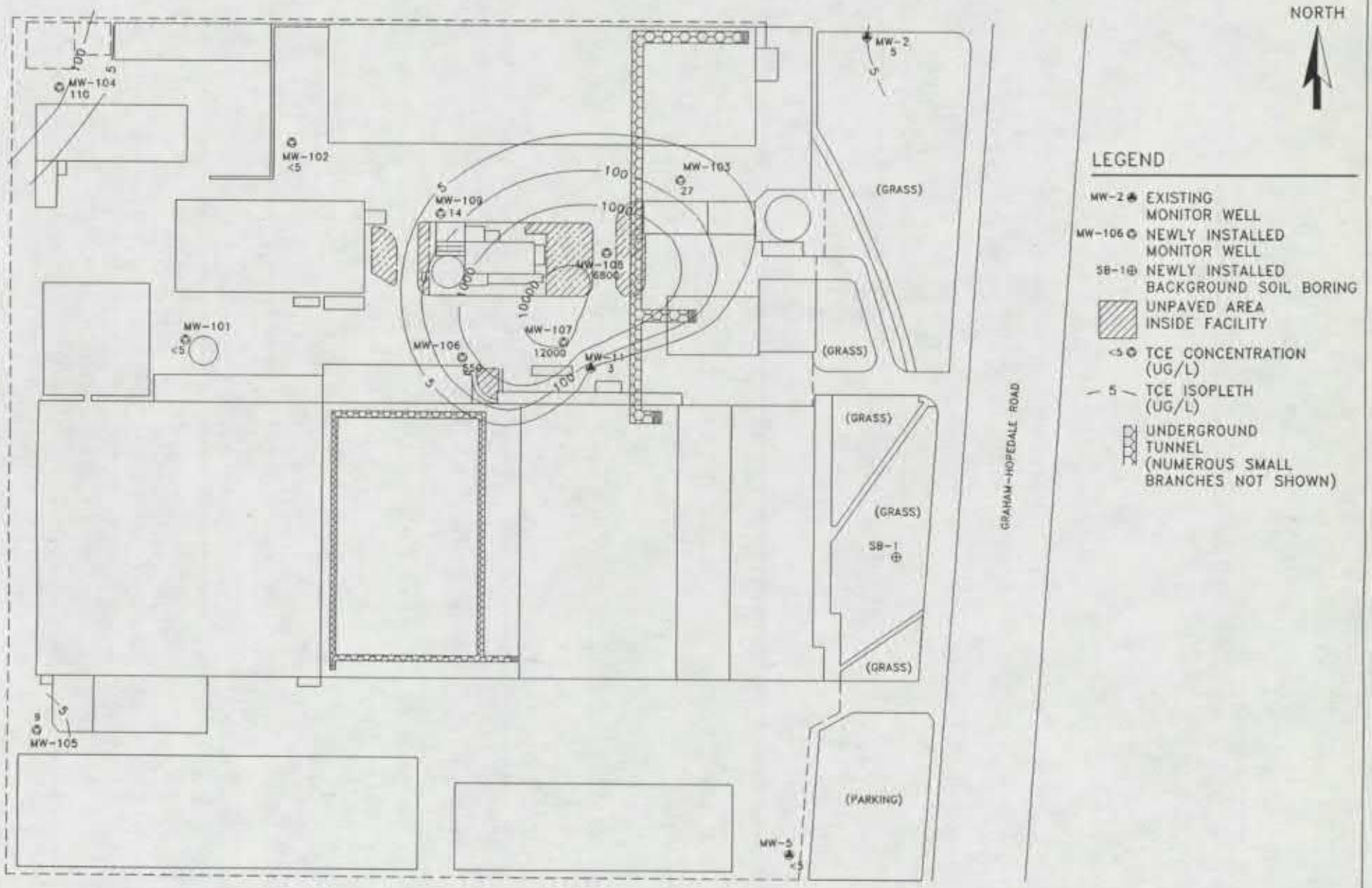
0 50 100

25 75 150

FIGURE	6-5	CONCENTRATIONS OF BENZENE IN GROUNDWATER AT&T TARHEEL ARMY MISSLE PLANT
DATE	7/2/93	
REVISION	0	
DRAWN BY	WCM	



WESTON	FIGURE 6-6	CONCENTRATIONS OF PCE IN GROUNDWATER AT&T TARHEEL ARMY MISSLE PLANT
	DATE 7/2/93	
	REVISION 0	
	DRAWN BY WCM	



SCALE (Feet)

0 50 100

25 75 150

WESTON	FIGURE	6-7
	DATE	7/2/93
	REVISION	0
	DRAWN BY	WCM

CONCENTRATIONS OF TCE IN GROUNDWATER
AT&T
TARHEEL ARMY MISSLE PLANT

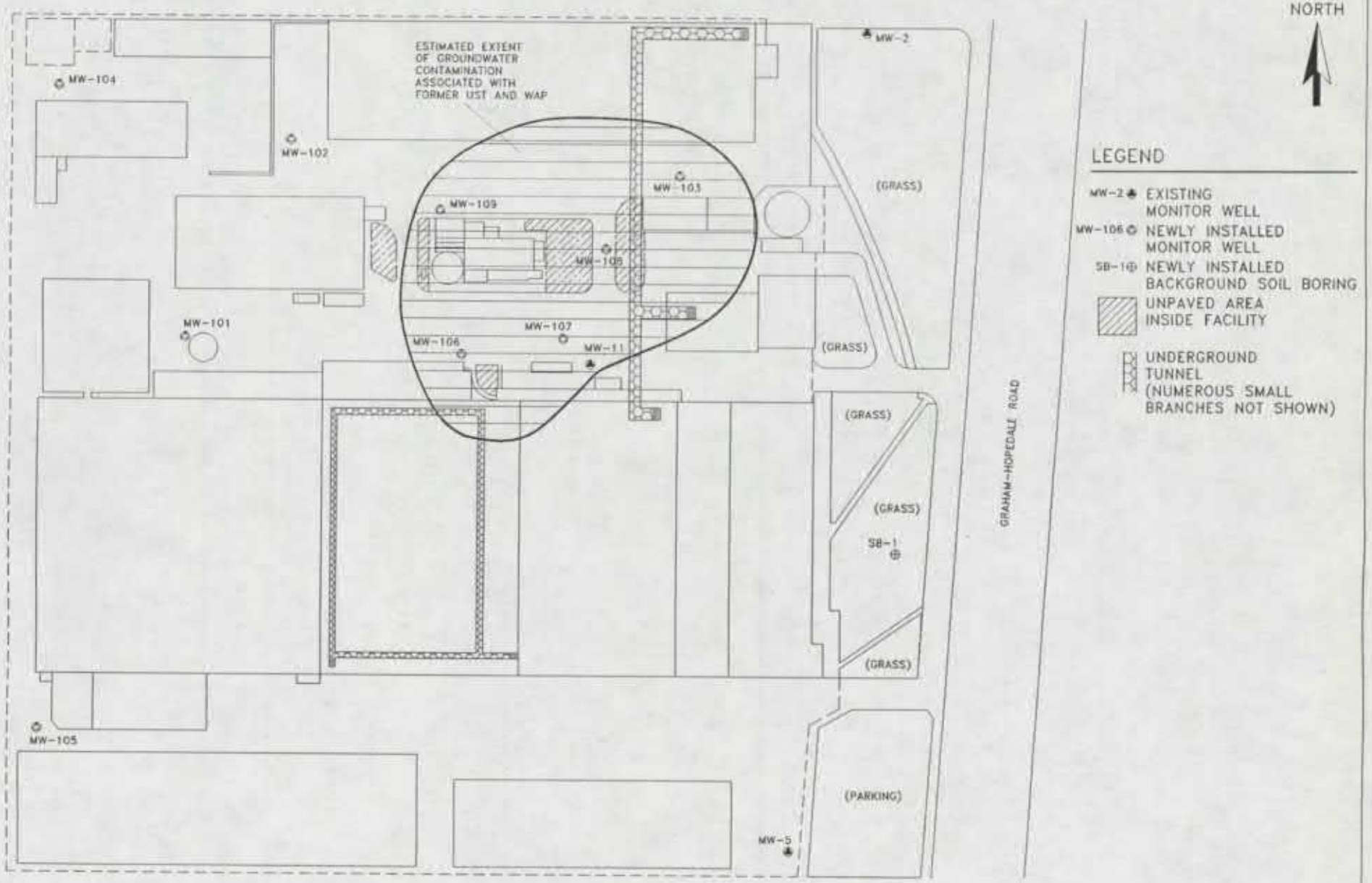


FIGURE	7-2	ESTIMATED EXTENT OF GROUNDWATER CONTAMINATION ASSOCIATED WITH UST AND WAP AT&T TARHEEL ARMY MISSLE PLANT
DATE	7/6/93	
REVISION	0	
DRAWN BY	WCM	

TABLE 6–2
RESULTS OF ANALYSES OF GROUNDWATER SAMPLES

WELL #	MW–2	MW–5	MW–11	MW–101	MW–102	MW–103	MW–104	MW–105
SAMPLE #	ATT–MW2	ATT–MW5	ATT–MW11	ATT–MW101	ATT–MW102	ATT–MW103	ATT–MW104	ATT–MW105
SAMPLE DATE	6/3/93	6/3/93	6/2/93	6/2/93	6/2/93	6/3/93	6/2/93	6/3/93
Lead	13	< 5	30	< 5	6.3	5.7	8.7	< 5
Methylene Chloride	< 5	6 B	17 B	< 5	< 5	< 5	< 5	4 JB
Chloroform	< 5	< 5	3 J	4 J	< 5	< 5	< 5	< 5
1,1–Dichloroethene	130	< 5	< 5	< 5	< 5	13	5	< 5
1,2–Dichloroethene (total)	< 5	< 5	< 5	< 5	< 5	6	< 5	< 5
1,1–Dichloroethane	45	< 5	< 5	< 5	< 5	5	< 5	13
1,2–Dichloroethane	25	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,1,1–Trichloroethane	22	< 5	< 5	< 5	< 5	< 5	< 5	7
Trichloroethene	5	< 5	3 J	< 5	< 5	27	110	9
Tetrachloroethene	< 5	< 5	< 5	< 5	< 5	6	35	< 5
Carbon Tetrachloride	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Benzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Toluene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Xylene (total)	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Dichlorotrifluoroethane	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorotrifluoroethane	40 J	ND	ND	ND	ND	ND	ND	30 J
Unknown Compounds	20 J	30 J	ND	ND	ND	ND	ND	109 J

WELL #	MW–106	MW–107	MW–108	MW–109	Trip Blank	Rinse Blank		
SAMPLE #	ATT–MW106	ATT–MW107	ATT–MW108	ATT–MW109	ATT–TB2	ATT–RB2	NCGWQSs	MCLs
SAMPLE DATE	6/2/93	6/2/93	6/3/93	6/3/93	6/3/93	6/2/93		
Lead	6.5	5.8	10	< 5	NA	< 5	50	15 (TT), 5 (P)
Methylene Chloride	< 100	17 B	< 5	< 5	< 5	< 5	5	5
Chloroform	< 100	11	27	< 5	< 5	< 5	0.19	100
1,1–Dichloroethene	< 100	130	62	< 5	< 5	< 5	7	7
1,2–Dichloroethene (total)	670	2,000 E	550 E	8	< 5	< 5	70	70
1,1–Dichloroethane	< 100	180	90	< 5	< 5	< 5	NL	NL
1,2–Dichloroethane	< 100	7	10	< 5	< 5	< 5	0.38	5
1,1,1–Trichloroethane	< 100	370 E	49	< 5	< 5	< 5	200	200
Trichloroethene	550	12,000 E	6,800 E	14	< 5	< 5	2.8	5
Tetrachloroethene	< 100	2,900 E	540 E	3 J	< 5	< 5	0.7	5
Carbon Tetrachloride	< 100	< 5	6	< 5	< 5	< 5	0.3	5
Benzene	2,000	25	20	< 5	< 5	< 5	1	5
Toluene	2,600	< 5	< 5	< 5	< 5	< 5	1000	1000
Ethylbenzene	380	< 5	< 5	< 5	< 5	< 5	29	700
Xylene (total)	1,600	< 5	< 5	< 5	< 5	< 5	400	10,000
Dichlorotrifluoroethane	ND	30 J	ND	ND	ND	ND	NL	NL
Trichlorotrifluoroethane	ND	600 J	ND	ND	ND	ND	NL	NL
Unknown Compounds	ND	30 J	ND	ND	ND	ND	NL	NL

Notes: Units are micrograms per liter (ug/l).
< indicates that a material was analyzed for but not detected. The number is the minimum quantitation limit.
J indicates an estimated value.
B indicates compound was found in the blank and the sample.
E indicates concentration exceeds the instrument calibration range and was subsequently diluted.
ND indicates compound not detected and not reported as part of the Tentatively Identified Compound list.
NL indicates the compound [illegible]

NCGWQSs indicates North Carolina Groundwater Quality Standards
MCLs indicates Federal Maximum Contaminant Levels for Lead, the MCL as a Treatment Technology (TT) and the Proposed MCL (P) are listed
NL indicates the compound does not have a NCGWQS or MCL listed
Concentrations which are shaded in the table indicate the compound is not in either NCGWQSs or MCLs
Lead was analyzed by Method 2052 and prepd by Method 3010C
Volatiles were analyzed by Method 8240

Federal Remediation Branch

40

Your Name: DJL

EPA ID: NC7210020544

Facility Name: TAMP

Document Group: FRB CERCLA (FRCERCLA)

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AUG 1 5 1994

Site Investigation Report

for the

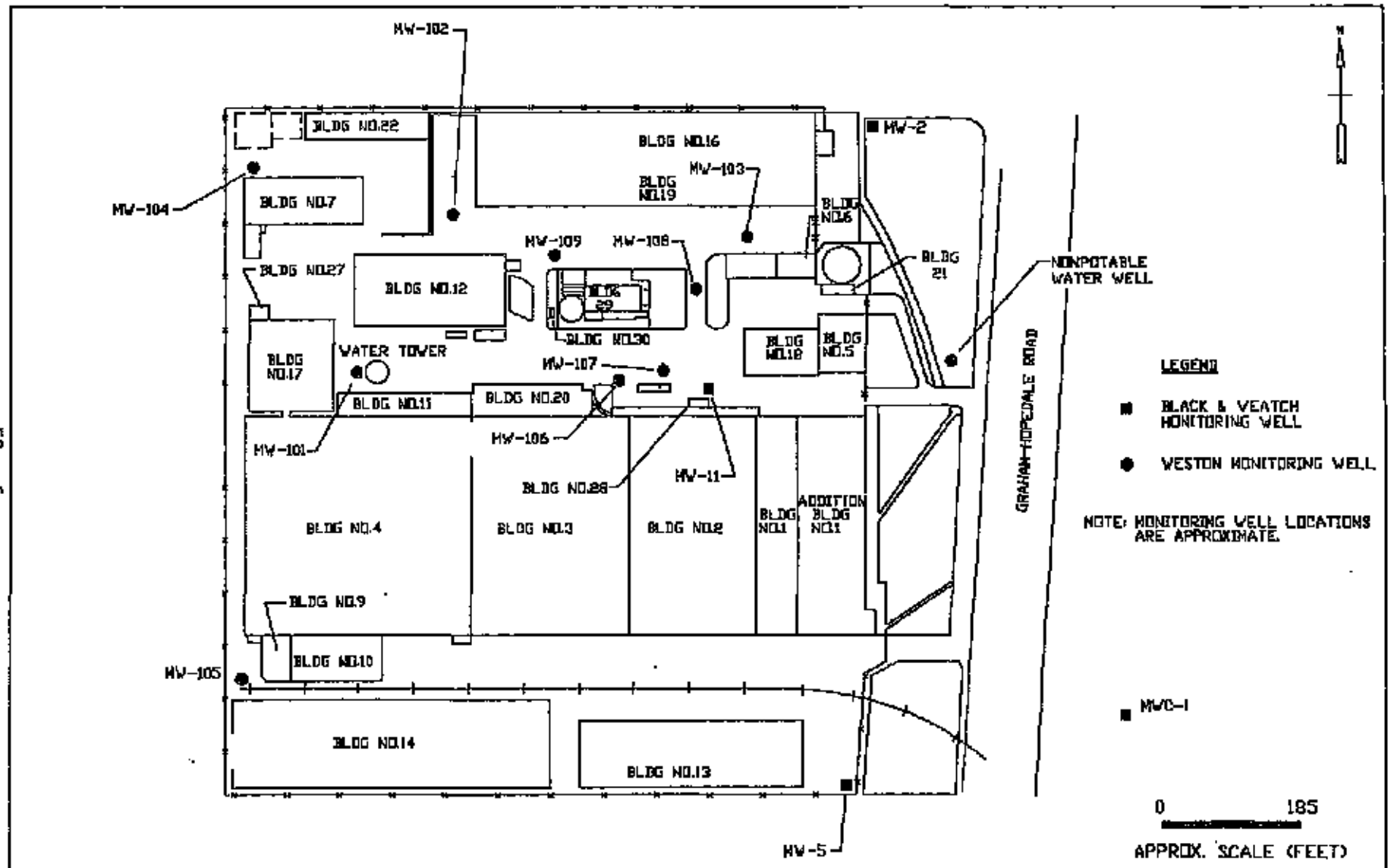
TARHEEL ARMY MISSILE PLANT

Burlington, North Carolina

Volume I of II

CAD DWG NO: TAMF0016
DATE: 05-03-94 RW3
PLOT SCALE: 1=1

ORIGINAL DWG SIZE
8.5 x 11



BLACK & VEATCH	GROUNDWATER SAMPLING LOCATIONS	TARHEEL ARMY MISSILE PLANT BURLINGTON, NORTH CAROLINA	FIGURE ES-3

TABLE 4-12
Analytical Sampling Results--Groundwater
TARHEEL ARMY MISSILE PLANT
Burlington, North Carolina

Constituent	BVWS Groundwater Monitoring Wells (1)					Non-Potable Water Well	USEPA Standard		NC Drinking Water Standard	NC Groundwater Standard
	MW-2	MW-5	DUPLICATE MW-5	MW-11	MWC-1		MCL	MCLG		
VOCs										
Methylene Chloride	6.5B/ND/ND	5.3/ND/6B		5.1/8.9/17B		6.5B/-/-	5			5
Chloroform				ND/ND/3J			100*			0.19
1,1-Dichloroethene	140/100/130						7	7	7	7
1,2-Dichloroethene	120/ND/ND			6/ND/ND			70	70		
1,1-Dichloroethane	60/39/45									700
1,2-Dichloroethane	ND/ND/25						5	0	5	0.38
1,1,1-Trichloroethane	32/29/22								200	200
Trichloroethene	8.4/6.8/5			180/ND/3			5	0	5	2.8
Tetrachloroethene				8.1/ND/ND			5	0		0.7
Carbon							5	0	5	0.3
Benzene							5	0	5	1.0
Toluene				ND/94/ND			1,000	1,000		1,000
Ethylbenzene							700	700		29
Xylene							10,000	10,000		530
Vinyl Acetate										
Vinyl Chloride										0.015
BNA										
Napthalene										
Pesticides/PCBs										
Methoxychlor							40		100	35
Chlordane							2			0.027
Metals										
Antimony			58/-/-							
Beryllium		9.5/ND/-	15/-/-							
Chromium	12/18/-	31/49/-	59/-/-	24/88/-	-/140/-		100	100	50	50
Copper	ND/27/-	210/140/-	360/-/-	110/36/-	-/660/-	85/-/-	1,300	1,300		1,000
Lead	ND/5/13	8.6/7/-	16/-/-	ND/24/30	-/44/-		15	0	50	15
Nickel		470/40/-	82/-/-		-/80/-					100
Zinc	23/13/-	600/360/-	990/-/-	130/35/-	-/1,400/-					2,100

NOTES:

(1) 1.0/1.0/1.0 1991 analytical results/1993 analytical results/1993 Weston analytical results.
(2) 1.0/1.0 1993 analytical results/1993 Weston analytical results.
(3) Weston did not analyze for any metals except lead.
ND Not Detected.
B Indicates compound was found in the blank and the sample.
J Indicates an estimated value (concentration is below practical quantitation limit, but above method detection limit).
* Standard is for total trihalomethanes as defined by the sumof concentrations of bromodichloromethane, dibromochloromethane, tribromomethane, and trichloromethane (chloroform).
Blank space or (-) indicates constituent not analysed.

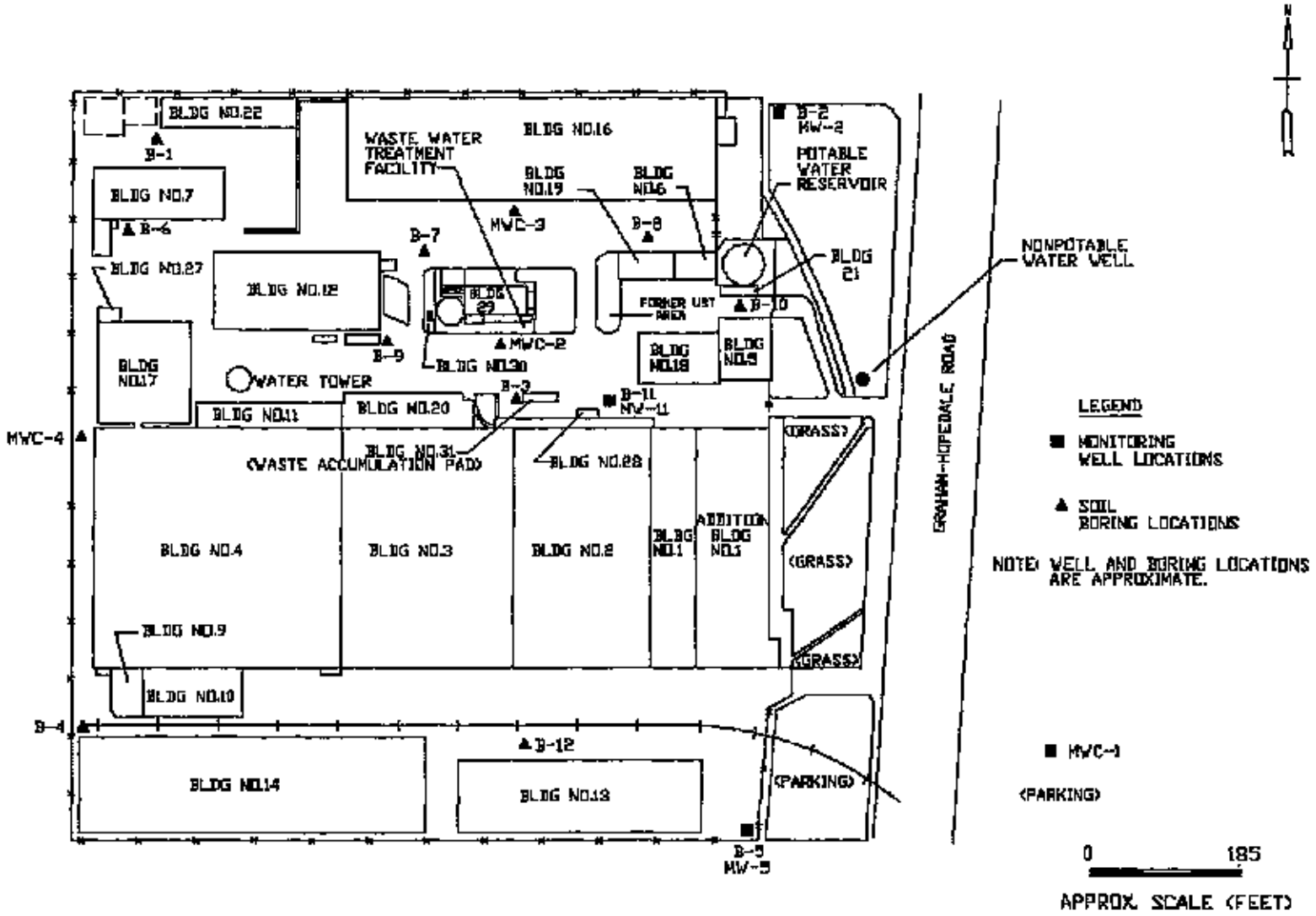
Table 4-12 (Continued)
Analytical Sampling Results--Groundwater
Tarheel Army Missile Plant
Burlington, North Carolina

Constituent	Weston Groundwater Montioring Wells ug/L (2)(3)											USEPA Standards		NC Drinking Water Standard (ug/L)	NC Ground water Standard (ug/L)
	MW 101	MW 102	MW 103	MW1 04	MW 105	MW-105 Duplicate	MW 106	MW 107	MW 108	MW 109	MW-9 Duplicate	MCL (ug/L)	MCLG (ug/L)		
VOCs															
Methylene Chloride				7/ND				/17B	610/ND			5			5
Chloroform	ND/4J				ND/4JB			ND/11	ND/27			100*			0.19
1,1-Dichloroethene			10/13	9.8/5				<500/130	<500/62			7	7	7	7
1,2-Dichloroethene			9.3/6				260/670	1,200/2,000	820/550	7.5/8	12/-	70	70		
1,1-Dichloroethane			ND/5		8.5/13	9/-		<500/180	<500/90						700
1,2-Dichloroethane								<500/7	<500/10			5	0	5	0.38
1,1,1-Trichloroethane					ND/7			<500/370	<500/49					200	200
Trichloroethene	5.8/ND		37/27	170/110	6.8/9	6.7/-	620/550	8,400/12,000	<500/6,800	14/14	33/-	5	0	5	2.8
Tetrachloroethene			12/6	60/35			89/ND	2,700/2,900	720/540	ND/3J		5	0		0.7
Carbon Tetrachloride									<500/60			5	0	5	0.3
Benzene							820/2,000	<500/25	<500/20			5	0	5	1.0
Toluene							1,400/2,600					1,000	1,000		1,000
Ethylbenzene							230/380					700	700		29
Xylene							1,200/1,600					10,000	10,000		530
Vinyl Acetate							710/-								
Vinyl Chloride							120/-								0.015
BNA															
Napthalene							46/-								
Pesticides/PCBs															
Methoxychlor					0.5/-					0.5/-		40		100	35
Chlordane										0.5/-		2			0.027
Metals															
Antimony															
Beryllium															
Chromium		41/-	14/-	11/-	41/-	21/-	160/-	35/-	17/-	17/-	31/-	100	100	50	50
Copper		21/-		13/-	260/-	140/-	1,900/-	240/-	64/-	92/-	190/-	1,300	1,300		1,000
Lead	ND/6.3	19/5.7		7.2/8.7	12/-	6.6/-	17/6.5	15/5.8	10/10	5.5/-	12/-	15	0	50	15
Nickel					40/-	40/-	120/-								100
Zinc	26/-	390/-	53/-	160/-	140/-	76/-	480/	290/-	99/-	100/-	140/-				2,100

NOTES:

(1) 1.0/1.0/1.0 1991 analytical results/1993 analytical results/1993 Weston analytical results.
(2) 1.0/1.0 1993 analytical results/1993 Weston analytical results.
(3) Weston did not analyze for any metals except lead.
ND Not Detected.
B Indicates compound was found in the blank and the sample.
J Indicates an estimated value (Concentration is below the practical quantitation limit, but above the method detection limit).
* Standard is for total trihalomethanes as defined by the sumof concentrations of bromodichloromethane, dibromochloromethane, tribromomethane, and trichloromethane (chloroform).
Blank spaces or (-) indicates constituent not analyzed.

CAD DWG NO: TAMP0003 ORIGINAL DWG SIZE
DATE: 04-28-94 RNS 8.5 x 11
PLOT SCALE: 1=1



BVE	SOIL BORING AND MONITORING WELL LOCATIONS	TARHEEL ARMY MISSILE PLANT BURLINGTON, NORTH CAROLINA	FIGURE 2-1

TABLE 4-11
ANALYTICAL SAMPLING RESULTS - SOIL
TARHEEL ARMY MISSILE PLANT
Burlington, North Carolina

	Soil Boring B-1					Soil Boring B-2			Soil Boring B-3				Soil Boring B-4				
CONSTITUENT	0-5 ft	5-10 ft	10-15 ft	15-20 ft	20-25 ft	0-5 ft	5-10 ft	10-15 ft	0-5 ft	5-10 ft	10-15 ft	D-5 Dup.	0-5 ft	5-10 ft	5-10 ft	15-20 ft	15-20 ft
VOC (ug/kg)																	
Acetone	190	200															
Methylene Chloride																	
1,1-Dichloroethene																	
1,1-Dichloroethane																	
cis/trans-1,2																	
-Dichloroethylene																	
Benzene					6.1	18	17	15	9.1	18	17						
Tetrachloroethene						14	10	8.8	7.5	11	28						
Toluene	26		17	14	28	100	78	69	61	88	76	24	13		14		
Chlorobenzene									9.4	11	7.7	7.8					
Ethylbenzene						19		9.5	11	13	11	7.2					
Styrene							12										
Xylenes	24	6.8			20	88	54	44	56	65	49	39					
B/N/A (ug/kg)																	
Acenaphthylene									380			530					
Phenanthrene													1500	830	550		
Anthracene													470				
Fluoranthene									470			510	1800	1000	590		
Pyrene									690			680	1900	1000	660		
Chrysene									460			450	1100	490			
Benzo(a)anthracene									420			420	1000	470			
Benzo(b)fluoranthene									500			480	600				
Benzo(k)fluoranthene									550			590	760	420			
Benzo(a)pyrene									660			740	840				
Indeno(1,2,3-cd)pyrene												390	440				
Benzo(g,h,i)perylene									440			590	440				
Pesticides/PCB (ug/kg)																	
4,4'-DDE																	
Dieldrin																	
Metals (mg/kg)																	
Antimony																7.8	
Arsenic						1.4			1.6								
Beryllium				0.81									0.87	0.75	0.63	1.4	
Cadmium																	
Chromium	16	13	10	21	63	19	22		13	19	4.9	17	29	31	34	270	44
Copper	13	21	20	49	41	15	6.8		7.5	24	200	11	23	22	17	85	25
Lead	5.1	7.7	4	4.4	1.6	27	3.4		26	5	0.56	11	140	7.5	3.9	1.5	
Mercury	0.063	0.16		0.017		0.041	0.025		0.019	0.11		0.024	0.16	0.12	0.049		0.01
Nickel				7.4	32					5.6	7.3	4.3	9.2	6.8	12	130	24
Silver						2.7											
Zinc	6.9	7.6	8	40	44	60	6		66	18	39	6.3	58	34	24	86	61
Cyanide, Total (mg/kg)																	
TRPH (mg/kg)	16	52							39			48	31				
Percent Solids (%)	79	77	58	73	88	87	86	79	89	79	92	89	84	81	84	70	93

TABLE 4-11
ANALYTICAL SAMPLING RESULTS - SOIL
TAR HEEL ARMY MISSILE PLANT
Burlington, North Carolina

	Soil Boring B-5					Soil Boring B-6						Soil Boring B-7		Soil Boring B-8				
CONSTITUENT	0-5 ft	5-10 ft	5-10 ft	15-20 ft	15-20 ft	0-5 ft	5-10 ft	5-10 ft	15-20 ft	15-20 ft	0-5 Dup.	0-5 ft	0-5 Dup.	0-5 ft	5-10 ft	5-10 ft	15-20 ft	0-5 Dup.
VOC (ug/kg)																		
Acetone																		
Methylene Chloride																		
1,1-Dichloroethene																		
1,1-Dichloroethane																		
cis/trans-1,2																		
-Dichloroethylene												17						
Benzene																		
Tetrachloroethene	21															6.3		
Toluene	38	11				12	8.3		5.7	7.2	7.3						12	12
Chlorobenzene																		
Ethylbenzene	6.5																	
Styrene																		
Xylenes	30					21	15		11	12	13					6.7	19	
B/N/A (ug/kg)																		
Acenaphthylene																		
Phenanthrene			600															
Anthracene																		
Fluoranthene			1100															
Pyrene																		
Chrysene			680															
Benzo(a)anthracene			670															
Benzo(b)fluoranthene			580															
Benzo(k)fluoranthene			600															
Benzo(a)pyrene			630															
Indeno(1,2,3-cd)pyrene																		
Benzo(g,h,i)perylene																		
Pesticides/PCB (ug/kg)																		
4,4'-DDE																		
Dieldrin																		
Metals (mg/kg)																		
Antimony																		
Arsenic																		
Beryllium	0.67	3.4	2.1	2.6	2.4						0.72			0.86		1		
Cadmium											2			2.1				
Chromium	54	32	39	11		25	10	52	8	24	44	5.9	4	42	15	9.5	12	24
Copper	23	77	87	94	51	18	28	9.7	16	12	34	23	41	29	53	30	26	22
Lead	28	7.4	21	2.5	1.6	7.6	5.9	4.5	1.3	0.73	6.8	4.8	4.5	6.6	3.4	0.66	0.54	7.8
Mercury	0.16	0.034	0.28	0.015		0.08	0.034	0.018	0.011	0.01	0.049	0.028	0.028	0.027	0.029			0.021
Nickel	11	8.8	15	13	17			14	7.2	7.6	14	6.4	5	8.6	10	8.5		10
Silver																		
Zinc	75	68	120	150	130	19	18	32	34	14	54	31	53	41	43	43	18	22
Cyanide, Total (mg/kg)								8.3										
TRPH (mg/kg)	28							16			43			33				27
Percent Solids (%)	88	72	72	68	75	76	74	74	84	93	74	74	84	85	83	83	82	85

TABLE 4-11
ANALYTICAL SAMPLING RESULTS - SOIL
TARHEEL ARMY MISSILE PLANT
Burlington, North Carolina

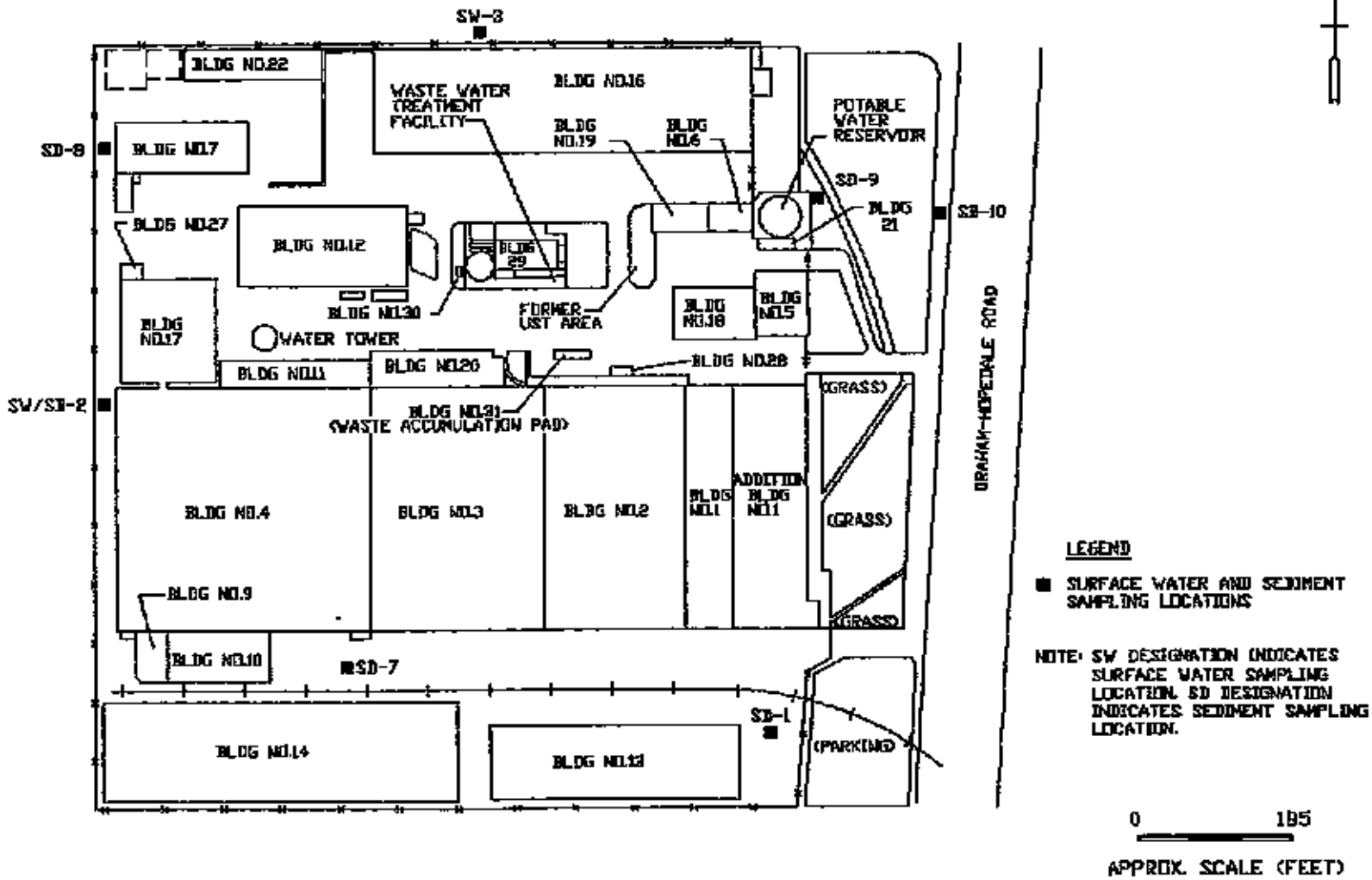
	Soil Boring B-9			Soil Boring B-10					Soil Boring B-11							
CONSTITUENT	0-5 ft	5-10 ft	0-5 Dup.	0-5 ft	5-10 ft	5-10 ft	15-20 ft	0-5 Dup.	0-5 ft	5-10 ft	5-10 ft	15-20 ft	15-20 ft	20-25 ft	25-30 ft	0-5 Dup.
VOC (ug/kg)																
Acetone					170											
Methylene Chloride																
1,1-Dichloroethene					18											
1,1-Dichloroethane					13											
cis/trans-1,2																
-Dichloroethylene																
Benzene																
Tetrachloroethene									5.9							8.4
Toluene	14		35	6.7			12		16			13	13	16	24	20
Chlorobenzene			9.5													
Ethylbenzene																
Styrene																
Xylenes			28	13					18				6	7.6	18	19
B/N/A (ug/kg)																
Acenaphthylene																
Phenanthrene																
Anthracene																
Fluoranthene	1700															
Pyrene	1800															
Chrysene	1300															
Benzo(a)anthracene	1300															
Benzo(b)fluoranthene	1100															
Benzo(k)fluoranthene	1300															
Benzo(a)pyrene	1200															
Indeno(1,2,3-cd)pyrene	590															
Benzo(g,h,i)perylene	510															
Pesticides/PCB (ug/kg)																
4,4'-DDE	17															
Dieldrin																
Metals (mg/kg)																
Antimony																
Arsenic																2
Beryllium	0.96	0.66														
Cadmium																
Chromium	22	4.8	9	4.3	32	5.1	3.9	18	20	31	23	12	3.2	9.3	1.2	38
Copper	54	4.8	36	6.3	20	10	8.9	8.7	25	98	110	69	33	27	48	26
Lead	42	3.7	15	5.6	3.5	1.4	0.9	5.5	11	1.9	2.1	1.9	0.66	0.83	0.6	12
Mercury	0.034	0.032	0.025	0.054	0.014	0.016		0.067	0.029	0.027	0.018					0.026
Nickel	8.4		4.6					6.3	5.7	20	11	5.9		7.1	5.7	8.8
Silver																
Zinc	72	88	41	18	18	23	20	12	48	51	67	47	33	36	43	120
Cyanide, Total (mg/kg)																
TRPH (mg/kg)	85		44	52	23			46	21	220	29					23
Percent Solids (%)	66	82	83	94	76	82	84	93	96	83	83	91	93	83	87	94

TABLE 4-11
ANALYTICAL SAMPLING RESULTS - SOIL
TARHEEL ARMY MISSILE PLANT
Burlington, North Carolina

	Soil Boring B-12				Soil Boring MWC-1						Soil Boring MWC-2			Soil Boring MWC-3		Soil Boring MWC-4			
CONSTITUENT	0-5 ft	5-10 ft	5-10 ft	0-5 Dup.	0-5 ft	5-10 ft	10-15 ft	15-20 ft	20-25 ft	25-30 ft	0-5 ft	5-10 ft	5-10 Dup	0-5 ft	5-10 ft	0-5 ft	5-10 ft	10-15 ft	0-5 Dup.
VOC (ug/kg)																			
Acetone						83	110					81			74				
Methylene Chloride												6.2		6.1					
1,1-Dichloroethene																			
1,1-Dichloroethane																			
cis/trans-1,2																			
-Dichloroethylene																			
Benzene																			
Tetrachloroethene																			
Toluene	11	9.3		10															
Chlorobenzene																			
Ethylbenzene																			
Styrene																			
Xylenes	18	15		21															
B/N/A (ug/kg)																			
Acenaphthylene																			
Phenanthrene				410															
Anthracene																			
Fluoranthene				450		430													
Pyrene				480						500									
Chrysene										440									
Benzo(a)anthracene																			
Benzo(b)fluoranthene						520				860									
Benzo(k)fluoranthene																			
Benzo(a)pyrene						530				790									
Indeno(1,2,3-cd)pyrene					490					680									
Benzo(g,h,i)perylene					630					880									
Pesticides/PCB (ug/kg)																			
4,4'-DDE																			
Dieldrin								4											
Metals (mg/kg)																			
Antimony																			
Arsenic																			
Beryllium																			
Cadmium																15	24	23	6.9
Chromium	13	110	8.3	6.1	23	10	13	9.8	16	13	25	52	37	9.5	13	45	31	29	9.7
Copper	24	49	34	37	23	83	57	44	17	23	46	29	38	21	31	45	16	14	30
Lead	16	0.96	0.96	23	5.1	2.3	2.7	2.5	1.7	2.8	28	1.3	8.5	13	5.2	13	14	12	11
Mercury	0.037			0.03															
Nickel	8.5	52			6		5.8	5	8.3	8.5	5.6	7.8	9.6		4.8	15		8	
Silver																			
Zinc	21	52	40	31	22	110	71	61	50	59	41	23	37	32		58	25	58	26
Cyanide, Total (mg/kg)																			
TRPH (mg/kg)	18	15		26															
Percent Solids (%)	85	81	91	86	81	82	81	81	81	79	84	81	80	87	85	70	84	80	81

CAD DWG NO: TAMF0015
DATE: 05-03-94 RWS
PLOT SCALE: 1=1

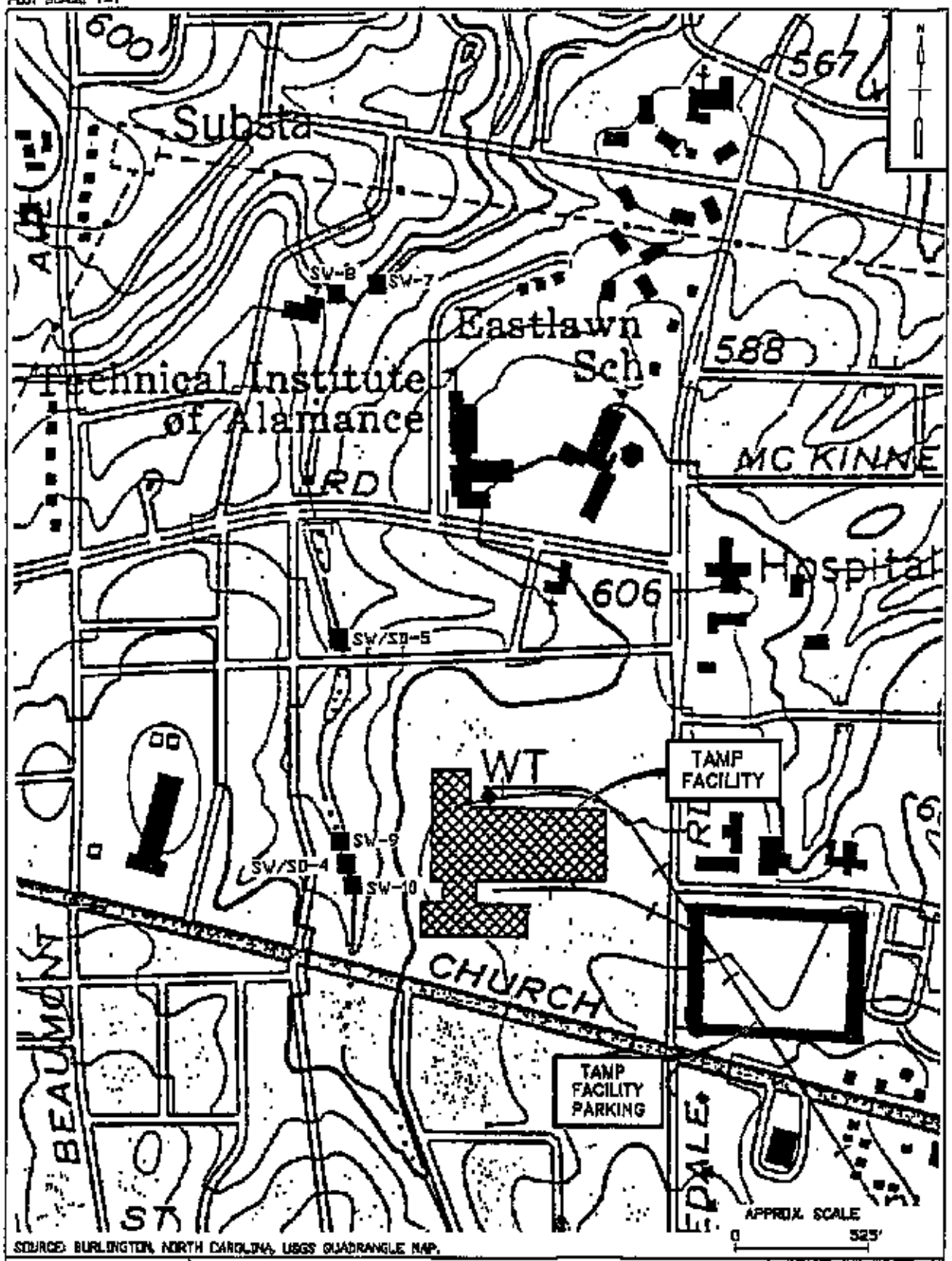
ORIGINAL DWG SIZE
8.5 x 11



	SURFACE WATER AND SEDIMENT SAMPLING LOCATIONS ON THE TAMP FACILITY	TARHEEL ARMY MISSILE PLANT BURLINGTON, NORTH CAROLINA	FIGURE 2-3

CAD DWG NO: TANPOOOA
DATE: 04-28-94 RWS
PLOT SCALE: 1=1

ORIGINAL DWG SIZE
11 x 8.5



SOURCE: BURLINGTON, NORTH CAROLINA, USGS QUADRANGLE MAP.

SURFACE WATER AND SEDIMENT SAMPLING LOCATIONS
OFF THE TAMP FACILITY
TARHEEL ARMY MISSILE PLANT
BURLINGTON, NORTH CAROLINA

FIGURE 2-4

Table 4-13
Analytical Sampling Results - Surface Water
Tarheel Army Missile Plant
Burlington, North Carolina

Constituent (μg/L)	Surface Water									
	SW-2	SW-3	SW-4	SW-5	SW-5 Dup.	SW-7	SW-8	SW-9	SW-9 Dup.	SW-10
VOC										
Chlorobenzene							14			
cis/trans-1,2-Dichloroethene				7.8	7.8					
Trichloroethene	12	12	41	24	25					
Tetrachloroethene			41	34	34					
BNA						N/A	N/A	N/A	N/A	N/A
Pesticides/PCB						N/A	N/A	N/A	N/A	N/A
Metals										
Antimony										
Arsenic										
Beryllium										
Cadmium										
Chromium										
Copper										
Lead	7									
Mercury										
Nickel										
Silver										
Zinc	590	75	20	42	31	26	23	42	48	37
Cyanide, Total						N/A	N/A	N/A	N/A	N/A
TRPH						N/A	N/A	N/A	N/A	N/A

N/A Sample not analyzed for this constituent.

Note: Blank spaces indicate constituent not detected.

Contract Number
DACA21-96-D-0010
Delivery Order 0008

US Army Corps
of Engineers
Savannah District

TARHEEL ARMY MISSILE PLANT

ABANDONMENT OF TWO WELLS AND ADDITIONAL SAMPLING AT FORMER UST #3

Report

December, 1997

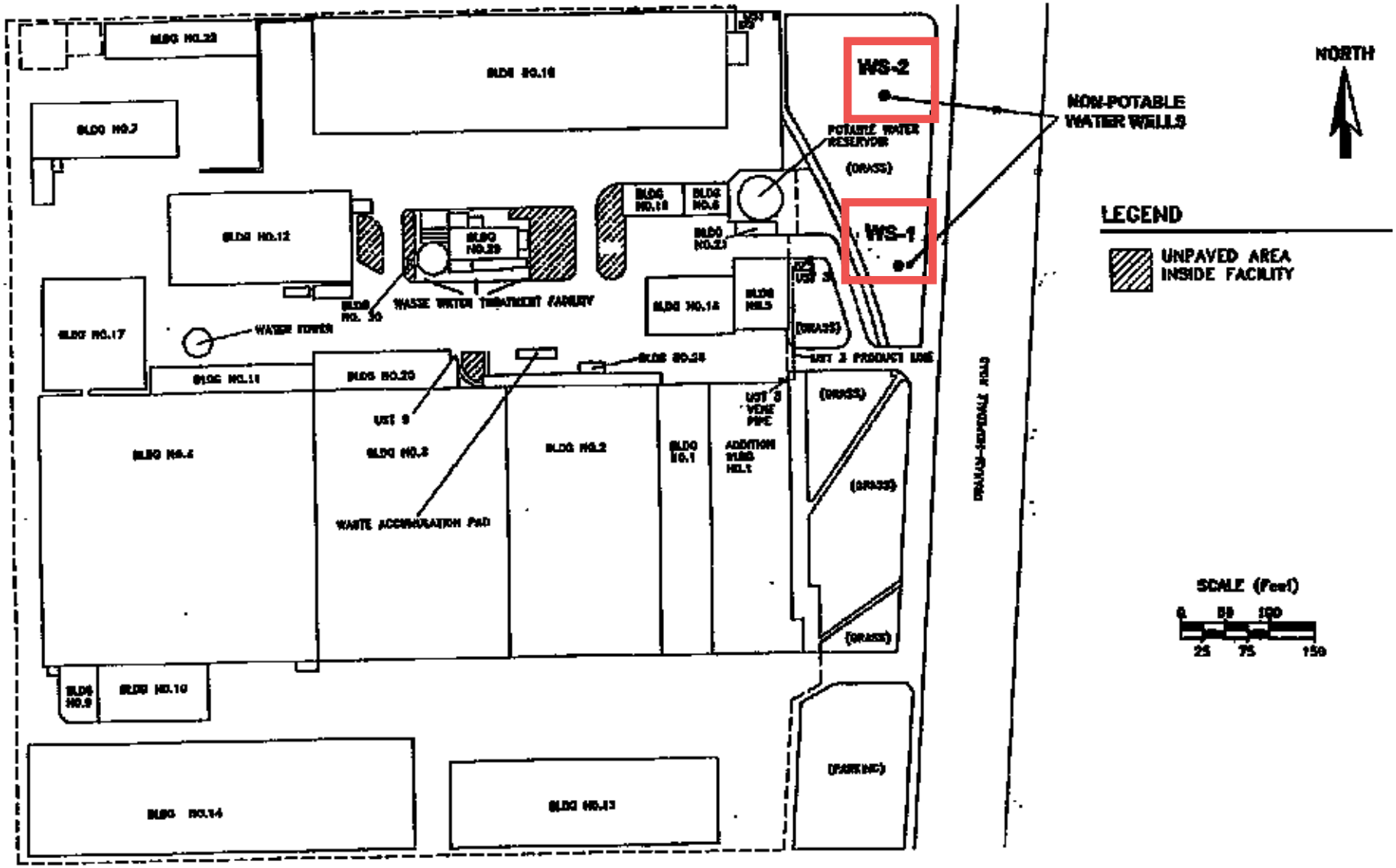


Figure 2-2
The TAMP Facility and Locations of
Abandoned Non-Potable Water Wells

ALAMANCE COUNTY HEALTH DEPARTMENT
209 N. Graham-Hopedale Road
Burlington, North Carolina 27217-2971
Phone Number 227-0101

MAP CODE _____

LOT _____ BLOCK _____

WELL ABANDONMENT RECORD

Contractor Badger Drilling Inc. Registration No. 1279

Well Location: (Show a sketch of the site at right of this form) WS-1

Owner Tarheel Army Missile Plant

Address 204 Graham-Hopedale Rd.
Burlington, NC 27217

Topography: draw, slope, hilltop, valley, (flat)

Use of Well non-potable water supply well Date 11/4/97

Total Depth 53' Diameter 8-inch

Casing Removed:

Feet	Diameter
48'	5-inch inner casing

Sealing Material:

Neat Cement		Sand Cement	
Bags cement	23	Bags cement	
Gals. water	161	Yds. sand	
		Gals. water	

Other:

Type material Bentonite

Amount 1:20 or 5% of Portland Cement Mixture

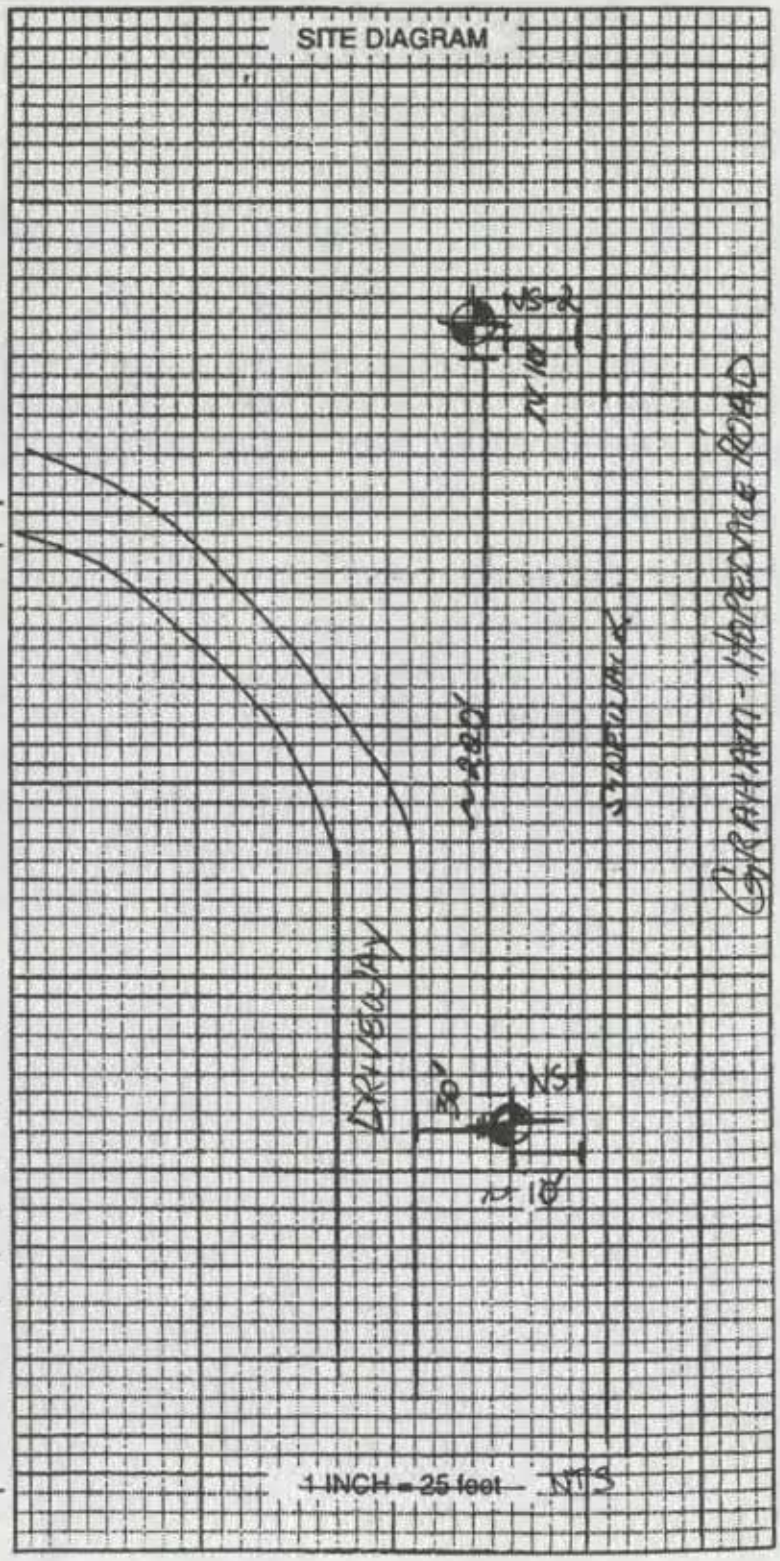
Explain method of emplacement of material:
(see attached)

I do hereby certify that this well abandonment record is true, exact and in accordance with "Regulations Governing the Construction and Abandonment of Wells in Alamance County, North Carolina."

Bethina M. Davis
Signature

12-16-97
Date

SITE DIAGRAM



Grouting Procedures for WS-1:

The borehole was grouted to the surface by pumping a Portland cement/bentonite mixture through a tremie pipe from the bottom of the well inside the casing to the top of the casing, and from the bottom of the over-drilled space between the casing and the borehole to the ground surface. Grout was allowed to flow from the borhole and well casing at the ground surface.

ALAMANCE COUNTY HEALTH DEPARTMENT
209 N. Graham-Hopedale Road
Burlington, North Carolina 27217-2971
Phone Number 227-0101

MAP CODE _____

LOT _____ BLOCK _____

WELL ABANDONMENT RECORD

Contractor Badger Drilling Inc. Registration No. 1279

Well Location: (Show a sketch of the site at right of this form) WS-2

Owner Tarheel Army Missile Plant

Address 204 Graham-Hopedale Rd.
Burlington, NC 27217

Topography: draw, slope, hilltop, valley, (flat)

Use of Well non-potable water supply well Date 11/5/97

Total Depth 73' Diameter 8-inch

Casing Removed:

Feet	Diameter

Sealing Material:

Neat Cement		Sand Cement	
Bags cement	51	Bags cement	
Gals. water	357	Yds. sand	
		Gals. water	

Other:

Type material (1) Bentonite (2) Bentonite Pellets

Amount (1) 1:20 or 5% of Portland Cement Mixture
(2) 36 bags

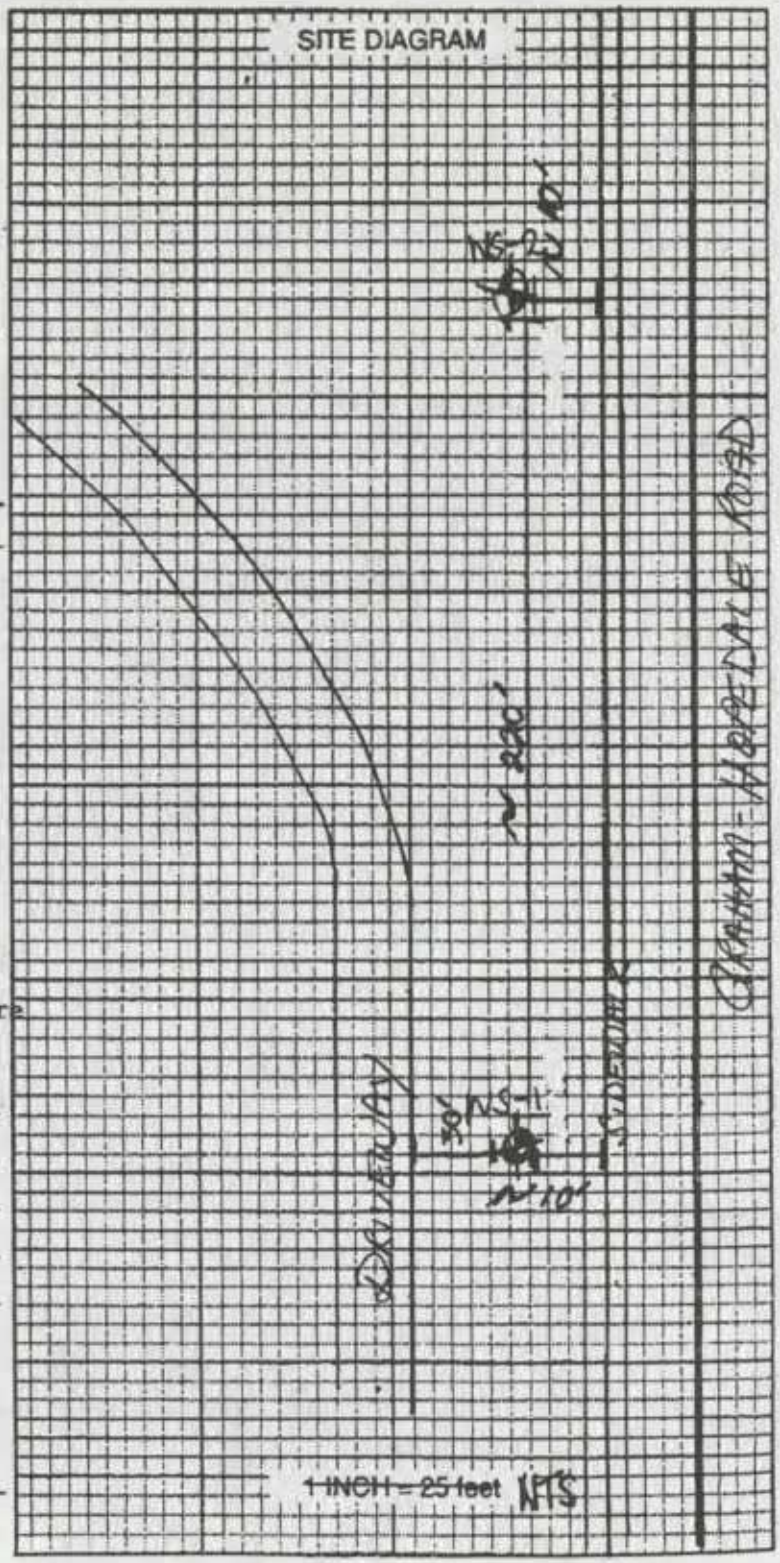
Explain method of emplacement of material:
(see attached)

I do hereby certify that this well abandonment record is true, exact and in accordance with "Regulations Governing the Construction and Abandonment of Wells in Alamance County, North Carolina."

Patricia M. Davis
Signature

12-16-97
Date

SITE DIAGRAM



Grouting Procedures for WS-2:

The borehole was grouted by pumping a Portland cement/bentonite mixture through a tremie pipe from the bottom of the well inside the casing to the top of the casing, and from the bottom of the over-drilled space between the casing and the borehole to 7 ft bgs. At 7 ft bgs, a high permeability gravel layer was encountered. The grout was flowing out of the borehole to the formation. To stop the flow of grout, approximately 36 bags of bentonite pellets were poured into the borehole. The bentonite pellets were brought to 3 ft bgs and allowed to hydrate for approximately 2 hours. Grout was then brought to the ground surface and allowed to flow from the borehole and the well.

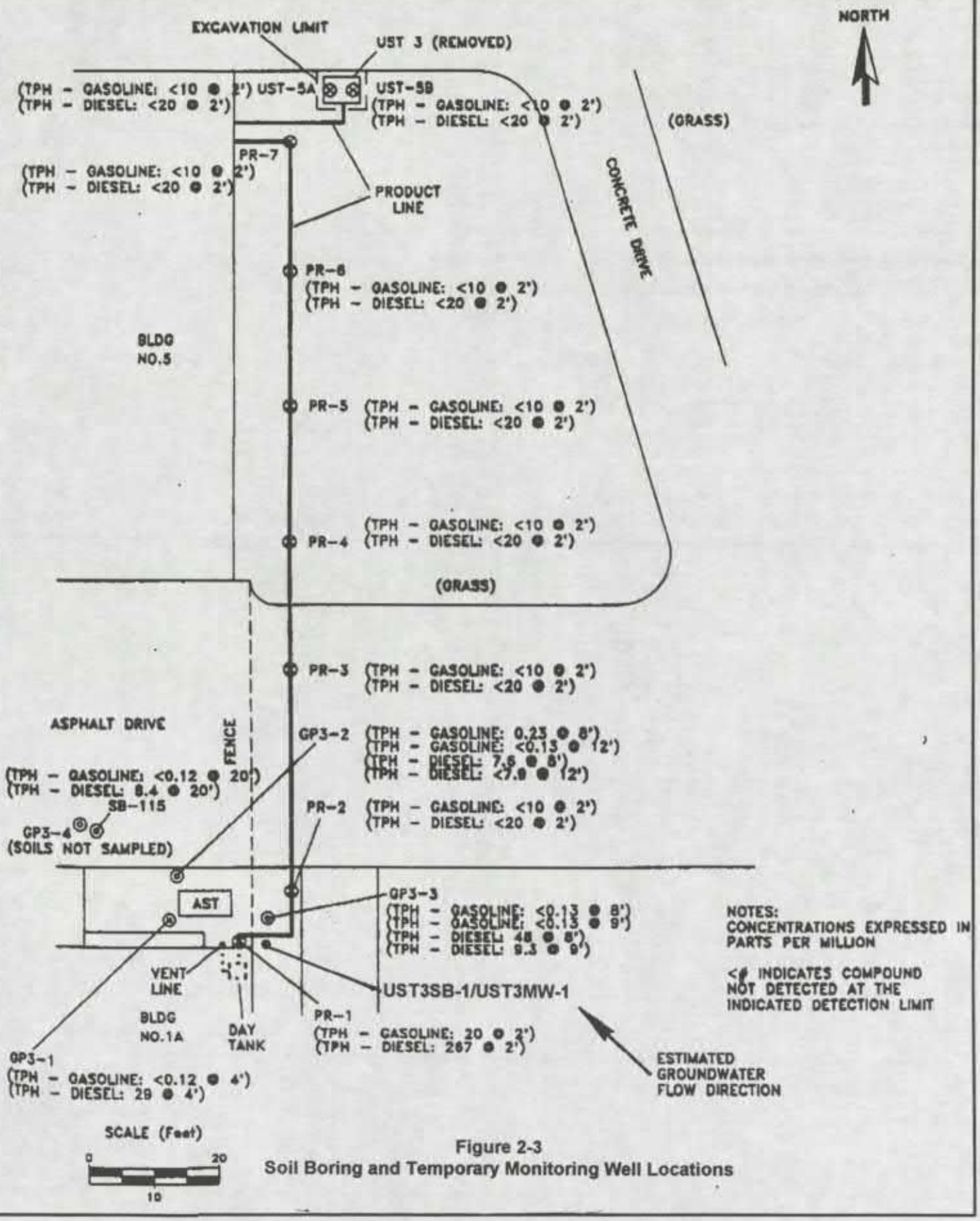


Figure 2-3
Soil Boring and Temporary Monitoring Well Locations

Source: Roy F. Weston, Initial Site Characterization Report
Tarheel Army Missile Plant, 1995

Table 4-1
Additional Sampling at UST #3
Subsurface Soil Detected Results

PARAMETER	PQL	Industrial Soil RBC[a]	RC[b]	UST3SB-1		UST3SB-1D
Site ID				UST3SB-1		UST3SB-1D
Field Sample Number				UST3SB-1		UST3SB-1D
Collection Date				11/6/97		11/6/97
Depth (ft bgs)				10-11.5		10-11.5
METALS (µg/kg)						
Lead	500	400,000[c]	500	1410	D	2000
VOLATILES (µg/kg)						
Ethylbenzene	100	$2X10^7$	100	901	D	1670
o-Xylene	100	$1X10^9$	100	1040	D	829
SEMIVOLATILES (µg/kg)						
Acenaphthene	70	$1.2x10^7$	70	740	D	890
Dibenzofuran	70	$8.2X10^5$	70	460	D	490
Fluorene	70	$8.2X10^6$	70	540	D	610
2-Methylnaphthalene	100	$6.1X10^6$	100	7800	D	8000
Naphthalene	70	$8.2X10^6$	70	740	D	710
Phenanthrene	70	$6.1X10^6$	70	2800	D	2800

BOLD - Values exceed the RCs

D - Duplicate Analysis

PQL - Practical Quantitation Limit

RBC - Risk-Based Concentration (USEPA, 1997)

RC - Reportable Concentration

a - RBCs for noncarcinogens are conservatively based on a hazard quotient of 0.1 instead of 1.0, following USEPA Region III guidance.

b - The RCs are provided in the North Carolina DEHNR Groundwater Section Guidelines for the Investigation and Remediation of Soil and Groundwater (DEHNR, 1997). According to the North Carolina guidelines, any analyte without an established RC that is detected must be reported.

c - Residential soil lead screening level (USEPA, 1994).

Table 4-2
Additional Sampling at UST #3
Groundwater Detected Results

PARAMETER	PQL	MCL	[illegible]	[illegible]	[illegible]
Site ID					UST3MW-1
Field Sample Number					UST3MW-1
Collection Date					11/7-8/97
Depth (ft bgs)					11.5
[illegible]					
Ethylbenzene	1	700	130	29	1.86
[illegible]					
Acenaphthene	1	NA	220	80	3.8
Fluorene	1	NA	160	280	2.8
Naphthalene	1	NA	150	21	30
2-Methylnaphthalene	1	NA	110	1[b]	46
Phenanthrene	1	NA	110	210	7.2

BOLD - Value exceeds 2L Standards
MCL - Maximum Contaminant Level (USEPA, 1996)
NA - Not Applicable
PQL - Practical Quantitation Limit
RBC - Risk-Based Concentration (USEPA, 1997)

a - RBCs for noncarcinogens are conservatively based on a hazard quotient of 0.1 instead of 1.0, following USEPA Region III guidance.
b - The 2L Standards are provided in NCAC Title 15A, North Carolina DEHNR Division of Environmental Management, Subchapter 2L, Section .0202, Groundwater Quality Standards (DEHNR, 1993).
c - According to the North Carolina guidelines, any analyte without an established 2L Standard that is detected must be reported (DEHNR, 1997).

Federal Remediation Branch

93

Your Name:	DJL
EPA ID:	NC7210020544
Facility Name:	TAMP
Document Group:	FRB CERCLA (FRCERCLA)
Document Type:	Remedial Action (RA)
Description:	Soil Sampling results
Date of Doc:	10/29/2004
Author of Doc:	Solutions I&E Services, Inc.
Box No:	10003

File Room Use Only

NC7210020544

	Month	Day	Year
Date Recieved by File Room:			
Date Scanned:			

Scanner's Initials:

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NOV 1 2004
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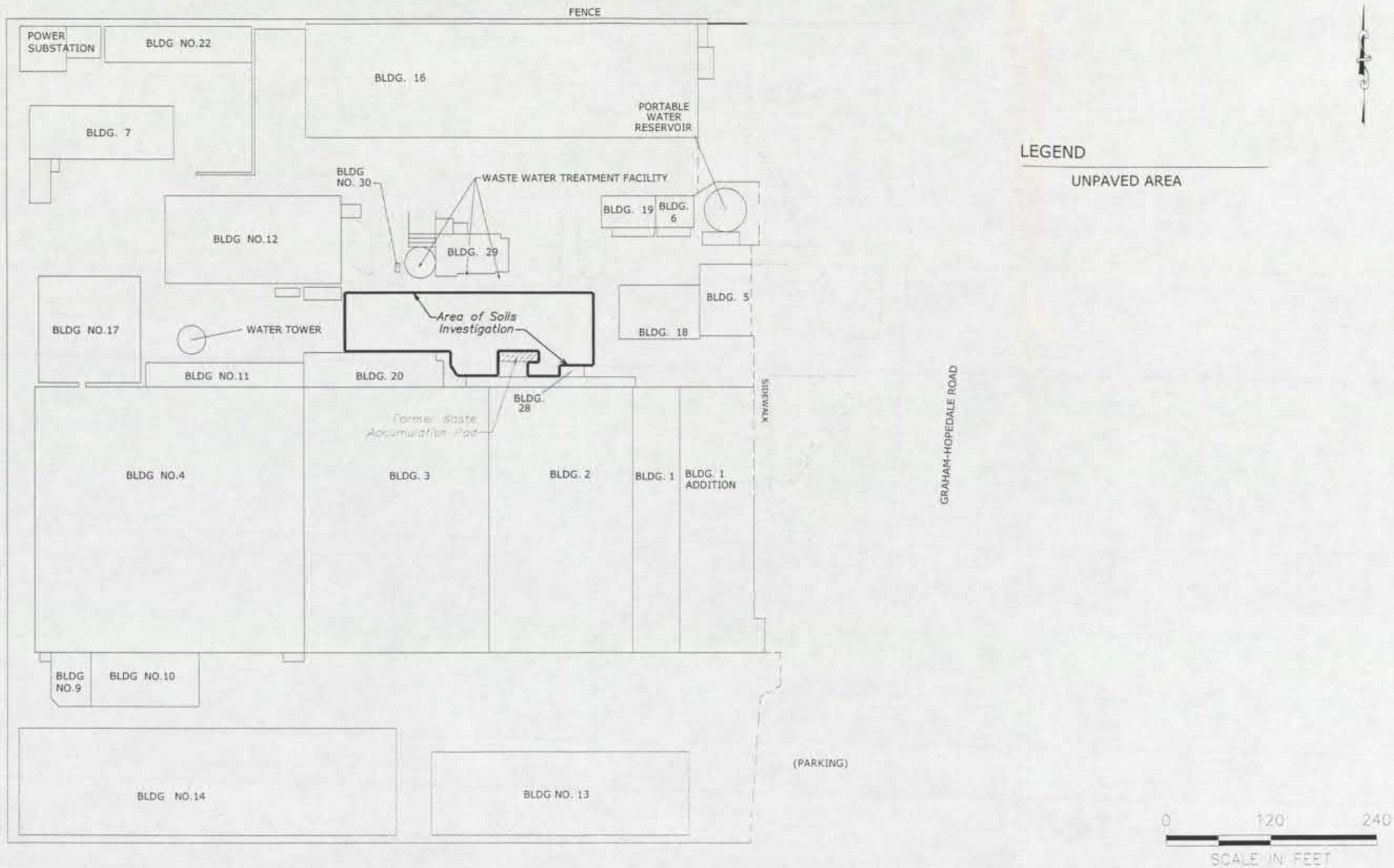
Tarheel Army Missile Plant Remediation
Soil Sampling Results

For
U.S. Army Environmental Center
Aberdeen Proving Ground, Edgewood Area
Aberdeen, MD 21010-5401
Contract DACA65-03-C-0083

By
Solutions Industrial & Environmental Services, Inc.
3722 Benson Drive
Raleigh, North Carolina 27609

NORTH CAROLINA
LICENSED
SEAL
584
GEOLOGIST
WALTER J. BECKWITH

29 October 2004



PROJECT NUMBER 1930.02A3.00TA

DRAFTER DKH/CZ

CHECKED BY WB

PROJECT MANAGER WB

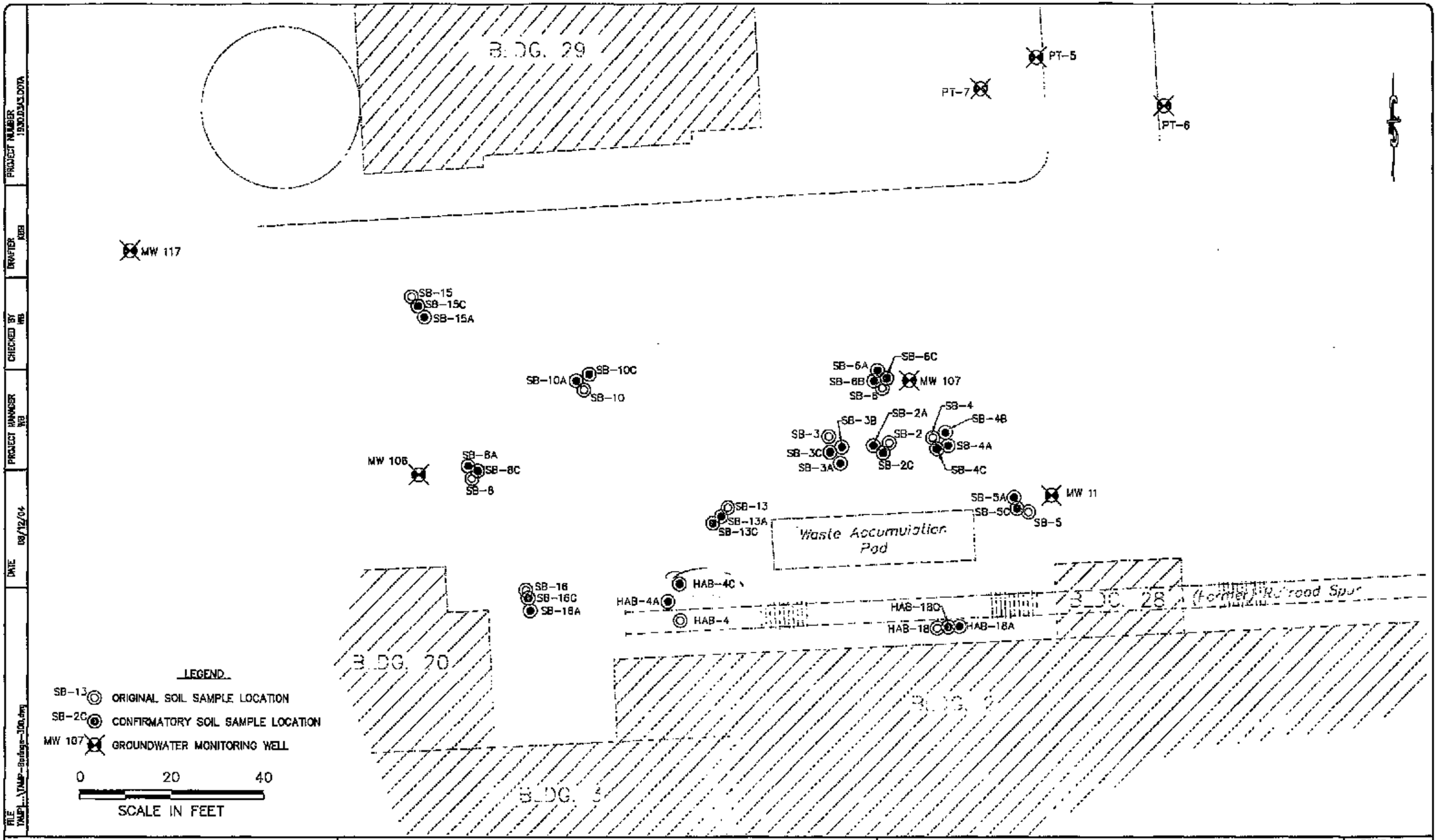
DATE 12/19/03

FILE FIGURE2 Soil Facility Layout.dwg

Solutions
Industrial & Environmental Services
3722 BENSON DRIVE
RALEIGH, NORTH CAROLINA 27609
TEL.: (919) 873-1060 FAX.: (919) 873-1074

FACILITY LAYOUT
TARHEEL ARMY MISSILE PLANT
BURLINGTON, NORTH CAROLINA
CONTRACT NO: DACA 65-03-C-0083

FIGURE: 2



Solutions
Industrial & Environmental Services
3722 BENSON DRIVE
RALEIGH, NORTH CAROLINA 27609
TEL.: (919) 873-1060 FAX.: (919) 873-1074

SOIL BORING LOCATIONS
TARHEEL ARMY MISSILE PLANT
BURLINGTON, NORTH CAROLINA
CONTRACT NO. DACA-65-03-C-0083

FIGURE: 3

Table 4-1
2004 Soil Boring Locations with Contaminants Exceeding Target Remedial Endpoints
Tarheel Army Missile Plant
Burlington, North Carolina

Compound or Analyte		Benzene	*cis* and *trans* 1,2-Dichloroethene	Trichloroethene	Tetrachloroethene	1,2 Dichloroethane	Total Petroleum Hydrocarbons (Method 418.1)	Total Petroleum Hydrocarbons (Method 8015)	
Soil Target Remedial Endpoint		9.3µg/kg	1,300 µg/kg	1,400 µg/kg	13 µg/kg	5µg/kg	120 mg/kg	40 mg/kg	10 mg/kg
Soil Boring Number	Depth (ft bgs)	Concentrations are in µg/kg					Concentrations are in mg/kg		
HAB-4	3'						19	42.7	<10
	6'-7'		3,232	39,100		10.8			
SB-18	2'-2.5'						1,030	502	61.5

NCDENR, 2013, Letter from John Walsh, Inactive Sites Branch, Response Letter to Spencer, Fane, Britt, & Browne LLP, July 12.

NCDENR
North Carolina Department of Environment and Natural Resources
Division of Waste Management

Pat McCrory
Governor

Dexter R. Matthews
Director

John E. Skvarla, III
Secretary

July 12, 2013

Kathleen M. Whitby
Spencer Fane Britt & Browne LLP
1 North Brentwood Boulevard, Suite 1000
St. Louis, Missouri 63105-3925

Re: USA Tar Heel Army Missile Plant (TAMP)
204 Graham-Hopedale Rd.
Burlington, Alamance County, North Carolina
NC7210020544

Dear Ms. Whitby:

I have received a copy of your June 28, 2013 letter regarding the subject site (the "Site"). Because the US Army/Department of Defense (DOD) is not involved with remedial activities, the Site is currently under the regulatory jurisdiction of the Inactive Hazardous Sites Branch of the Division of Waste Management's Superfund Section. If the US Army/DOD begins working on the Site in the future, oversight responsibility will be transferred to the Federal Remediation Branch of the Superfund Section.

Based on the information included in your letter, it appears that your client, Alcatel-Lucent USA, Inc. (ALU) is performing remedial activities at the subject Site. Please be aware that these activities are being performed independently without state oversight and approval. If your client would like to receive state approval for future assessment and cleanup activities at the Site they can enter into the Inactive Hazardous Sites Branch's Voluntary Cleanup Program. To participate in the voluntary cleanup program, ALU would need to enter into an administrative agreement with the Branch. Depending on the severity of the Site, oversight and approval of the work would proceed through our privatized oversight program known as the Registered Environmental Consultant Program or under direct oversight by the Branch staff. If ALU would like to enter the voluntary cleanup program, please complete the attached Site Cleanup Questionnaire.

For additional information on the Inactive Hazardous Sites Program, please see our website at http://portal.ncdenr.org/web/wm/sf/ihshome. If you have any questions, please contact me at (919) 707-8356 or John.Walch@ncdenr.gov.

Sincerely,

John W. Walch
Eastern Unit Supervisor
Inactive Hazardous Sites Branch

Attachment

1646 Mail Service Center, Raleigh, North Carolina 27699-1646
Phone: 919-707-8200 | Internet: http://portal.ncdenr.org/web/wm

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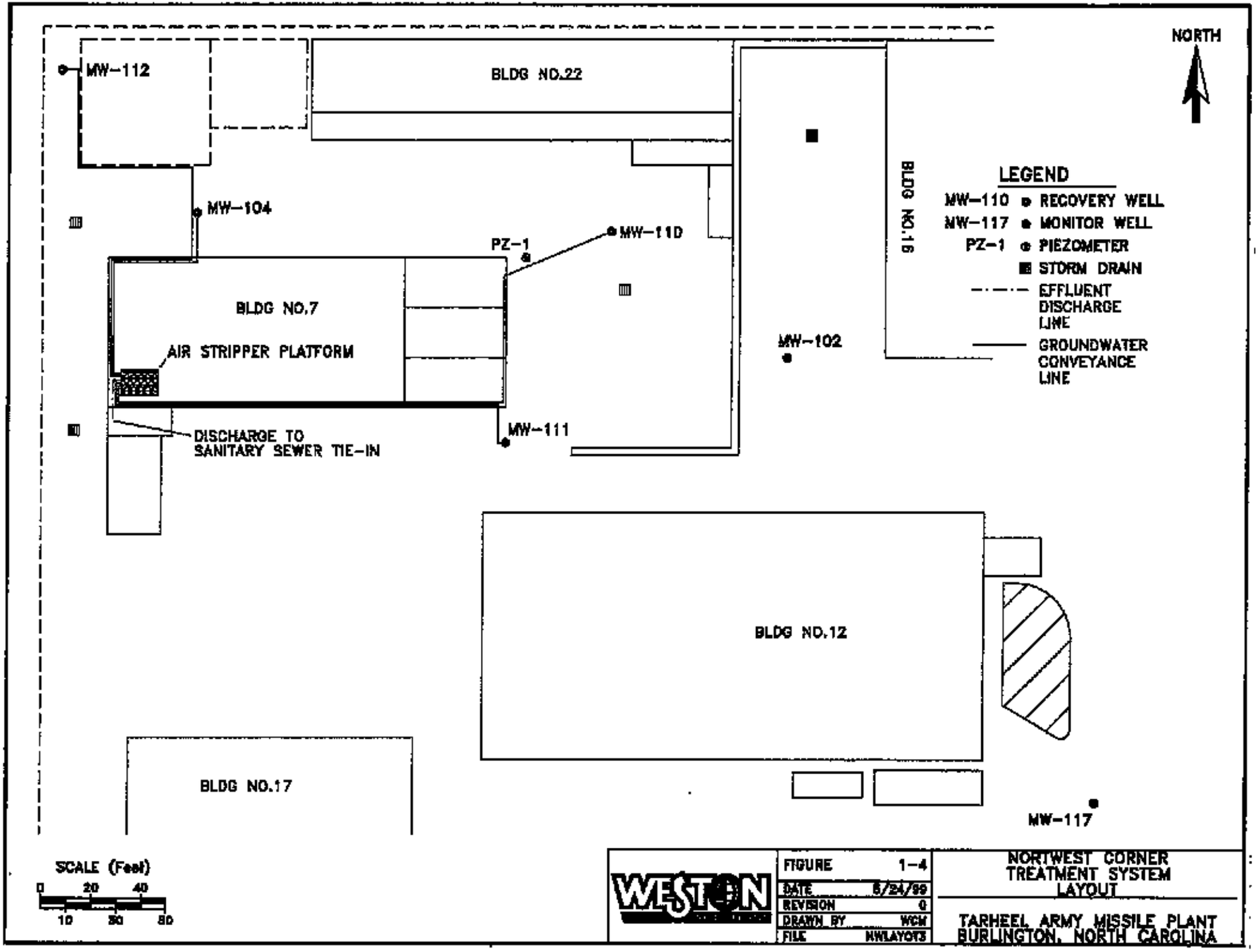
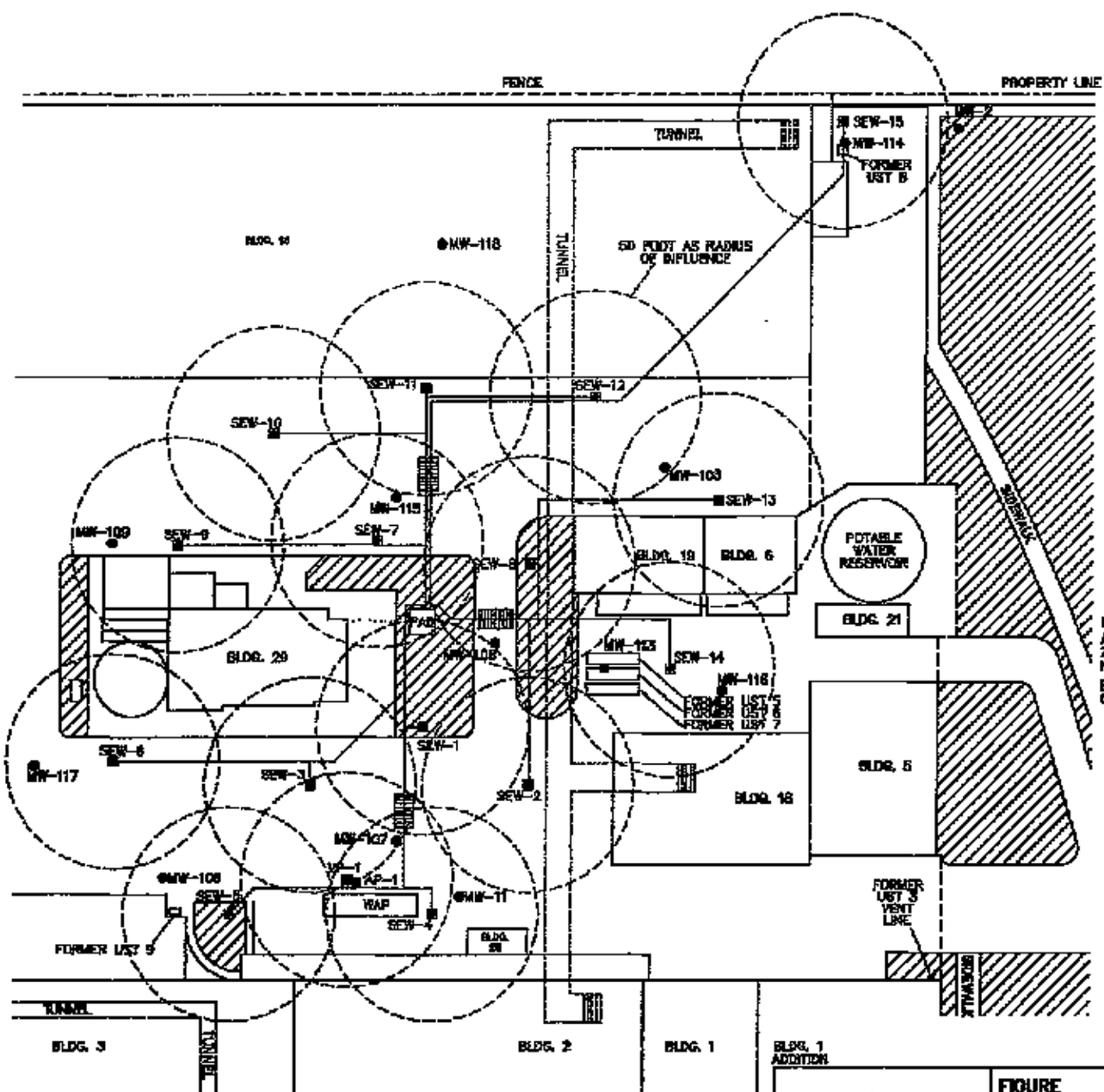

NORTH
MW-112
BLDG NO.22
MW-104
PZ-1
MW-110
BLDG NO.7
AIR STRIPPER PLATFORM
DISCHARGE TO
SANITARY SEWER TIE-IN
MW-111
MW-102
BLDG NO.16
LEGEND
MW-110 RECOVERY WELL
MW-117 MONITOR WELL
PZ-1 PIEZOMETER
STORM DRAIN
EFFLUENT DISCHARGE LINE
GROUNDWATER CONVEYANCE LINE
BLDG NO.12
BLDG NO.17
MW-117
SCALE (Feet)
0 20 40
10 30 50
WESTON
FIGURE 1-4
DATE 5/24/99
REVISION 0
DRAWN BY WCM
FILE NWLAYOUT3
NORTWEST CORNER TREATMENT SYSTEM LAYOUT
TARHEEL ARMY MISSILE PLANT
BURLINGTON, NORTH CAROLINA



LEGEND

- UNPAVED AREA INSIDE FACILITY
- SEW-13 — SPARGE/EXTRACTION WELL WITH ABOVE GROUND PIPING
- MW-103 — MONITORING WELL
- TRAFFIC AREA ACCESS RAMP
- ELECTRICAL AND TELEPHONE SERVICE

NOTE:
AREAS OF DISSOLVED PHASE CONTAMINATION NOT WITHIN SPARGING ZONE OF INFLUENCE WILL BE REMEDIATED AS GROUNDWATER NATURALLY MIGRATES TO ZONES OF AERATION

BUILDING 29 IS BUILT TO BEDROCK AND IS CONSIDERED TO DIVERT GROUNDWATER; THEREFORE, COVERAGE IN THIS AREA IS NOT REQUIRED

APPROXIMATE SCALE (FEET)
0 50
25 75

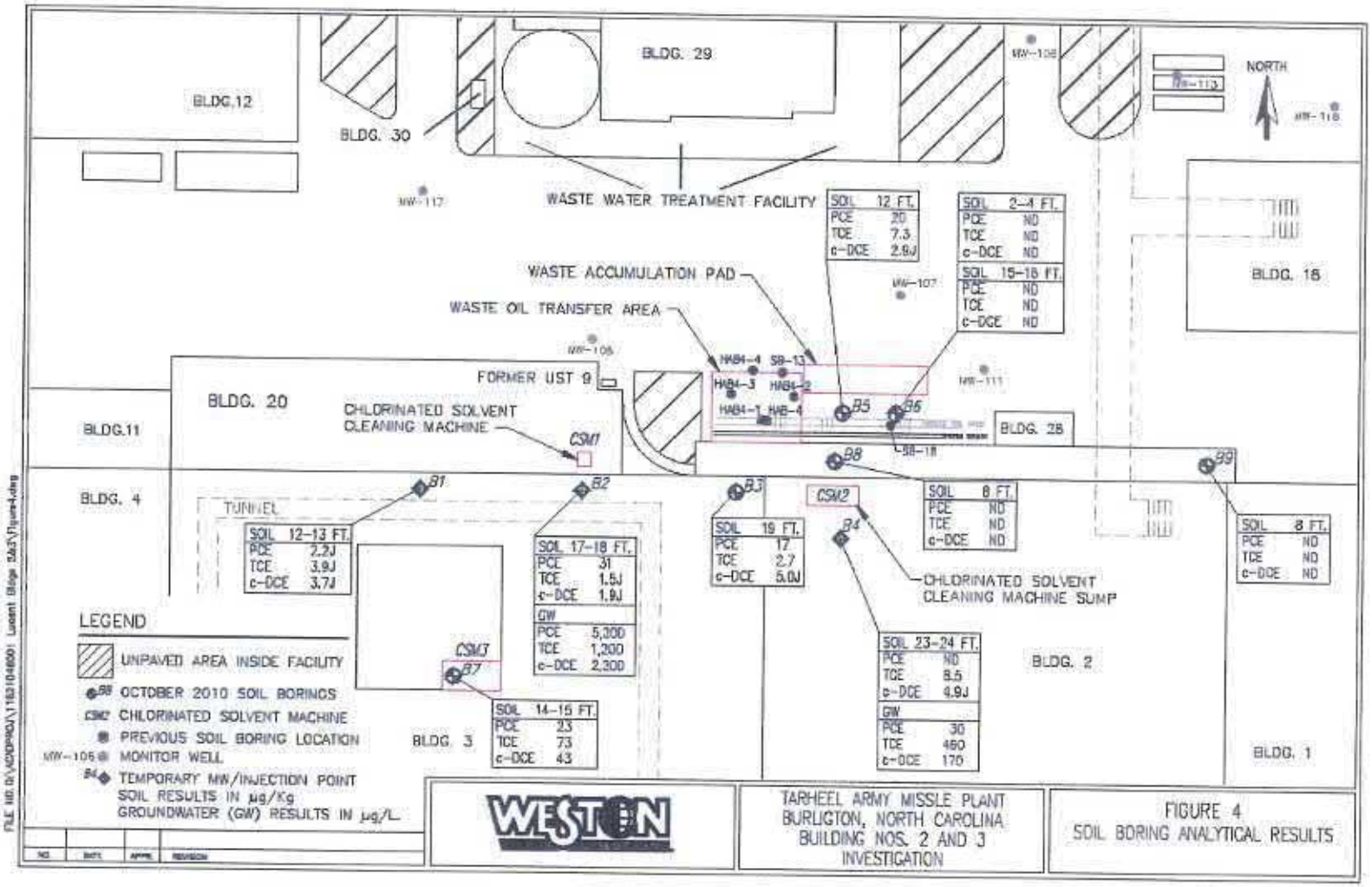
WESTON

FIGURE	1-5
DATE	7/25/96
REVISION	0
DRAWN BY	WM
FILE	TAMPSVE2

AIR SPARGE/
SOIL VAPOR EXTRACTION
SYSTEM LAYOUT

TARHEEL ARMY MISSILE PLANT
BURLINGTON, NORTH CAROLINA

2010 Soil Boring Investigation Results



Lucent Technologies – Proprietary
Use pursuant to company instruction

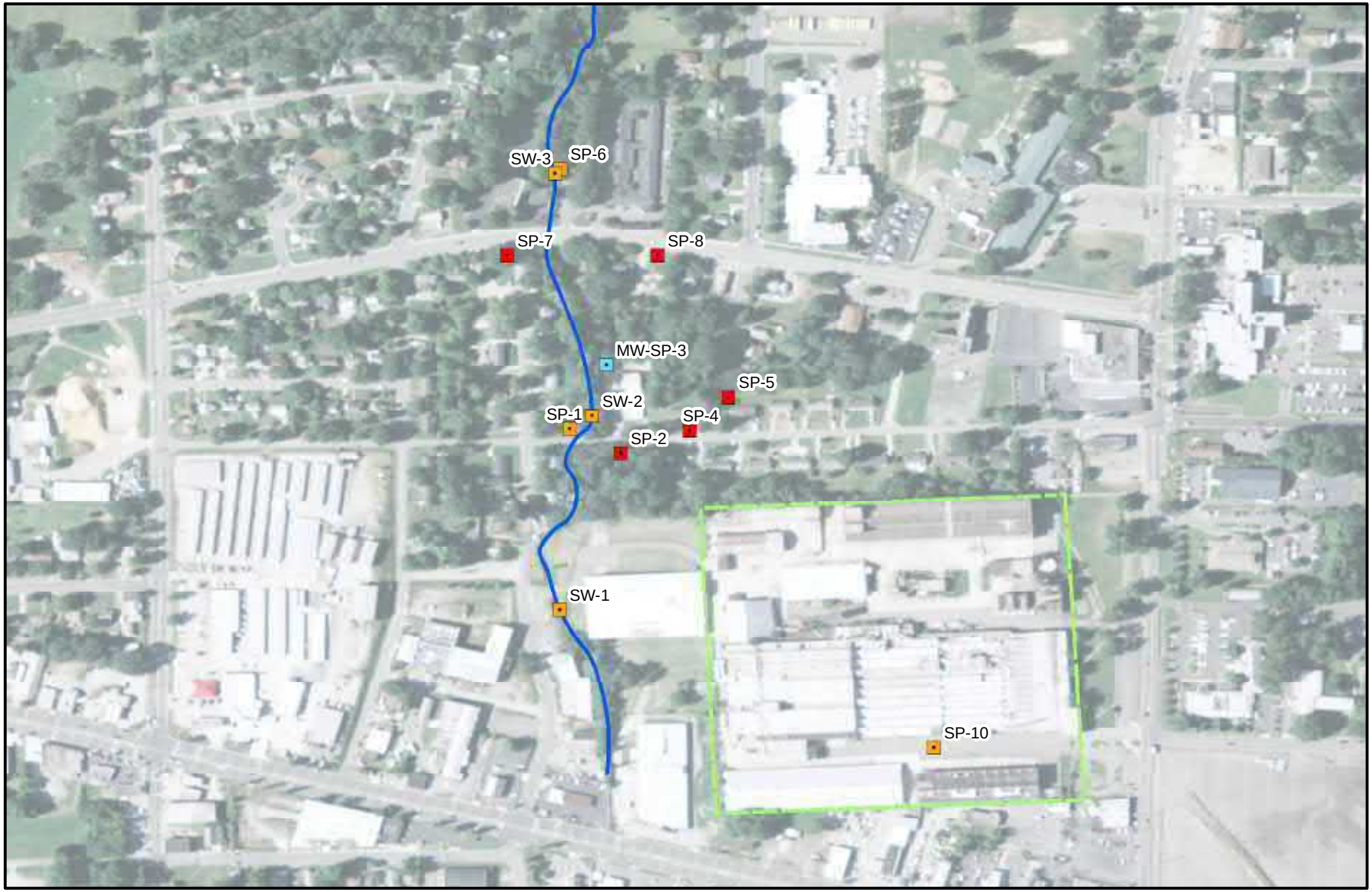
SAMPLING REPORT

FOR

TARHEEL ARMY MISSILE PLANT
CHLORINATED SOLVENT PLUME

BURLINGTON, NORTH CAROLINA

September 2015



Legend

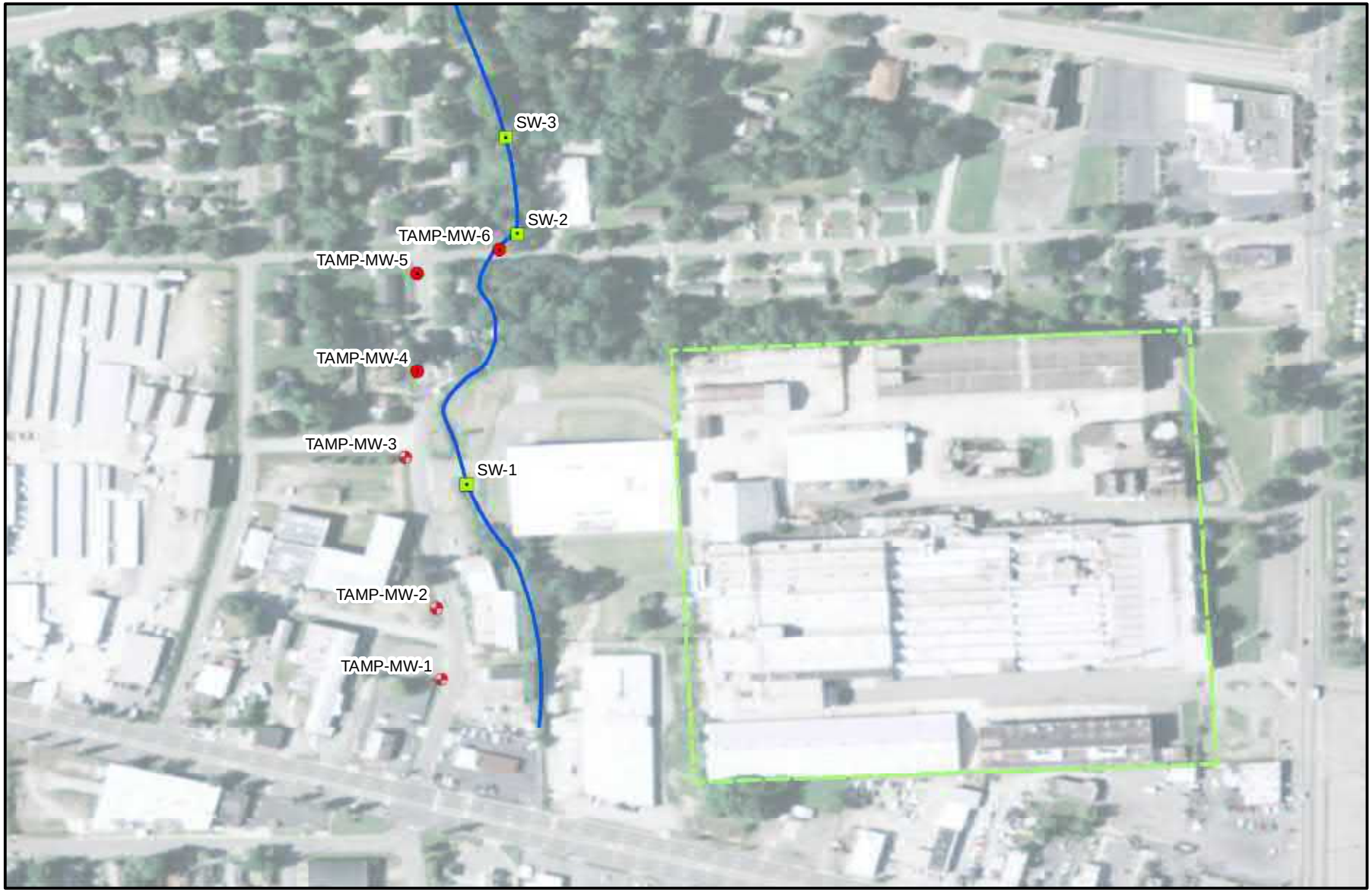
- MW-SP-3
- 2014 Sample Points
- Dry Screen Points
- TAMP Site Boundary
- Stream

Notes:
-MW-SP-3 is an existing well that was sampled in place of attempting a screen point at the location.

Tarheel Army Missle Plant
Burlington, NC
Figure 2:
August 2014 Screen Point and Surface Water Samples

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

0 110 220 440 660 880 Feet



Legend

- Dry Monitoring Wells
- 2015 Sample Points
- 2015 Surface Water
- TAMP Site Boundary
- Stream

Tarheel Army Missle Plant
Burlington, NC
Figure 3:
August 2015 Temporary Wells and Surface Water Samples

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

0 75 150 300 450 600 Feet

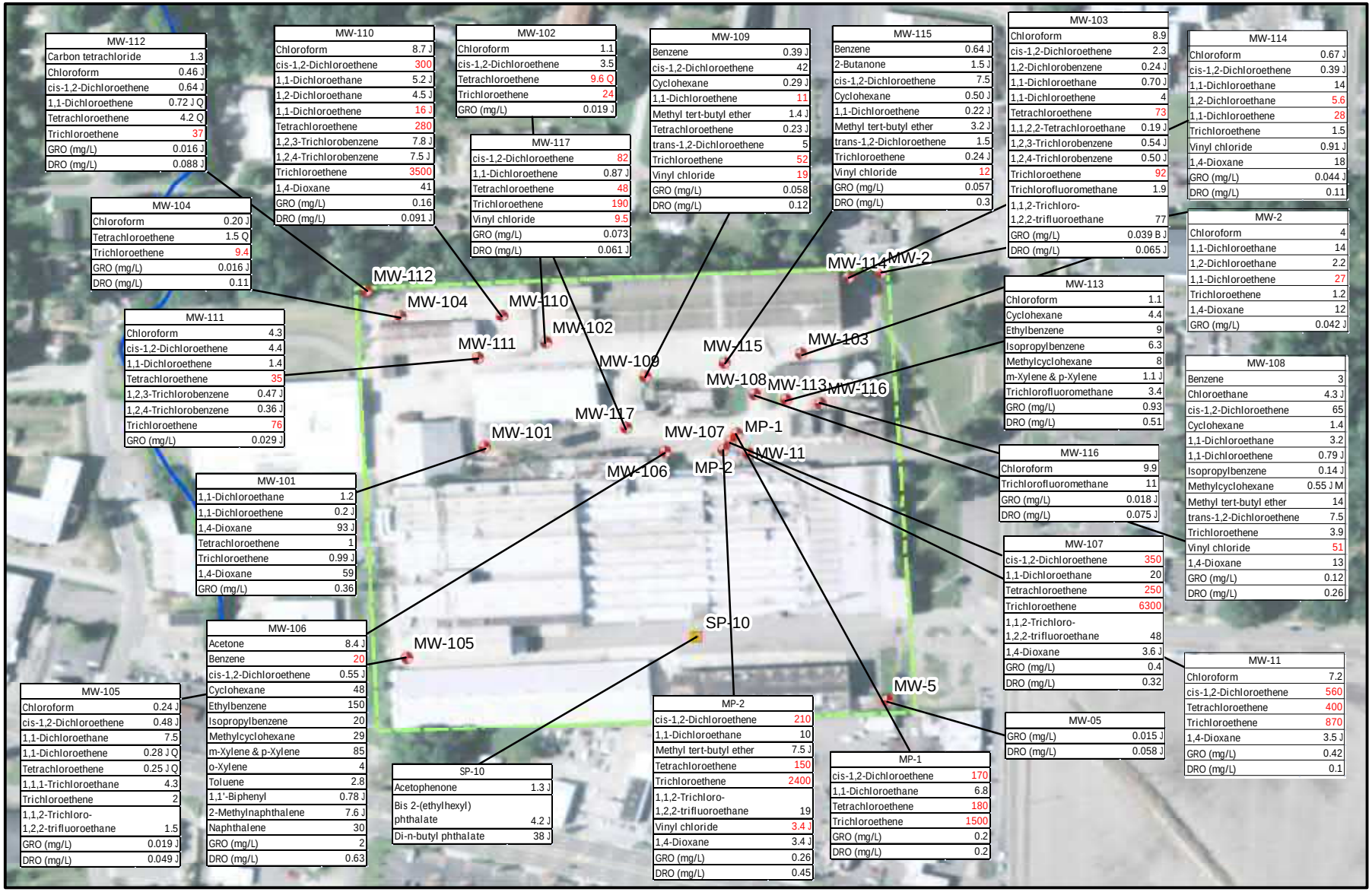
Legend

- Monitoring Well Location
- Groundwater Equipotential Lines
- TAMP Boundary
- Stream
- Direction of Groundwater flow

Tarheel Army Missle Plant
Burlington, NC
Figure 4:
Potentiometric Surface July 31, 2015

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

0 87.5 175 350 525 700 Feet



MW-112	
Carbon tetrachloride	1.3
Chloroform	0.46 J
cis-1,2-Dichloroethene	0.64 J
1,1-Dichloroethene	0.72 J Q
Tetrachloroethene	4.2 Q
Trichloroethene	37
GRO (mg/L)	0.016 J
DRO (mg/L)	0.088 J

MW-110	
Chloroform	8.7 J
cis-1,2-Dichloroethene	300
1,1-Dichloroethane	5.2 J
1,2-Dichloroethane	4.5 J
1,1-Dichloroethene	16 J
Tetrachloroethene	280
1,2,3-Trichlorobenzene	7.8 J
1,2,4-Trichlorobenzene	7.5 J
Trichloroethene	3500
1,4-Dioxane	41
GRO (mg/L)	0.16
DRO (mg/L)	0.091 J

MW-102	
Chloroform	1.1
cis-1,2-Dichloroethene	3.5
Tetrachloroethene	9.6 Q
Trichloroethene	24
GRO (mg/L)	0.019 J

MW-117	
cis-1,2-Dichloroethene	82
1,1-Dichloroethene	0.87 J
Tetrachloroethene	48
Trichloroethene	190
Vinyl chloride	9.5
GRO (mg/L)	0.073
DRO (mg/L)	0.061 J

MW-109	
Benzene	0.39 J
cis-1,2-Dichloroethene	42
Cyclohexane	0.29 J
1,1-Dichloroethene	11
Methyl tert-butyl ether	1.4 J
Tetrachloroethene	0.23 J
trans-1,2-Dichloroethene	5
Trichloroethene	52
Vinyl chloride	19
GRO (mg/L)	0.058
DRO (mg/L)	0.12

MW-115	
Benzene	0.64 J
2-Butanone	1.5 J
cis-1,2-Dichloroethene	7.5
Cyclohexane	0.50 J
1,1-Dichloroethene	0.22 J
Methyl tert-butyl ether	3.2 J
trans-1,2-Dichloroethene	1.5
Trichloroethene	0.24 J
Vinyl chloride	12
GRO (mg/L)	0.057
DRO (mg/L)	0.3

MW-103	
Chloroform	8.9
cis-1,2-Dichloroethene	2.3
1,2-Dichlorobenzene	0.24 J
1,1-Dichloroethane	0.70 J
1,1-Dichloroethene	4
Tetrachloroethene	73
1,1,2,2-Tetrachloroethane	0.19 J
1,2,3-Trichlorobenzene	0.54 J
1,2,4-Trichlorobenzene	0.50 J
Trichloroethene	92
Trichlorofluoromethane	1.9
1,1,2-Trichloro-1,2,2-trifluoroethane	77
GRO (mg/L)	0.039 B J
DRO (mg/L)	0.065 J

MW-114	
Chloroform	0.67 J
cis-1,2-Dichloroethene	0.39 J
1,1-Dichloroethane	14
1,2-Dichloroethane	5.6
1,1-Dichloroethene	28
Trichloroethene	1.5
Vinyl chloride	0.91 J
1,4-Dioxane	18
GRO (mg/L)	0.044 J
DRO (mg/L)	0.11

MW-104	
Chloroform	0.20 J
Tetrachloroethene	1.5 Q
Trichloroethene	9.4
GRO (mg/L)	0.016 J
DRO (mg/L)	0.11

MW-2	
Chloroform	4
1,1-Dichloroethane	14
1,2-Dichloroethane	2.2
1,1-Dichloroethene	27
Trichloroethene	1.2
1,4-Dioxane	12
GRO (mg/L)	0.042 J

MW-111	
Chloroform	4.3
cis-1,2-Dichloroethene	4.4
1,1-Dichloroethene	1.4
Tetrachloroethene	35
1,2,3-Trichlorobenzene	0.47 J
1,2,4-Trichlorobenzene	0.36 J
Trichloroethene	76
GRO (mg/L)	0.029 J

MW-113	
Chloroform	1.1
Cyclohexane	4.4
Ethylbenzene	9
Isopropylbenzene	6.3
Methylcyclohexane	8
m-Xylene & p-Xylene	1.1 J
Trichlorofluoromethane	3.4
GRO (mg/L)	0.93
DRO (mg/L)	0.51

MW-108	
Benzene	3
Chloroethane	4.3 J
cis-1,2-Dichloroethene	65
Cyclohexane	1.4
1,1-Dichloroethane	3.2
1,1-Dichloroethene	0.79 J
Isopropylbenzene	0.14 J
Methylcyclohexane	0.55 J M
Methyl tert-butyl ether	14
trans-1,2-Dichloroethene	7.5
Trichloroethene	3.9
Vinyl chloride	51
1,4-Dioxane	13
GRO (mg/L)	0.12
DRO (mg/L)	0.26

MW-116	
Chloroform	9.9
Trichlorofluoromethane	11
GRO (mg/L)	0.018 J
DRO (mg/L)	0.075 J

MW-101	
1,1-Dichloroethane	1.2
1,1-Dichloroethene	0.2 J
1,4-Dioxane	93 J
Tetrachloroethene	1
Trichloroethene	0.99 J
1,4-Dioxane	59
GRO (mg/L)	0.36

MW-107	
cis-1,2-Dichloroethene	350
1,1-Dichloroethane	20
Tetrachloroethene	250
Trichloroethene	6300
1,1,2-Trichloro-1,2,2-trifluoroethane	48
1,4-Dioxane	3.6 J
GRO (mg/L)	0.4
DRO (mg/L)	0.32

MW-106	
Acetone	8.4 J
Benzene	20
cis-1,2-Dichloroethene	0.55 J
Cyclohexane	48
Ethylbenzene	150
Isopropylbenzene	20
Methylcyclohexane	29
m-Xylene & p-Xylene	85
o-Xylene	4
Toluene	2.8
1,1'-Biphenyl	0.78 J
2-Methylnaphthalene	7.6 J
Naphthalene	30
GRO (mg/L)	2
DRO (mg/L)	0.63

MW-11	
Chloroform	7.2
cis-1,2-Dichloroethene	560
Tetrachloroethene	400
Trichloroethene	870
1,4-Dioxane	3.5 J
GRO (mg/L)	0.42
DRO (mg/L)	0.1

MW-105	
Chloroform	0.24 J
cis-1,2-Dichloroethene	0.48 J
1,1-Dichloroethane	7.5
1,1-Dichloroethene	0.28 J Q
Tetrachloroethene	0.25 J Q
1,1,1-Trichloroethane	4.3
Trichloroethene	2
1,1,2-Trichloro-1,2,2-trifluoroethane	1.5
GRO (mg/L)	0.019 J
DRO (mg/L)	0.049 J

SP-10	
Acetophenone	1.3 J
Bis 2-(ethylhexyl) phthalate	4.2 J
Di-n-butyl phthalate	38 J

MP-2	
cis-1,2-Dichloroethene	210
1,1-Dichloroethane	10
Methyl tert-butyl ether	7.5 J
Tetrachloroethene	150
Trichloroethene	2400
1,1,2-Trichloro-1,2,2-trifluoroethane	19
Vinyl chloride	3.4 J
1,4-Dioxane	3.4 J
GRO (mg/L)	0.26
DRO (mg/L)	0.45

MP-1	
cis-1,2-Dichloroethene	170
1,1-Dichloroethane	6.8
Tetrachloroethene	180
Trichloroethene	1500
GRO (mg/L)	0.2
DRO (mg/L)	0.2

MW-05	
GRO (mg/L)	0.015 J
DRO (mg/L)	0.058 J

Legend

- Monitoring Wells
- Screen Point
- TAMP Site Boundary
- Stream

Notes:
-Values in bold exceed the EPA RSL
-Values in red exceed the EPA MCL
-Monitoring wells were sampled in 2014
-All results listedin ug/L

Tarheel Army Missle Plant
Burlington, NC
Figure 5:
August 2014 Sampling Inside TAMP Boundary

U.S. ARMY ENGINEER DISTRICT
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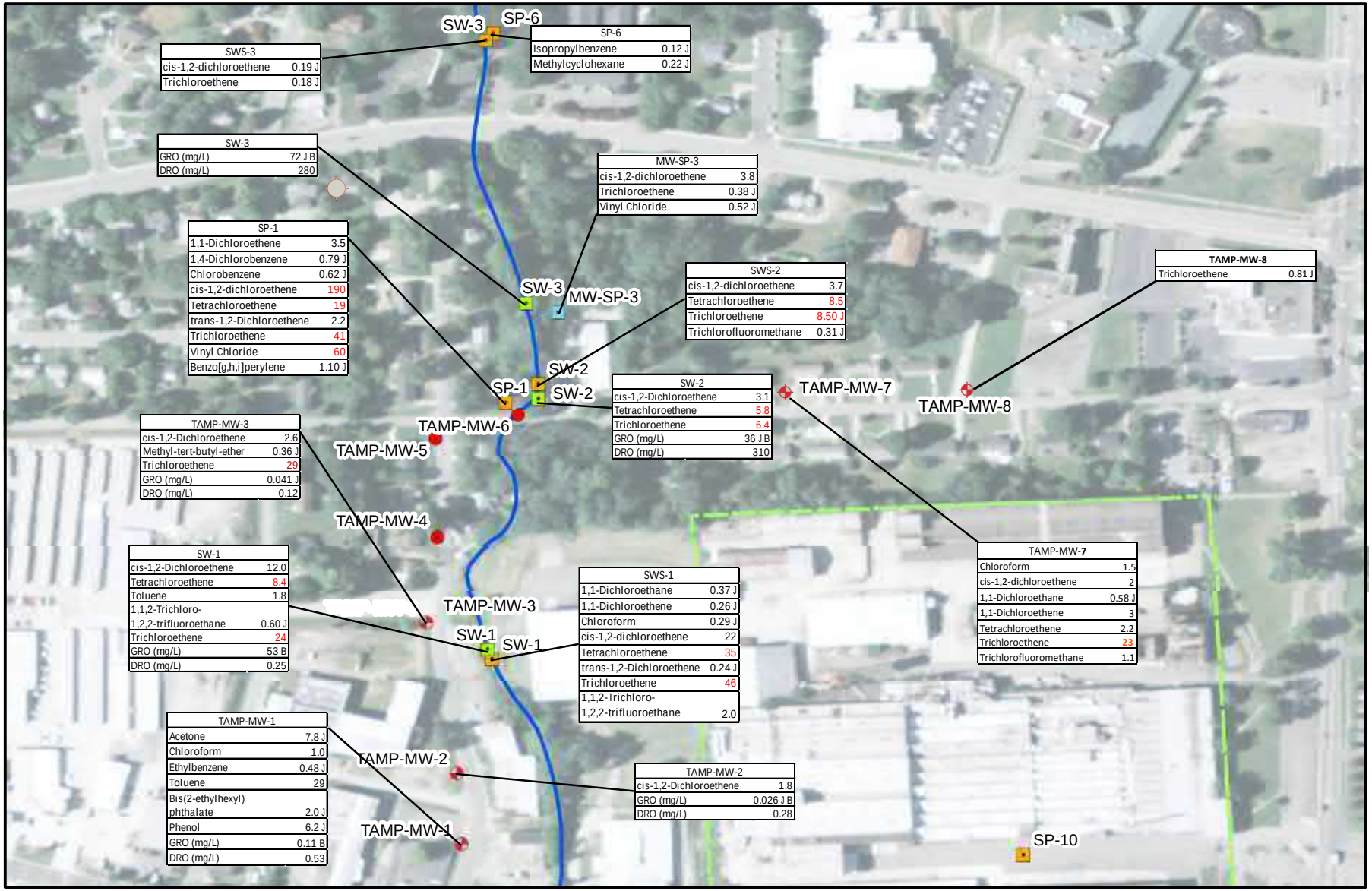
SAVANNAH, GEORGIA

0 75 150 300 450 600 Feet



Legend

- Dry Monitoring Wells
- 2015 Sample Points
- 2015 Surface Water
- MW-SP-3
- 2014 Sample Points
- TAMP Site Boundary
- Stream

Notes:
-Values in bold exceed the EPA RSL
-Values in red exceed the EPA MCL
-All results listedin ug/L
-MW-SP-3 is an existing well that was sampled in place of attempting a screen point at the location. Sampled 2014

Tarheel Army Missle Plant
Burlington, NC
Figure 6:
August 2014 and 2015 Sampling Outside TAMP Boundary

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

0 75 150 300 450 600 Feet

Table 1. Monitoring Well Details and Elevation Data, July 31, 2015

Well Number	Northing	Easting	Top of Riser Elevation	Depth to Groundwater	GW Elevation
TAMP-MW-1	854507	1878565	585.93	6.05	579.88
TAMP-MW-2	854657	1878558	582.18	3.61	578.57
TAMP-MW-3	854975	1878506	576.56	3.76	572.80
TAMP-MW-4	855156	1878526	577.53	*dry*	*NV*
TAMP-MW-5	855363	1878527	580.60	*dry*	*NV*
TAMP-MW-6	855412	1878668	574.00	9.53	564.47
mw2	855227	1879835	596.91	5.11	591.80
mw5	854348	1879842	610.42	16.09	594.33
mw11	854856	1879613	604.61	11.3	593.31
mw101	854871	1879175	604.80	14.67	590.13
mw102	855085	1879277	595.76	6.6	589.16
mw103	855061	1879702	595.69	3.28	592.41
mw104	855140	1879036	602.90	24.36	578.54
mw105	854440	1879044	608.31	23.25	585.06
mw106	854860	1879475	604.79	10.41	594.38
mw107	854881	1879584	604.15	10.71	593.44
mw108	854978	1879625	599.45	6.67	592.78
mw109	855015	1879442	597.31	5.41	591.90
mw110	855140	1879205	603.25	21.57	581.68
mw111	855054	1879165	603.82	23.1	580.72
mw112	855194	1878980	602.63	29.46	573.17
mw113	854967	1879677	603.06	10.02	593.04
mw114	855217	1879781	595.93	4.11	591.82
mw115	855042	1879575	596.51	4.44	592.07
mw116	854959	1879734	603.76	10.85	592.91
mw117	854909	1879410	604.04	10.88	593.16

Note: All values are in feet. The elevation datum is mean sea level. Depth to groundwater is measured from the top of riser. *NV* = no value.

Table 2. Detection Summary
Sampled Inside TAMP Boundary August 2014

Well ID:	MW-105	MW-05	MW-112	MW-104	MW-110	MW-111	MW-102	MW-109	MW-103	MW-115	MW-108	MW-116	GPS	
Date Collected:	8/21/14	8/21/14	8/21/14	8/21/14	8/22/14	8/22/14	8/22/14	8/22/14	8/23/14	8/23/14	8/23/14	8/23/14	RSL	MCL
VOCs - 8260B (µg/L)														
Acetone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,400	NA
Benzene	ND	ND	ND	ND	ND	ND	ND	0.39 J	ND	0.64 J	3	ND	0.45	5
2-Butanone	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.5 J	ND	ND	560	NA
Carbon tetrachloride	ND	ND	1.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.45	5
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.3 J	ND	2100	NA
Chloroform	0.24 J	ND	0.46 J	0.20 J	8.7 J	4.3	1.1	ND	8.9	ND	ND	9.9	0.22	80
cis-1,2-Dichloroethene	0.48 J	ND	0.64 J	ND	300	4.4	3.5	42	2.3	7.5	65	ND	3.6	70
Cyclohexane	ND	ND	ND	ND	ND	ND	ND	0.29 J	ND	0.50 J	1.4	ND	1300	NA
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	0.24 J	ND	ND	ND	30	600
1,1-Dichloroethane	7.5	ND	ND	ND	5.2 J	ND	ND	ND	0.70 J	ND	3.2	ND	2.7	NA
1,2-Dichloroethane	ND	ND	ND	ND	4.5 J	ND	ND	ND	ND	ND	ND	ND	0.17	5
1,1-Dichloroethene	0.28 J Q	ND	0.72 J Q	ND	16 J	1.4	ND	11	4	0.22 J	0.79 J	ND	28	7
1,4-Dioxane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.46	NA
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.5	700
Isopropylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.14 J	ND	45	NA
Methylcyclohexane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.55 J M	ND	NA	NA
Methyl tert-butyl ether	ND	ND	ND	ND	ND	ND	ND	1.4 J	ND	3.2 J	14	ND	14	NA
m-Xylene & p-Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	19	NA
o-Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	19	NA
Tetrachloroethene	0.25 J Q	ND	4.2 Q	1.5 Q	280	35	9.6 Q	0.23 J	73	ND	ND	ND	4.1	5
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	0.19 J	ND	ND	ND	0.076	NA
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	110	1,000
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	5	ND	1.5	7.5	ND	36	100
1,1,1-Trichloroethane	4.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	800	200
1,2,3-Trichlorobenzene	ND	ND	ND	ND	7.8 J	0.47 J	ND	ND	0.54 J	ND	ND	ND	0.7	NA
1,2,4-Trichlorobenzene	ND	ND	ND	ND	7.5 J	0.36 J	ND	ND	0.50 J	ND	ND	ND	0.4	70
Trichloroethene	2	ND	37	9.4	3500	76	24	52	92	0.24 J	3.9	ND	0.28	5
Trichlorofluoromethane	ND	ND	ND	ND	ND	ND	ND	ND	1.9	ND	ND	11	110	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	1.5	ND	ND	ND	ND	ND	ND	ND	77	ND	ND	ND	5500	NA
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	19	ND	12	51	ND	0.019	2
SVOCs - 8270D (µg/L)														
1,4-Dioxane	ND	ND	ND	ND	41	ND	ND	ND	ND	ND	13	ND	0.46	NA
1,1'-Biphenyl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.083	NA
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.6	NA
Acetophenone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.8	100
Bis 2-(ethylhexyl) phthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.6	6
Di-n-butyl phthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	90	NA
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.17	NA
GRO/DRO - 8015C (mg/L)														
Gasoline Range Organics	0.019 J	0.015 J	0.016 J	0.016 J	0.16	0.029 J	0.019 J	0.058	0.039 B J	0.057	0.12	0.018 J	NA	NA
Diesel Range Organics	0.049 J	0.058 J	0.088 J	0.11	0.091 J	ND	ND	0.12	0.065 J	0.3	0.26	0.075 J	NA	NA

Notes:

J = Estimate: The analyte was positively identified; the quanitation is an estimate.

Q = One or more quality control criteria failed.

GPS = Groundwater Protection Standards; EPA Region 9 regional screening levels (RSL) for tapwater and maximum contaminant level (MCL).

Table 2. Detection Summary
Sampled Inside TAMP Boundary August 2014

Well ID:	MW-113	MW-117	MW-106	MW-107	MP-2	MP-1	MW-11	MW-101	MW-114	MW-2	SP-10	GPS	
Date Collected:	8/23/14	8/24/14	8/24/14	8/24/14	8/24/14	8/24/14	8/24/14	8/25/14	8/25/14	8/25/14	8/19/14	RSL	MCL
VOCs - 8260B (µg/L)													
Acetone	ND	ND	8.4 J	ND	ND	ND	ND	ND	ND	ND	ND	**1,400**	NA
Benzene	ND	ND	**20**	ND	ND	ND	ND	ND	ND	ND	ND	**0.45**	5
2-Butanone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**560**	NA
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.45**	5
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2100**	NA
Chloroform	**1.1**	ND	ND	ND	ND	ND	**7.2**	ND	**0.67 J**	**4**	ND	**0.22**	80
cis-1,2-Dichloroethene	ND	**82**	0.55 J	**350**	**210**	**170**	**560**	ND	0.39 J	ND	ND	**3.6**	70
Cyclohexane	4.4	ND	48	ND	ND	ND	ND	ND	ND	ND	ND	**1300**	NA
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**30**	600
1,1-Dichloroethane	ND	ND	ND	**20**	**10**	**6.8**	ND	1.2	**14**	**14**	ND	**2.7**	NA
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	**5.6**	**2.2**	ND	**0.17**	5
1,1-Dichloroethene	ND	0.87 J	ND	ND	ND	ND	ND	0.2 J	**28**	**27**	ND	**28**	7
1,4-Dioxane	ND	ND	ND	ND	ND	ND	ND	**93 J**	ND	ND	ND	**0.46**	NA
Ethylbenzene	**9**	ND	**150**	ND	ND	ND	ND	ND	ND	ND	ND	**1.5**	700
Isopropylbenzene	6.3	ND	20	ND	ND	ND	ND	ND	ND	ND	ND	**45**	NA
Methylcyclohexane	8	ND	29	ND	ND	ND	ND	ND	ND	ND	ND	**NA**	NA
Methyl tert-butyl ether	ND	ND	ND	ND	7.5 J	ND	ND	ND	ND	ND	ND	**14**	NA
m-Xylene & p-Xylene	1.1 J	ND	**85**	ND	ND	ND	ND	ND	ND	ND	ND	**19**	NA
o-Xylene	ND	ND	4	ND	ND	ND	ND	ND	ND	ND	ND	**19**	NA
Tetrachloroethene	ND	**48**	ND	**250**	**150**	**180**	**400**	1	ND	ND	ND	**4.1**	5
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.076**	NA
Toluene	ND	ND	2.8	ND	ND	ND	ND	ND	ND	ND	ND	**110**	1,000
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**36**	100
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**800**	200
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.7**	NA
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.4**	70
Trichloroethene	ND	**190**	ND	**6300**	**2400**	**1500**	**870**	**0.99 J**	**1.5**	**1.2**	ND	**0.28**	5
Trichlorofluoromethane	3.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**110**	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	ND	ND	48	19	ND	ND	ND	ND	ND	ND	**5500**	NA
Vinyl chloride	ND	**9.5**	ND	ND	**3.4 J**	ND	ND	ND	**0.91 J**	ND	ND	**0.019**	2
SVOCs - 8270D (µg/L)													
1,4-Dioxane	ND	ND	ND	**3.6 J**	**3.4 J**	ND	**3.5 J**	**59**	**18**	**12**	ND	**0.46**	NA
1,1'-Biphenyl	ND	ND	**0.78 J**	ND	ND	ND	ND	ND	ND	ND	ND	**0.083**	NA
2-Methylnaphthalene	ND	ND	**7.6 J**	ND	ND	ND	ND	ND	ND	ND	ND	**3.6**	NA
Acetophenone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3 J	**7.8**	100
Bis 2-(ethylhexyl) phthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.2 J	**5.6**	6
Di-n-butyl phthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	38 J	**90**	NA
Naphthalene	ND	ND	**30**	ND	ND	ND	ND	ND	ND	ND	ND	**0.17**	NA
GRO/DRO - 8015C (mg/L)													
Gasoline Range Organics	0.93	0.073	2	0.4	0.26	0.2	0.42	0.36	0.044 J	0.042 J	ND	**NA**	NA
Diesel Range Organics	0.51	0.061 J	0.63	0.32	0.45	0.2	0.1	ND	0.11	ND	ND	**NA**	NA

Notes:

J = Estimate: The analyte was positively identified; the quanitation is an estimate.

Q = One or more quality control criteria failed.

GPS = Groundwater Protection Standards; EPA Region 9 regional screening levels (RSL) for tapwater and maximum contaminant level (MCL).

Table 3. Detection Summary
Sampled Outside TAMP Boundary August 2014

Well ID:	SP-1	SP-3	SP-6	SW-1	SW-2	SW-3	GPS	
Date Collected:	8/19/14	8/25/14	8/19/14	8/20/14	8/20/14	8/20/14	RSL	MCL
VOCs - 8260B (µg/L)								
1,1-Dichloroethane	ND	ND	ND	0.37 J	ND	ND	**2.7**	NA
1,1-Dichloroethene	3.5	ND	ND	0.26 J	ND	ND	**28**	7
1,4-Dichlorobenzene	**0.79 J**	ND	ND	ND	ND	ND	**0.48**	75
Chlorobenzene	0.62 J	ND	ND	ND	ND	ND	**7.8**	100
Chloroform	ND	ND	ND	**0.29 J**	ND	ND	**0.22**	80
cis-1,2-dichloroethene	**190**	**3.8**	ND	22	**3.7**	0.19 J	**3.6**	70
Isopropylbenzene	ND	ND	0.12 J	ND	ND	ND	**45**	NA
Methylcyclohexane	ND	ND	0.22 J	ND	ND	ND	**NA**	NA
Tetrachloroethene	**19**	ND	ND	**35**	**8.5**	ND	**4.1**	5
trans-1,2-Dichloroethene	2.2	ND	ND	0.24 J	ND	ND	**36**	100
Trichloroethene	**41**	**0.38 J**	ND	**46**	**8.50 J**	0.18 J	**0.28**	5
Trichlorofluoromethane	ND	ND	ND	ND	0.31 J	ND	**110**	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	ND	ND	2.0	ND	ND	**5500**	NA
Vinyl Chloride	**60**	**0.52 J**	ND	ND	ND	ND	**0.019**	2
SVOCs - 8270D (µg/L)								
Acetophenone	ND	ND	ND	ND	ND	ND	**190**	NA
Benzo[g,h,i]perylene	1.10 J	ND	ND	ND	ND	ND	**NA**	NA
Bis 2-(ethylhexyl) phthalate	ND	ND	ND	ND	ND	ND	**5.6**	6
Di-n-butyl phthalate	ND	ND	ND	ND	ND	ND	**90**	NA

Notes:

J = Estimate: The analyte was positively identified; the quanitation is an estimate.

Q = One or more quality control criteria failed.

GPS = Groundwater Protection Standards; EPA Region 9 regional screening levels (RSL) for tapwater and maximum contaminant level (MCL).

Table 4. Detection Summary
Sampled Outside TAMP Boundary August 2015

Well ID:	MW-1	MW-2	MW-3*	SW-1	SW-2	SW-3	GPS	
Date Collected:	8/7/15	8/7/15	8/7/15	8/7/15	8/7/15	8/7/15	RSL	MCL
VOCs - 8260B (µg/L)								
Acetone	7.8 J	ND	ND	ND	ND	ND	1,400	---
Chloroform	**1.0**	ND	ND	ND	ND	ND	0.22	80
cis-1,2-Dichloroethene	ND	1.8	2.6	**12.0**	3.1	ND	3.6	70
Ethylbenzene	0.48 J	ND	ND	ND	ND	ND	1.5	700
Methyl-tert-butyl-ether	ND	ND	0.36 J	ND	ND	ND	14	---
Tetrachloroethene	ND	ND	ND	**8.4**	**5.8**	ND	4.1	5
Toluene	29	ND	ND	1.8	ND	ND	110	1,000
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	ND	ND	0.60 J	ND	ND	5500	---
Trichloroethene	ND	ND	**29**	**24**	**6.4**	ND	0.28	5
SVOCs - 8270D (µg/L)								
Bis(2-ethylhexyl) phthalate	2.0 J	ND	ND	ND	ND	ND	5.6	6
Phenol	6.2 J	ND	ND	ND	ND	ND	580	---
GRO/DRO - 8015C (mg/L)								
Gasoline Range Organics	0.11 B	0.026 J B	0.041 J	53 B	36 J B	72 J B	---	---
Diesel Range Organics	0.53	0.28	0.12	0.25	310	280	---	---

Notes:

J = Estimate: The analyte was positively identified; the quanitation is an estimate.

Q = One or more quality control criteria failed.

GPS = Groundwater Protection Standards; EPA Region 9 regional screening levels (RSL) for tapwater and maximum contaminant level (MCL).

* = Duplicate sample collected at this location, highest detections reported.

U.S. Army Environmental Command

DRAFT REMEDIAL INVESTIGATION REPORT

Tarheel Army Missile Plant
Burlington, North Carolina
Contract No. W91ZLK-13-D-0009
Task Order 0012

Revision 0
April 2020

TABLES

Table 1
Monitoring Well Construction and Groundwater Elevations
Tarheel Army Missile Plant
Burlington, North Carolina

Well ID	HSU	Northing	Easting	Top of Casing Elevation	Total Depth (ft bgs)	Screened Interval (ft bgs)	June 5, 2017		August 1, 2017		February 6, 2019	
							Depth to Water (ft btoc)	Groundwater Elevation	Depth to Water (ft btoc)	Groundwater Elevation	Depth to Water (ft btoc)	Groundwater Elevation
MP-1	-	854891.121	1879594.459	604.05	-	-	10.25	593.80	10.62	593.43	9.80	594.25
MP-2	-	854870.076	1879572.018	604.12	-	5.5 - 15.5	10.28	593.84	10.68	593.44	9.59	594.53
MW-2	saprolite	855227	1879835	596.91	18.5	7 - 17	4.32	592.59	4.84	592.07	CNL	-
MW-5	saprolite	854348	1879842	610.42	24.0	13.5 - 23.5	15.20	595.22	15.53	594.89	13.39	597.03
MW-11	saprolite	854856	1879613	604.61	20.5	10 - 20	10.85	593.76	11.16	593.45	10.36	594.25
MW-101	bedrock	854871	1879175	604.80	24.9	14.9 - 24.9	13.25	591.55	14.30	590.50	12.62	592.18
MW-102	saprolite	855085	1879277	595.76	16.0	6 - 16	6.08	589.68	6.46	589.30	5.93	589.83
MW-103	bedrock	855061	1879702	595.69	19.0	9 - 19	2.83	592.86	3.18	592.51	2.75	592.94
MW-104	bedrock	855140	1879036	602.90	27.0	17 - 27	23.70	579.20	23.33	579.57	23.04	579.86
MW-105	bedrock	854440	1879044	608.31	27.5	17.5 - 27.5	22.07	586.24	22.38	585.93	20.41	587.90
MW-106	bedrock	854860	1879475	604.79	16.5	6.5 - 16.5	10.00	594.79	10.64	594.15	10.21	594.58
MW-107	saprolite	854881	1879584	604.15	23.0	13 - 23	10.22	593.93	10.60	593.55	9.74	594.41
MW-108	saprolite	854978	1879625	599.45	15.5	5.5 - 15.5	6.35	593.10	6.71	592.74	6.28	593.17
MW-109	bedrock	855015	1879442	597.31	14.5	4.5 - 14.5	4.90	592.41	5.23	592.08	NM	-
MW-110	bedrock	855140	1879205	603.25	35.0	25 - 35	20.75	582.50	21.12	582.13	20.11	583.14
MW-111	bedrock	855054	1879165	603.82	35.0	25 - 35	22.55	581.27	22.63	581.19	21.35	582.47
MW-112	bedrock	855194	1878980	602.63	35.5	25 - 35	28.25	574.38	28.84	573.79	26.77	575.86
MW-113	saprolite	854967	1879677	603.06	-	-	9.72	593.34	9.97	593.09	6.35	596.71
MW-114	saprolite	855217	1879781	595.93	-	-	3.85	592.08	4.18	591.75	3.24	592.69
MW-115	saprolite	855042	1879575	596.51	-	-	3.82	592.69	5.65	590.86	4.84	591.67
MW-116	saprolite	854959	1879734	603.76	-	-	10.28	593.48	10.59	593.17	6.43	597.33
MW-117	bedrock	854909	1879410	604.04	23.0	13 - 23	9.90	594.14	10.54	593.50	10.64	593.40
MW-118	saprolite	855160.434	1879591.884	597.01	-	-	4.15	592.86	4.65	592.36	4.13	592.88
MW-119	saprolite	855792.279	1879062.993	580.18	20.0	10 - 20	DNE	-	8.03	572.15	5.19	574.99
MW-120	saprolite/PWR	854841.94	1879540.773	604.73	36.5	31.5 - 36.5	DNE	-	11.18	593.55	10.22	594.51
MW-121	PWR	855135.789	1879184.677	602.49	58.0	53 - 58	DNE	-	21.13	581.36	20.22	582.27
MW-122	PWR	854986.796	1878352.872	587.12	36.0	26 - 36	DNE	-	12.70	574.42	11.53	575.59
MW-123	bedrock	855411.057	1878425.794	586.00	38.0	28 - 38	DNE	-	16.32	569.68	15.51	570.49
MW-124	bedrock	855415.739	1878632.401	575.29	45.0	35 - 45	DNE	-	10.22	565.07	8.98	566.31
MW-125	bedrock	855424.57	1878920.316	NM	53.0	-	DNE	-	Abandoned 7/20/2017			
MW-126	saprolite	855963.015	1878440.005	569.63	10.0	5 - 10	DNE	-	DNE	-	6.20	563.43
MW-127	saprolite	855499.728	1878568.982	578.73	19.0	9 - 19	NM	-	DNE	-	15.37	563.36
MW-128	saprolite	855237.634	1878522.323	578.84	11.0	6 - 11	NM	-	DNE	-	8.24	570.60
MW-129	saprolite	855430.181	1878922.438	586.77	21.0	11 - 21	NM	-	DNE	-	12.90	573.87
MW-130	saprolite	855455.999	1879389.428	587.10	24.0	5 - 20	NM	-	DNE	-	3.20	583.90
MW-131	saprolite	855402.177	1879689.455	590.10	16.0	6 - 16	NM	-	DNE	-	2.87	587.23
MW-132	saprolite	855170.384	1878993.633	603.63	26.0	16 - 26	NM	-	DNE	-	23.98	579.65
MW-133	bedrock	855506.318	1878568.207	578.60	30.0	20 - 30	NM	-	DNE	-	15.39	563.21
MW-134	saprolite/PWR	855886.845	1879082.478	585.49	-	-	NM	-	DNE	-	DNE	-
MW-135	saprolite	855867.135	1879369.915	598.09	25.0	15-25	NM	-	DNE	-	DNE	-
MW-136	bedrock/open borehole	NM	NM	NM	71.3	open borehole	NM	-	DNE	-	50.08	-
MW-SP-3	-	NM	NM	NM	-	-	NM	-	NM	-	CNL	-
PT-1	-	NM	NM	598.51	-	6 - 16	NM	-	NM	-	CNL	-
PT-2	-	NM	NM	599.06	-	7 - 17	NM	-	NM	-	CNL	-
PT-3	-	NM	NM	598.52	-	14 - 24	NM	-	NM	-	CNL	-
PT-4	-	NM	NM	600.74	-	20 - 30	NM	-	NM	-	CNL	-
PT-5	-	854950.94	1879611.666	600.66	-	17 - 27	NM	-	NM	-	CNL	-
PT-6	-	854940.703	1879640	601.59	-	20 - 30	NM	-	NM	-	CNL	-
PT-7	-	854937.402	1879592.284	602.60	-	17 - 27	NM	-	NM	-	CNL	-
PT-8	-	NM	NM	600.84	-	9 - 19	NM	-	NM	-	CNL	-
PZ-1	-	NM	NM	603.51	-	37 - 44.6	NM	-	NM	-	CNL	-
PZ-7	-	855128.021	1879169.919	602.60	-	37 - 45	21.35	581.25	21.40	581.20	20.54	582.06
TAMP-MW-1	bedrock	854507	1878565	585.93	11.3	6.3 - 11.3	CNL	-	CNL	-	CNL	-
TAMP-MW-2	saprolite	854657	1878558	582.18	7.9	2.9 - 7.9	6.55	575.63	3.94	578.24	NM	-
TAMP-MW-3	saprolite	854975	1878506	576.56	6.8	1.75 - 6.75	DRY	-	3.96	572.60	3.81	572.75
TAMP-MW-4	saprolite	855156	1878526	577.53	7.0	2 - 7	DRY	-	6.68	570.85	CNL	-

Table 1
Monitoring Well Construction and Groundwater Elevations
Tarheel Army Missile Plant
Burlington, North Carolina

Well ID	HSU	Northing	Easting	Top of Casing Elevation	Total Depth (ft bgs)	Screened Interval (ft bgs)	June 5, 2017		August 1, 2017		February 6, 2019	
							Depth to Water (ft btoc)	Groundwater Elevation	Depth to Water (ft btoc)	Groundwater Elevation	Depth to Water (ft btoc)	Groundwater Elevation
TAMP-MW-5	saprolite	855363	1878527	580.60	15.3	5.3 - 15.3	Destroyed	-	Destroyed	-	Destroyed	-
TAMP-MW-6	saprolite	855412	1878668	574.00	10.4	5.4 - 10.4	7.65	566.35	9.16	564.84	CNL	-
TAMP-MW-7	saprolite	855452.615	1879511.998	587.90	24.1	8.8 - 23.8	6.40	581.50	3.68	584.22	3.05	584.85
TAMP-MW-8	saprolite	855465.9537	855465.9537	592.97	23.1	7.8 - 22.8	19.23	573.74	16.73	576.24	16.10	576.87

Acronyms and Abbreviations:
btoc = below top of casing
HSU = Hydrostatigraphic Unit
CNL = could not locate
DRY = well contained an insufficient water column to record measurement
NM = not measured
DNE = well did not exist at the time of gauging
ft = foot/feet
= Elevation based on prior consultant's survey

Table 2
Surface Water Elevations
Tarheel Army Missile Plant
Burlington, North Carolina

Well ID	Northing	Easting	Bottom of Creek Elevation	October 23, 2017		February 6, 2019	
				Depth to Bottom (ft)	Surface Water Elevation	Depth to Bottom (ft)	Surface Water Elevation
SW-1	854897.767	1878608.312	569.44	0.44	569.88	0.83	570.27
SW-2	855480.878	1878711.523	562.22	0.34	562.56	0.87	563.09
SW-3	855630.425	1878705.325	559.92	0.51	560.43	0.50	560.42
SW-3A	856227.892	1878596.068	551.39	1.12	552.51	NM	--
SW-4	NS	NS	NS	NM	NM	0.24	--

Acronyms and Abbreviations:
NS = Not Surveyed
NM = Not Measured
ft = foot/feet

Table 3
Analytical Data for June 2017 Groundwater Samples
Tarheel Army Missile Plant
Burlington, North Carolina

Analyte	CAS Number	Sample ID:	MW-002	MW-005	MW-011	MW-101	MW-102	MW-103	MW-104	MW-105	MW-106	MW-107	MW-107 DUP	MW-108	MW-109	MW-110
		Date Collected:	6/7/2017	6/5/2017	6/6/2017	6/6/2017	6/6/2017	6/6/2017	6/7/2017	6/5/2017	6/6/2017	6/6/2017	6/6/2017	6/6/2017	6/6/2017	6/7/2017
		Title 15A NCAC Subchapter 2L Groundwater Standard (µg/L)[a]														
1,1,1-Trichloroethane	71-55-6	200	**7.1**	0.80 U	4 U	0.80 U	0.80 U	**2.4**	0.80 U	**1.5**	0.80 U	80 U	80 U	0.80 U	0.80 U	16 U
1,1,2,2-Tetrachloroethane	79-34-5	0.2	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	80 U	80 U	0.80 U	0.80 U	16 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	200,000	**3.6**	0.80 U	**4 J**	0.80 U	0.80 U	**44**	0.80 U	**0.64 J**	0.80 U	80 U	**78 J**	0.80 U	0.80 U	16 U
1,1,2-Trichloroethane	79-00-5	5	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	80 U	80 U	0.80 U	0.80 U	16 U
1,1-Dichloroethane	75-34-3	6	**15**	0.80 U	4 U	**0.44**	0.80 U	**1.3**	0.80 U	**2.6**	0.80 U	80 U	80 U	**3.1**	0.80 U	16 U
1,1-Dichloroethene	75-35-4	350	**29**	0.80 U	4 U	0.80 U	0.80 U	**5.4**	0.80 U	0.80 U	0.80 U	80 U	80 U	0.80 U	**2.6**	16 U
1,2,4-Trichlorobenzene	120-82-1	70	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	80 U	80 U	0.80 U	0.80 U	16 U
1,2-Dibromo-3-Chloropropane	96-12-8	0.04	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	80 U	80 U	0.80 U	0.80 U	16 U
1,2-Dibromoethane	106-93-4	0.02	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	80 U	80 U	0.80 U	0.80 U	16 U
1,2-Dichlorobenzene	95-50-1	20	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	80 U	80 U	0.80 U	0.80 U	16 U
1,2-Dichloroethane	107-06-2	0.4	**1.9**	0.80 U	**18**	0.80 U	**3.2**	**3.6**	**3.5**	0.80 U	0.80 U	80 U	**360**	**0.93 J**	**3.5**	16 U
1,2-Dichloropropane	78-87-5	0.6	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	80 U	80 U	0.80 U	0.80 U	16 U
1,3-Dichlorobenzene	541-73-1	200	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	80 U	80 U	0.80 U	0.80 U	16 U
1,4-Dichlorobenzene	106-46-7	6	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	80 U	80 U	0.80 U	0.80 U	16 U
2-Butanone	78-93-3	4,000	4 U	4 U	20 U	4 U	4 U	4 U	4 U	4 U	4 U	400 U	400 U	4 U	4 U	80 U
2-Hexanone	591-78-6	7.6 [b]	4 U	4 U	20 U	4 U	4 U	4 U	4 U	4 U	4 U	400 U	400 U	4 U	4 U	80 U
4-Methyl-2-Pentanone	108-10-1	1260 [b]	4 U	4 U	20 U	4 U	4 U	4 U	4 U	4 U	4 U	400 U	400 U	4 U	4 U	80 U
Acetone	67-64-1	6,000	**2.3 J**	**2.4 BJ**	20 U	**5.5 BJ**	4 U	**4.4 J**	**2.8 J**	**2.2 BJ**	**15 BJ**	400 U	400 U	**7 J**	**6 J**	80 U
Benzene	71-43-2	1	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	**0.99 J**	80 U	80 U	**3.1**	0.80 U	16 U
Bromodichloromethane	75-27-4	0.6	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	80 U	80 U	0.80 U	0.80 U	16 U
Bromoform	75-25-2	4	0.80 U	0.80 U	**3.1 J**	0.80 U	**0.7 J**	**0.65 J**	**0.63 J**	0.80 U	0.80 U	80 U	**68 J**	**0.59 J**	**0.6 J**	16 U
Bromomethane	74-83-9	1.5 [b]	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	80 U	80 U	0.80 U	0.80 U	16 U
Carbon Disulfide	75-15-0	700	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	80 U	80 U	**0.69 BJ**	**0.56 BJ**	16 U
Carbon Tetrachloride	56-23-5	0.3	0.80 U	0.80 U	4 U	0.80 U	0.80 U	**0.59 J**	0.80 U	0.80 U	0.80 U	80 U	80 U	0.80 U	0.80 U	16 U
Chloride		250,000	**19,000**	**2,700**	**11,000**	**5,900**	**2,500**	**7,700**	**10,000**	**6,200**	**3,100**	**8,100**	**8,200**	**11,000**	**2,400**	**5,800**
Chlorobenzene	108-90-7	50	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	80 U	80 U	0.80 U	0.80 U	16 U
Chloroethane	75-00-3	3,000	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	80 U	80 U	**6.1**	0.80 U	16 U
Chloroform	67-66-3	70	**4.4**	0.80 U	**2.8 J**	0.80 U	0.80 U	**1.4**	0.80 U	0.80 U	0.80 U	80 U	80 U	0.80 U	0.80 U	16 U
Chloromethane (Methyl chloride)	74-87-3	3	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	80 U	80 U	0.80 U	0.80 U	16 U
cis-1,2-Dichloroethene	156-59-2	70	0.80 U	0.80 U	**280**	0.80 U	**2.7**	**3.3**	0.80 U	0.80 U	0.80 U	**570**	**520**	**40**	**24**	**120**
cis-1,3-Dichloropropene	10061-01-5	0.4	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	80 U	80 U	0.80 U	0.80 U	16 U
Cyclohexane	110-82-7	2,600 [b]	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	80 U	80 U	**0.97 J**	0.80 U	16 U
Dibromochloromethane	124-48-1	0.4	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	80 U	80 U	0.80 U	0.80 U	16 U
Dichlorofluoromethane	75-71-8	1,000	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	80 U	80 U	0.80 U	0.80 U	16 U
Ethylbenzene	100-41-4	600	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	**1.4**	80 U	80 U	0.80 U	0.80 U	16 U
Isopropylbenzene	98-82-8	70	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	80 U	80 U	0.80 U	0.80 U	16 U
Methyl Acetate	79-20-9	7,000	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	80 U	80 U	**7.5**	**0.61 J**	16 U
Methylcyclohexane	108-87-2	230	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	80 U	80 U	0.80 U	0.80 U	16 U
Methylene chloride	75-09-2	5	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	80 U	80 U	0.80 U	0.80 U	16 U
Methyl-Tert-Butylether	1634-04-4	20	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	**1.1**	80 U	80 U	**14**	**0.8 J**	16 U
Styrene	100-42-5	70	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	80 U	80 U	0.80 U	0.80 U	16 U
Tetrachloroethene	127-18-4	0.7	0.80 U	0.80 U	**170**	**0.67 J**	**5.7**	**51**	**0.96 J**	0.80 U	0.80 U	**700**	**670**	0.80 U	**2.7**	**99**
Toluene	108-88-3	600	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	80 U	80 U	0.80 U	0.80 U	16 U
trans-1,2-Dichloroethene	156-60-5	100	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	80 U	80 U	**7.7**	**1.8**	16 U
trans-1,3-Dichloropropene	10061-02-6	0.4	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	80 U	80 U	0.80 U	0.80 U	16 U
Trichloroethene	79-01-6	3	**2.7**	0.80 U	**370**	**0.73 J**	**20**	**190**	**6.2**	**0.49 J**	**0.44 J**	**12,000**	**12,000**	**3.3**	**34**	**1,600**
Trichlorofluoromethane	75-69-4	2,000	**6.0**	0.80 U	**4.2 J**	0.80 U	0.80 U	**2.3**	0.80 U	0.80 U	0.80 U	80 U	**83 J**	0.80 U	0.80 U	16 U
Vinyl Chloride	75-01-4	0.03	0.80 U	0.80 U	4.0 U	0.80 U	0.80 U	**0.75 J**	0.80 U	0.80 U	0.80 U	80 U	80 U	**38**	**4.4**	16 U
Xylenes (total)	1330-20-7	500	0.80 U	0.80 U	4.0 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	**0.48 J**	80 U	80 U	0.80 U	0.80 U	16 U

See Notes on Page 3.

Table 3
Analytical Data for June 2017 Groundwater Samples
Tarheel Army Missile Plant
Burlington, North Carolina

Analyte	CAS Number	Sample ID:	MW-110 DUP	MW-111	MW-112	MW-113	MW-114	MW-115	MW-116	MW-117	MW-118	PZ-7	TAMP-MW-2	TAMP-MW-3	TAMP-MW-6	TAMP-MW-7	TAMP-MW-8
		Date Collected:	6/7/2017	6/7/2017	6/7/2017	6/6/2017	6/7/2017	6/6/2017	6/6/2017	6/6/2017	6/7/2017	6/7/2017	6/8/2017	6/8/2017	6/7/2017	6/8/2017	6/8/2017
		Title 15A NCAC Subchapter 2L Groundwater Standard (µg/L)[a]															
1,1,1-Trichloroethane	71-55-6	200	16 U	0.80 U	0.80 U	16 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
1,1,2,2-Tetrachloroethane	79-34-5	0.2	16 U	0.80 U	0.80 U	16 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	200,000	16 U	0.80 U	0.80 U	16 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
1,1,2-Trichloroethane	79-00-5	5	16 U	0.80 U	0.80 U	16 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
1,1-Dichloroethane	75-34-3	6	16 U	0.80 U	0.80 U	16 U	**1.9**	**0.64 J**	0.80 U	0.80 U	**0.47 J**	4 U	0.80 U	0.80 U	0.80 U	**0.59 J**	0.80 U
1,1-Dichloroethene	75-35-4	350	16 U	**0.65 J**	**0.53 J**	16 U	**1.9**	0.80 U	0.80 U	**0.96 J**	0.80 U	4 U	0.80 U	0.80 U	0.80 U	**7.6**	0.80 U
1,2,4-Trichlorobenzene	120-82-1	70	16 U	0.80 U	0.80 U	16 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
1,2-Dibromo-3-Chloropropane	96-12-8	0.04	16 U	0.80 U	0.80 U	16 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
1,2-Dibromoethane	106-93-4	0.02	16 U	0.80 U	0.80 U	16 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
1,2-Dichlorobenzene	95-50-1	20	16 U	0.80 U	0.80 U	16 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
1,2-Dichloroethane	107-06-2	0.4	16 U	**3.1**	**3.6**	**70**	**0.4 J**	**0.42 J**	**3.6**	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	**0.75 J**	0.80 U
1,2-Dichloropropane	78-87-5	0.6	16 U	0.80 U	0.80 U	16 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
1,3-Dichlorobenzene	541-73-1	200	16 U	0.80 U	0.80 U	16 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
1,4-Dichlorobenzene	106-46-7	6	16 U	0.80 U	0.80 U	16 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
2-Butanone	78-93-3	4,000	80 U	4 U	4 U	80 U	4 U	4 U	4 U	4 U	4 U	20 U	4 U	4 U	4 U	4 U	4 U
2-Hexanone	591-78-6	7.6 [b]	80 U	4 U	4 U	80 U	4 U	**4 U**	4 U	4 U	4 U	20 U	4 U	4 U	4 U	4 U	4 U
4-Methyl-2-Pentanone	108-10-1	1260 [b]	80 U	4 U	4 U	80 U	4 U	4 U	4 U	4 U	4 U	20 U	4 U	4 U	4 U	4 U	4 U
Acetone	67-64-1	6,000	80 U	4 U	4 U	**72 J**	4 U	**7 J**	4 U	**3.1 BJ**	**5.9 BJ**	20 U	**4.4 J**	**3.3 J**	**3.4 J**	4 U	**4.9 J**
Benzene	71-43-2	1	16 U	0.80 U	0.80 U	16 U	0.80 U	**0.95 J**	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
Bromodichloromethane	75-27-4	0.6	16 U	0.80 U	0.80 U	16 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
Bromoform	75-25-2	4	16 U	**0.63 J**	**0.58 J**	**13 J**	0.67 J	**0.62 J**	**0.66 J**	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
Bromomethane	74-83-9	1.5 [b]	16 U	0.80 U	0.80 U	16 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
Carbon Disulfide	75-15-0	700	16 U	0.80 U	**0.47 BJ**	16 U	0.80 U	**0.64 BJ**	**0.76 BJ**	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
Carbon Tetrachloride	56-23-5	0.3	16 U	0.80 U	**0.99 J**	16 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	**0.52 J**	0.80 U
Chloride		250,000	**5,900**	**9,700**	**3,400**	**620 J**	**2,900**	**6,400**	**13,000**	**2,900**	**9,100**	**4,800**	**10,000**	**16,000**	**46,000**	**9,800**	**21,000**
Chlorobenzene	108-90-7	50	16 U	0.80 U	0.80 U	16 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
Chloroethane	75-00-3	3,000	16 U	0.80 U	0.80 U	16 U	0.80 U	**1 J**	0.80 U	0.80 U	**0.63 J**	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
Chloroform	67-66-3	70	16 U	**2.1**	**0.58 J**	16 U	0.80 U	0.80 U	**4.5**	0.80 U	0.80 U	4 U	0.80 U	0.80 U	**1.1**	**4.9**	0.80 U
Chloromethane (Methyl chloride)	74-87-3	3	16 U	0.80 U	0.80 U	16 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
cis-1,2-Dichloroethene	156-59-2	70	**130**	**2.6**	**1.7**	16 U	0.80 U	**3.1**	0.80 U	**52**	**2.2**	**21**	**0.68 J**	**1.7**	**0.59 J**	**4.2**	0.80 U
cis-1,3-Dichloropropene	10061-01-5	0.4	16 U	0.80 U	0.80 U	16 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
Cyclohexane	110-82-7	2,600 [b]	16 U	0.80 U	0.80 U	**36**	0.80 U	**0.91 J**	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
Dibromochloromethane	124-48-1	0.4	16 U	0.80 U	0.80 U	16 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
Dichlorofluoromethane	75-71-8	1,000	16 U	0.80 U	0.80 U	16 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
Ethylbenzene	100-41-4	600	16 U	0.80 U	0.80 U	**31**	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
Isopropylbenzene	98-82-8	70	16 U	0.80 U	0.80 U	**14 J**	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
Methyl Acetate	79-20-9	7,000	16 U	0.80 U	0.80 U	16 U	0.80 U	**6.4**	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
Methylcyclohexane	108-87-2	230	16 U	0.80 U	0.80 U	**62 J**	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
Methylene chloride	75-09-2	5	16 U	0.80 U	0.80 U	16 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
Methyl-Tert-Butylether	1634-04-4	20	16 U	0.80 U	0.80 U	16 U	0.80 U	**11**	0.80 U	0.80 U	**12**	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
Styrene	100-42-5	70	16 U	0.80 U	0.80 U	16 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
Tetrachloroethene	127-18-4	0.7	**82**	**10**	**7.9**	16 U	0.80 U	0.80 U	0.80 U	**40**	0.80 U	**21**	0.80 U	0.80 U	0.80 U	**8.5**	0.80 U
Toluene	108-88-3	600	16 U	0.80 U	0.80 U	16 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
trans-1,2-Dichloroethene	156-60-5	100	16 U	0.80 U	0.80 U	16 U	0.80 U	**1.2**	0.80 U	**0.52 J**	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
trans-1,3-Dichloropropene	10061-02-6	0.4	16 U	0.80 U	0.80 U	16 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	4 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
Trichloroethene	79-01-6	3	**1,500**	**50**	**73**	16 U	**0.89 J**	**0.88 J**	0.80 U	**200**	0.80 U	**260**	0.80 U	**19**	**19**	**48**	**1.1**
Trichlorofluoromethane	75-69-4	2,000	16 U	0.80 U	**0.69 J**	16 U	0.80 U	0.80 U	**20**	0.80 U	0.80 U	4.0 U	0.80 U	0.80 U	0.80 U	**4.6**	0.80 U
Vinyl Chloride	75-01-4	0.03	16 U	0.80 U	0.80 U	16 U	**0.40 J**	**6.5**	0.80 U	**1.9**	**4.0**	4.0 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
Xylenes (total)	1330-20-7	500	16 U	0.80 U	0.80 U	**50**	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	4.0 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U

See Notes on Page 3.

Footnotes:

[a] 15A NCAC 02L .0202 Groundwater Standards (Effective April 1, 2013).

[b] There is not an NCAC 2L or U.S. Environmental Protection Agency Maximum Contaminant Limit standard for the chemical. Sceening concentration is Tapwater Regional Screening Level (Target Hazard Quotient [THQ] = 0.2).

Notes:

1. Detections are **bolded.**
2. Colored shading indicates which Groundwater Standard level was exceeded.
3. "NA" indicates no NCAC 2L or USEPA standard exists for the chemical.

Laboratory Qualifiers:

B = The analyte was detected in the method blank.

F = The analyte was positively identified but the associated numerical value is below the LOQ and greater than the Detection Limit.

J = The analyte was positively identified; the associated numeric value is the approximate concentration of the analyte in the sample.

M = A matrix effect was present.

Q = One or more quality control criteria failed.

U = Undetected. The analyte was analyzed for, but not detected. The associated numeric value is the Detection Limit.

Acronyms and Abbreviations:

µg/L= micrograms per litre (parts per billion)

NCAC = North Carolina Administrative Code

VOC = volatile organic compound

Table 4
Analytical Data for July 2017 Soil Boring Samples
Tarheel Army Missile Plant
Burlington, North Carolina

Analyte	CAS Number	Unrestricted Use Health Based PSRG[a]	Industrial/Commercial Health Based PSRG[a]	Protection of Groundwater PSRG[a]	SB-01(8)	SB-02(4)	SB-03(6)	SB-04(10)	SB-04(12)	SB-04(14)	SB-05(14.5)	DUP-01
				Date Collected:	7/13/2017	7/13/2017	7/13/2017	7/13/2017	7/13/2017	7/13/2017	7/13/2017	7/13/2017
				Depth Range (feet):	8	4	6	10	12	14	14.5	
1,1,1-Trichloroethane	71-55-6	640,000	640,000	1,200	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
1,1,2,2-Tetrachloroethane	79-34-5	600	2700	1.2	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
1,1,2-trichloro-1,2,2-Trifluoroethane	76-13-1	910,000	910,000	9,000	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
1,1,2-Trichloroethane	79-00-5	300	1,260	3.2	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
1,1-Dichloroethane	75-34-3	3,600	160,000	30	310 U	**4.5 J**	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
1,1-Dichloroethene	75-35-4	46,000	200,000	2,300	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
1,2,4-Trichlorobenzene	120-82-1	11,600	52,000	2,200	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
1,2-Dibromo-3-Chloropropane	96-12-8	5.3	64	0.25	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
1,2-Dibromoethane	106-93-4	36	160	0.097	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
1,2-Dichlorobenzene	95-50-1	360,000	376,000	240	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
1,2-Dichloroethane	107-06-2	460	2,000	2	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
1,2-Dichloropropane	78-87-5	1,000	4,400	3.2	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
1,3-Dichlorobenzene	541-73-1	NA	NA	23,000	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
1,4-Dichlorobenzene	106-46-7	2,600	11,000	70	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
2-Butanone	78-93-3	5,400,000	28,400,000	16,000	640 U	8.4 U	7.2 U	56000 UQ	56000 UQ	480 U	1100 U	560 U
2-Hexanone	591-78-6	40,000	260,000	170	620 U	8.8 U	7.4 U	56000 UQ	55000 UQ	500 U	1100 U	570 U
4-Methyl-2-Pentanone	108-10-1	3,360,000	3,360,000	430	620 U	8.8 U	7.4 U	56000 UQ	55000 UQ	500 U	1100 U	570 U
Acetone	67-64-1	12,200,000	100,000,000	24,000	640 U	8.4 U	7.2 U	56000 UQ	56000 UQ	480 U	1100 U	560 U
Benzene	71-43-2	1,200	5,100	7.3	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
Bromodichloromethane	75-27-4	290	1,300	2.9	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
Bromoform	75-25-2	1,900	86,000	19	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
Bromomethane	74-83-9	1,360	6,000	NA	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
Carbon Disulfide	75-15-0	154,000	700,000	3,800	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
Carbon Tetrachloride	56-23-5	650	2,900	2.1	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
Chlorobenzene	108-90-7	56,000	260,000	440	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
Chloroethane	75-00-3	2,120,000	2,120,000	16,000	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
Chloroform	67-66-3	320	1,400	340	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
Chloromethane	74-87-3	22,000	92,000	15	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
cis-1,2-Dichloroethene	156-59-2	32,000	460,000	360	310 U	**110**	**55**	28000 UQ	28000 UQ	250 U	**700**	**490**
cis-1,3-Dichloropropene	10061-01-5	1800	8200	2.3	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
Cyclohexane	110-82-7	117,000	117,000	NA	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
Dibromochloromethane	124-48-1	8,300	39,000	1.9	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
Dichlorodifluoromethane	75-71-8	17,400	74,000	29,000	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
Ethylbenzene	100-41-4	5,800	25,000	8,100	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
Isopropylbenzene	98-82-8	268,000	268,000	1300	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
Methyl Acetate	79-20-9	15,600,000	29,000,000	NA	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
Methylcyclohexane	108-87-2	NA	NA	NA	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
Methylene chloride	75-09-2	57,000	640,000	23	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
Methyl-Tert-Butyl Ether	1634-04-4	47,000	210,000	85	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
Styrene	100-42-5	867,000	867,000	920	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
Tetrachloroethene	127-18-4	16,200	78,000	5	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
Toluene	108-88-3	818,000	818,000	5,500	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
trans-1,2-Dichloroethene	156-60-5	320,000	1,850,000	550	310 U	**22**	**2.2 J**	28000 UQ	28000 UQ	250 U	560 U	290 U
trans-1,3-Dichloropropene	10061-02-6	1800	8200	2.3	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
Trichloroethene	79-01-6	820	3,800	18	**2,700**	**14**	**2.8 J**	**1,000,000 Q**	**1,700,000 Q**	**2,400**	**20,000**	**13,000**
Trichlorofluoromethane	75-69-4	1,230,000	1,230,000	24,000	310 U	4.2 U	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
Vinyl Chloride	75-01-4	59	1,700	0.19	310 U	**2.1 J**	3.7 U	28000 UQ	28000 UQ	250 U	560 U	290 U
Xylenes (total)	1330-20-7	116,000	260,000	6,100	620 U	8.8 U	7.4 U	56000 UQ	56000 UQ	500 U	1100 U	570 U

Footnote:
[a] North Carolina Inactive Hazardous Sites Branch PSRG Tables. October 2016.

Notes:
1. Detections are **bolded.**
2. Colored shading indicates which PSRG was exceeded.
3. "NA" indicates no regulatory value has been established.

Acronyms and Abbreviations:
µg/kg = micrograms per kilogram (parts per billion)
PSRG = Preliminary Soil Remediation Goal
VOC = volatile organic compound

Laboratory Qualifiers:
J = The analyte was positively identified; the associated numeric value is the approximate concentration of the analyte in the sample.
U = Undetected. The analyte was analyzed for, but not detected. The associated numeric value is the Limit of Detection.
Q = One or more quality control criteria failed.

Table 5
Analytical Data for August 2017 Groundwater Samples
Tarheel Army Missile Plant
Burlington, North Carolina

Analyte	CAS Number	Sample ID:	MW-119	MW-120	MW-120 DUP	MW-121	MW-122	MW-123	MW-124
		Date Collected:	8/1/2017	8/1/2017	8/1/2017	8/1/2017	8/1/2017	8/1/2017	8/1/2017
		Title 15A NCAC Subchapter 2L Groundwater Standard (µg/L)[a]							
1,1,1-Trichloroethane	71-55-6	200	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U
1,1,2,2-Tetrachloroethane	79-34-5	0.2	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	200,000	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	**3.9**
1,1,2-Trichloroethane	79-00-5	5	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U
1,1-Dichloroethane	75-34-3	6	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	**1.1**
1,1-Dichloroethene	75-35-4	350	0.80 U	80 U	80 U	**0.69 J**	0.80 U	0.80 U	**3.0**
1,2,4-Trichlorobenzene	120-82-1	70	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U
1,2-Dibromo-3-Chloropropane	96-12-8	0.04	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U
1,2-Dibromoethane	106-93-4	0.02	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U
1,2-Dichlorobenzene	95-50-1	20	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U
1,2-Dichloroethane	107-06-2	0.4	0.80 U	**45 J**	**47 J**	0.80 U	0.80 U	0.80 U	**0.77 J**
1,2-Dichloropropane	78-87-5	0.6	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U
1,3-Dichlorobenzene	541-73-1	200	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U
1,4-Dichlorobenzene	106-46-7	6	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U
2-Butanone	78-93-3	4,000	4 U	400 U	400 U	4 U	4 U	4 U	4 U
2-Hexanone	591-78-6	7.6 [b]	4 U	400 U	400 U	4 U	4 U	4 U	4 U
4-Methyl-2-Pentanone	108-10-1	1260 [b]	4 U	400 U	400 U	4 U	4 U	4 U	4 U
Acetone	67-64-1	6,000	**2.1 J**	400 U	400 U	**3 J**	**3.2 J**	4 U	**3.4 J**
Benzene	71-43-2	1	0.80 U	**420**	**450**	0.80 U	0.80 U	0.80 U	**0.59 J**
Bromodichloromethane	75-27-4	0.6	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U
Bromoform	75-25-2	4	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U
Bromomethane	74-83-9	1.5 [b]	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U
Carbon Disulfide	75-15-0	700	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U
Carbon Tetrachloride	56-23-5	0.3	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U
Chloride		250,000	**57,000**	**28,000**	**28,000**	**4,700**	**19,000**	**11,000**	**10,000**
Chlorobenzene	108-90-7	50	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U
Chloroethane	75-00-3	3,000	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U
Chloroform	67-66-3	70	0.80 U	80 U	80 U	**1.9**	0.80 U	0.80 U	0.80 U
Chloromethane (Methyl chloride)	74-87-3	3	0.80 U	80 U	80 U	0.80 U	**1.2**	0.80 U	**1.9**
cis-1,2-Dichloroethene	156-59-2	70	0.80 U	**3,500**	**3700**	**8.6**	**4.6**	0.80 U	**2.6**
cis-1,3-Dichloropropene	10061-01-5	0.4	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U
Cyclohexane	110-82-7	2,600 [b]	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	**0.82 J**
Dibromochloromethane	124-48-1	0.4	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U
Dichlorofluoromethane	75-71-8	1,000	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	**0.42 J**
Ethylbenzene	100-41-4	600	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U
Isopropylbenzene	98-82-8	70	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U
Methyl Acetate	79-20-9	7,000	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U

Table 5
Analytical Data for August 2017 Groundwater Samples
Tarheel Army Missile Plant
Burlington, North Carolina

Analyte	CAS Number	Sample ID:	MW-119	MW-120	MW-120 DUP	MW-121	MW-122	MW-123	MW-124
		Date Collected:	8/1/2017	8/1/2017	8/1/2017	8/1/2017	8/1/2017	8/1/2017	8/1/2017
		Title 15A NCAC Subchapter 2L Groundwater Standard (µg/L)[a]							
Methylcyclohexane	108-87-2	230	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U
Methylene chloride	75-09-2	5	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U
Methyl-Tert-Butylether	1634-04-4	20	0.80 U	**300**	**310**	0.80 U	**0.93 J**	0.80 U	0.80 U
Styrene	100-42-5	70	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U
Tetrachloroethene	127-18-4	0.7	0.80 U	**5,500**	**6,500**	**33**	**0.43 J**	**0.68 J**	**1.2**
Toluene	108-88-3	600	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U
trans-1,2-Dichloroethene	156-60-5	100	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U
trans-1,3-Dichloropropene	10061-02-6	0.4	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U
Trichloroethene	79-01-6	3	0.80 U	**6,700**	**7,400**	**100**	**69**	**0.69 J**	**150**
Trichlorofluoromethane	75-69-4	2,000	0.80 U	**110**	**140**	**0.84 J**	0.80 U	**0.58 J**	0.80 U
Vinyl Chloride	75-01-4	0.03	0.80 U	80 U	**45 J**	0.80 U	0.80 U	0.80 U	0.80 U
Xylenes (total)	1330-20-7	500	0.80 U	80 U	80 U	0.80 U	0.80 U	0.80 U	0.80 U

See Notes on Page 3.

Footnotes:

[a] 15A NCAC 02L .0202 Groundwater Standards (Effective April 1, 2013).

[b] There is not an NCAC 2L or U.S. Environmental Protection Agency Maximum Contaminant Limit standard for the chemical. Sceening concentration is Tapwater Regional Screening Level (Target Hazard Quotient [THQ] = 0.2).

Notes:

1. Detections are **bolded.**
2. Colored shading indicates which Groundwater Standard level was exceeded.
3. "NA" indicates no NCAC 2L or USEPA standard exists for the chemical.

Laboratory Qualifiers:

B = The analyte was detected in the method blank.

F = The analyte was positively identified but the associated numerical value is below the LOQ and greater than the Detection Limit.

J = The analyte was positively identified; the associated numeric value is the approximate concentration of the analyte in the sample.

M = A matrix effect was present.

Q = One or more quality control criteria failed.

U = Undetected. The analyte was analyzed for, but not detected. The associated numeric value is the Detection Limit.

Acronyms and Abbreviations:

µg/L= micrograms per litre (parts per billion)

NCAC = North Carolina Administrative Code

VOC = volatile organic compound

Table 6
Analytical Data for June 2017 Surface Water Samples
Tarheel Army Missile Plant
Burlington, North Carolina

Analyte	CAS Number	Sample ID:			SW-1	SW-2	SW-3
		Date Collected:			6/8/2017	6/8/2017	6/8/2017
		Title 15A NCAC Subchapter 02B Class WS-V	USEPA NRWQC Class WS-V	NCDEQ Protective Values Class WS-V			
1,1,1-Trichloroethane	71-55-6	NA	10,000	NA	0.8 U	0.8 U	0.8 U
1,1,2,2-Tetrachloroethane	79-34-5	0.17	NA	NA	0.8 U	0.8 U	0.8 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	NA	NA	710,000	0.8 U	0.8 U	0.8 U
1,1,2-Trichloroethane	79-00-5	NA	0.55	NA	0.8 U	0.8 U	0.8 U
1,1-Dichloroethane	75-34-3	NA	NA	6	0.8 U	0.8 U	0.8 U
1,1-Dichloroethene	75-35-4	NA	300	NA	0.8 U	0.8 U	0.8 U
1,2,4-Trichlorobenzene	120-82-1	NA	NA	61 [b]	0.8 U	0.8 U	0.8 U
1,2-Dibromo-3-Chloropropane	96-12-8	NA	NA	0.033	0.8 U	0.8 U	0.8 U
1,2-Dibromoethane	106-93-4	NA	9.9	NA	0.8 U	0.8 U	0.8 U
1,2-Dichlorobenzene	95-50-1	NA	488 [c]	470 [b]	0.8 U	0.8 U	0.8 U
1,2-Dichloroethane	107-06-2	NA	9.9	NA	0.8 U	0.8 U	0.8 U
1,2-Dichloropropane	78-87-5	NA	0.9	NA	0.8 U	0.8 U	0.8 U
1,3-Dichlorobenzene	541-73-1	NA	488 [c]	390 [b]	0.8 U	0.8 U	0.8 U
1,4-Dichlorobenzene	106-46-7	NA	488 [c]	100 [b]	0.8 U	0.8 U	0.8 U
2-Butanone	78-93-3	NA	NA	20,000	4 U	4 U	4 U
2-Hexanone	591-78-6	NA	NA	NA	4 U	4 U	4 U
4-Methyl-2-Pentanone	108-10-1	NA	NA	2,800	4 U	4 U	4 U
Acetone	67-64-1	NA	NA	3,100	**3.1 BJ**	**3.3 BJ**	**3.6 BJ**
Benzene	71-43-2	1.19	NA	NA	0.8 U	0.8 U	0.8 U
Bromodichloromethane	75-27-4	NA	0.95	NA	0.8 U	0.8 U	0.8 U
Bromoform	75-25-2	NA	7	NA	0.8 U	0.8 U	0.8 U
Bromomethane (Methyl bromide)	74-83-9	NA	100	NA	0.8 U	0.8 U	0.8 U
Carbon Disulfide	75-15-0	NA	NA	3,000	0.8 U	0.8 U	0.8 U
Carbon Tetrachloride	56-23-5	0.254	NA	NA	0.8 U	0.8 U	0.8 U
Chloride	16887-00-6	250,000	NA	NA	**15,000**	**15,000**	**15,000**
Chlorobenzene	108-90-7	488 [a]	NA	NA	0.8 U	0.8 U	0.8 U
Chloroethane	75-00-3	NA	NA	NA	0.8 U	0.8 U	0.8 U
Chloroform	67-66-3	NA	60	NA	0.8 U	0.8 U	0.8 U
Chloromethane	74-87-3	NA	NA	2.6	0.8 U	0.8 U	0.8 U
cis-1,2-Dichloroethene	156-59-2	NA	NA	60	**2.0**	**4.8**	**2.1**
cis-1,3-Dichloropropene	10061-01-5	NA	0.27	NA	0.8 U	0.8 U	0.8 U
Cyclohexane	110-82-7	NA	NA	230 [b]	0.8 U	0.8 U	0.8 U
Dibromochloromethane	124-48-1	NA	0.8	NA	0.8 U	0.8 U	0.8 U
Dichlorofluoromethane	75-71-8	NA	NA	NA	0.8 U	0.8 U	0.8 U
Ethylbenzene	100-41-4	NA	68	NA	0.8 U	0.8 U	0.8 U
Isopropylbenzene	98-82-8	NA	NA	2,700	0.8 U	0.8 U	0.8 U
Methyl Acetate	79-20-9	NA	NA	19,000 [b]	0.8 U	0.8 U	0.8 U
Methylcyclohexane	108-87-2	NA	NA	NA	0.8 U	0.8 U	0.8 U
Methylene chloride	75-09-2	NA	20	NA	0.8 U	0.8 U	0.8 U
Methyl-Tert-Butylether	1634-04-4	NA	NA	19	0.8 U	0.8 U	0.8 U
Styrene	100-42-5	NA	NA	NA	0.8 U	0.8 U	0.8 U
Tetrachloroethene	127-18-4	0.7	NA	NA	**0.94 J**	**9.3**	**4.1**
Toluene	108-88-3	11 [b]	57	NA	0.8 U	0.8 U	0.8 U
trans-1,2-Dichloroethene	156-60-5	NA	100	NA	0.8 U	0.8 U	0.8 U
trans-1,3-Dichloropropene	10061-02-6	NA	0.27	NA	0.8 U	0.8 U	0.8 U
Trichloroethene	79-01-6	2.5	NA	NA	**1.9**	**8.8**	**4.4**
Trichlorofluoromethane	75-69-4	NA	NA	9,100	0.8 U	0.8 U	0.8 U
Vinyl Chloride	75-01-4	0.025	NA	NA	0.8 U	0.8 U	0.8 U
Xylenes (total)	1330-20-7		NA	6,200	0.8 U	0.8 U	0.8 U

Footnotes:
[a] Concentration is the total of all Chlorinated Benzenes.
[b] There is no Class WS standard. Concentration is the standard for Class C.
[c] Based on NCAC 02B standard for total of all chlorinated benzenes.

Notes:
1. Detections are **bolded.**
2. Colored shading indicates which Class was exceeded.
3. "NA" indicates no regulatory value has been established.

Acronyms and Abbreviations:
µg/L= micrograms per litre (parts per billion)
NCAC = North Carolina Administrative Code
NCDEQ = North Carolina Department of Environmental Quality
NRWQC = National Recommended Water Quality Criteria
USEPA = U.S. Environmental Protection Agency

Laboratory Qualifiers:
B = The analyte was detected in the method blank.
J = The analyte was positively identified; the associated numeric value is the approximate concentration of the analyte in the sample.
U = Undetected. The analyte was analyzed for, but not detected. The associated numeric value is the Detection Limit.

Table 7
Analytical Data for August 2017 Soil Vapor Samples
Tarheel Army Missile Plant
Burlington, North Carolina

Analyte	Sample/Location ID:	Units	NCDEQ DWM VI Screening Level Concentrations[a]		SV-1	SV-2	SV-3
	Date Collected:		Residential	Non-residential	08/02/17	08/02/17	08/02/17
1,1,1-Trichloroethane		µg/m^3	34,800	438,000	<1.1	<10,000 [<10,000]	**4.3**
1,1-Dichloroethene		µg/m^3	1,390	17,500	<1.1	**20,000 [29,000]**	<1.8
1,2,4-Trimethylbenzene		µg/m^3	48.7	613	<1.1	<10,000 [<10,000]	**1.6 J**
1,3-Butadiene		µg/m^3	13.9	175	<1.1	<10,000 [<10,000]	**4.7**
2-Butanone (MEK)		µg/m^3	34,800	438,000	**0.74 J**	<10,000 [<10,000]	**4.1 J**
2-Propanol		µg/m^3	1,390	17,500	**5.0 J**	<20,000 [<20,000]	<3.7
Acetone		µg/m^3	216,000	2,720,000	**11 J**	<51,000 [<50,000]	**41**
Acrolein		µg/m^3	0.139	1.75	**11**	<10,000 [<10,000]	**2.2 J**
alpha-Pinene		µg/m^3	NA	NA	<1.1	<10,000 [<10,000]	**5.6**
Benzene		µg/m^3	120	1,570	<1.1	**10,000 J [6,500 J]**	**0.70 J**
Carbon Disulfide		µg/m^3	4,870	61,300	<1.1	<10,000 [<10,000]	**24**
Chloroform		µg/m^3	40.7	533	<1.1	<10,000 **[5,000 J]**	**3.7**
Chloromethane		µg/m^3	626	7,880	**2.4**	<9,800 [<9,500]	**0.96 J**
cis-1,2-Dichloroethene		µg/m^3	NA	NA	<1.2	**13,000 [20,000]**	<1.9
Cyclohexane		µg/m^3	4,870	526,000	<2.3	**24,000 J [7,500 J]**	**5.1**
Dichlorodifluoromethane (CFC 12)		µg/m^3	695	8,760	**0.79 J**	<10,000 [<10,000]	**3.0**
d-Limonene		µg/m^3	NA	NA	<1.1	<9,800 [<9,500]	**2.5**
Ethanol[b]		µg/m^3	139,000	1,750,000	**31**	<51,000 [<50,000]	**32**
Ethyl Acetate		µg/m^3	487	6,130	**2.0 J**	**21,000** [<20,000]	<3.7
Ethylbenzene		µg/m^3	374	4,910	<1.1	<10,000 [<10,000]	**1.2 J**
m,p-Xylenes		µg/m^3	695	8,760	<2.3	<21,000 [<20,000]	**3.2 J**
Naphthalene		µg/m^3	20.9	263	<1.2	<10,000 [<10,000]	**1.7 J**
n-Heptane[d]		µg/m^3	4,870	61,300	<1.1	**14,000 [4,500 J]**	**4.6**
n-Hexane		µg/m^3	4,870	61,300	**0.73 J**	**38,000 [13,000]**	**31**
n-Nonane		µg/m^3	139	1,750	<1.1	<10,000 [<10,000]	**0.81 J**
n-Octane[d]		µg/m^3	4,870	61,300	<1.1	**5,500** [<10,000]	**1.4 J**
o-Xylene		µg/m^3	695	8,760	<1.1	<10,000 [<10,000]	**1.2 J**
Propene		µg/m^3	20,900	263,000	<1.1	<10,000 [<9,700]	**130**
Tetrachloroethene		µg/m^3	278	3,500	**1.9**	**830,000 [1,500,000]**	**1,300 D**
Toluene		µg/m^3	34,800	438,000	**2.1**	<10,000 [<10,000]	**3.3**
Trichloroethene		µg/m^3	13.9	175	**12**	**2,500,000 [4,000,000 D]**	**170**
Trichlorofluoromethane[c]		µg/m^3	209,000	2,630,000	**0.58 J**	<10,000 [<10,000]	**37**
Trichlorotrifluoroethane[c]		µg/m^3	209,000	2,630,000	<1.1	<10,000 [<10,000]	**120**
Vinyl Chloride		µg/m^3	55.9	2,790	<1.1	<10,000 [<9,700]	**0.82 J**

Footnotes:
[a] NCDEQ DWM VI Screening Levels for Sub-slab and Exterior Soil Gas (NCDEQ 2016a,b).
[b] Methanol used as a surrogate.
[c] 1,1,2-Trichloro-1,2,2-trifluoroethane used as a surrogate.
[d] n-Hexane used as a surrogate.

Notes:
1. Detections are **bolded.**
2. Colored shading indicates which screening level was exceeded.
3. Duplicate sample values are shown in brackets.
4. NA = Not available; inhalation toxicity value is unavailable.

Sources:
NCDEQ. 2016a. DWM Residential Vapor Intrusion Screening Concentrations (October 2016)
NCDEQ. 2016b.DWM Non-Residential Vapor Intrusion Screening Concentrations (October 2016)

Acronyms and Abbreviations:
DWM = Division of Waste Management
µg/m^3 = microgram per cubic meter
NCDEQ = North Carolina Department of Environmental Quality
VI = vapor intrusion

Laboratory Qualifiers:
D = Diluted sample.
J = The analyte was positively identified; the associated numeric value is the approximate concentration of the analyte in the sample.

Table 8
Analytical Data for February 2019 Groundwater Samples
Tarheel Army Missile Plant
Burlington, North Carolina

Analyte	CAS Number	Sample ID:	MW-119	MW-120 - [DUP-01]	MW-121	MW-122	MW-123	MW-124	MW-126	MW-127	MW-128	MW-129	MW-130	MW-131
		Date Collected:	2/8/2019	2/8/2019	2/7/2019	2/8/2019	2/7/2019	2/8/2019	2/7/2019	2/7/2019	2/8/2019	2/8/2019	2/8/2019	2/7/2019
		Title 15A NCAC Subchapter 2L Groundwater Standard (µg/L)[a]												
1,1,1-Trichloroethane	71-55-6	200	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
1,1,2,2-Tetrachloroethane	79-34-5	0.2	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	200,000	< 0.42	< 8.4 [< 8.4]	< 0.42	< 0.42	< 0.42	**1.6**	< 0.42	< 0.42	< 0.42	< 0.42	< 0.42	**0.97 J**
1,1,2-Trichloroethane	79-00-5	5	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
1,1-Dichloroethane	75-34-3	6	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	**0.98 J**	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	**7.3**
1,1-Dichloroethene	75-35-4	350	< 0.4	< 8 [< 8]	**0.57 J**	< 0.4	< 0.4	**2.1**	< 0.4	< 0.4	< 0.4	< 0.4	**2**	**10**
1,2,4-Trichlorobenzene	120-82-1	70	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
1,2-Dibromo-3-Chloropropane	96-12-8	0.04	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
1,2-Dibromoethane	106-93-4	0.02	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
1,2-Dichlorobenzene	95-50-1	20	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
1,2-Dichloroethane	107-06-2	0.4	< 0.4	< 8 **[13 J]**	< 0.4	< 0.4	< 0.4	**0.64 J**	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	**1.7**
1,2-Dichloropropane	78-87-5	0.6	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
1,3-Dichlorobenzene	541-73-1	200	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
1,4-Dichlorobenzene	106-46-7	6	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
1,4-Dioxane	123-91-1	3	< 1	**25 [27]**	< 1	< 1	< 1	**2.9 J**	< 1	< 1	< 1	< 1	< 1	**10**
2-Butanone	78-93-3	4,000	< 2	< 40 [< 40]	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
2-Hexanone	591-78-6	7.6 [b]	< 2	< 40 [< 40]	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
4-Methyl-2-Pentanone	108-10-1	1260 [b]	< 2	< 40 [< 40]	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Acetone	67-64-1	6,000	< 2	**91 J [100 J]**	< 2	< 2	< 2	< 2	< 2	**13 J**	**12 J**	< 2	< 2	**2.7 J**
Acrolein	107-02-8	N/A	< 4	< 80 [< 80]	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
Benzene	71-43-2	1	< 0.4	**160 [170]**	< 0.4	< 0.4	< 0.4	**0.57 J**	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Bromodichloromethane	75-27-4	0.6	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Bromoform	75-25-2	4	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Bromomethane	74-83-9	1.5 [b]	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Carbon Disulfide	75-15-0	700	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Carbon Tetrachloride	56-23-5	0.3	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Chloride		250,000	--	-- [--]	--	--	--	--	--	--	--	--	--	--
Chlorobenzene	108-90-7	50	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Chloroethane	75-00-3	3,000	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Chloroform	67-66-3	70	< 0.4	< 8 [< 8]	**1.1**	< 0.4	< 0.4	< 0.4	< 0.4	**2.1**	< 0.4	< 0.4	**0.89 J**	**0.41 J**
Chloromethane (Methyl chloride)	74-87-3	3	< 0.5	< 10 [< 10]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.58 J**	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,2-Dichloroethene	156-59-2	70	< 0.4	**1400 [1500]**	**5.9**	**4.8**	< 0.4	**2**	< 0.4	**0.67 J**	< 0.4	< 0.4	**2.6**	**3.9**
cis-1,3-Dichloropropene	10061-01-5	0.4	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Cyclohexane	110-82-7	2,600 [b]	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Dibromochloromethane	124-48-1	0.4	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Dichlorofluoromethane	75-71-8	1,000	< 0.6	< 12 [< 12]	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Ethylbenzene	100-41-4	600	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Isopropylbenzene	98-82-8	70	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	**1.2**	< 0.4	< 0.4	< 0.4	< 0.4
Methyl Acetate	79-20-9	7,000	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Methylcyclohexane	108-87-2	230	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Methylene chloride	75-09-2	5	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Methyl-Tert-Butylether	1634-04-4	20	< 0.4	**180 [180]**	< 0.4	**0.48 J**	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	**0.46 J**
Styrene	100-42-5	70	< 0.41	< 8.2 [< 8.2]	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41
Tetrachloroethene	127-18-4	0.7	< 0.4	**1300 [1300]**	**26**	< 0.4	< 0.4	**1**	< 0.4	< 0.4	**0.93 J**	< 0.4	**6**	**2.2**
Toluene	108-88-3	600	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	**0.84 J**	< 0.4	< 0.4	< 0.4	< 0.4
trans-1,2-Dichloroethene	156-60-5	100	< 0.4	**8.8 J [8.1 J]**	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
trans-1,3-Dichloropropene	10061-02-6	0.4	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Trichloroethene	79-01-6	3	< 0.4	**1300 [1300]**	**55**	**90**	< 0.4	**110**	< 0.4	**0.44 J**	**4**	< 0.4	**16**	**16**
Trichlorofluoromethane	75-69-4	2,000	< 0.4	**12 J [14 J]**	**0.56 J**	< 0.4	**0.51 J**	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	**0.42 J**	< 0.4
Vinyl Chloride	75-01-4	0.03	< 0.4	**15 J [15 J]**	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	**0.66 J**
Xylenes (total)	1330-20-7	500	< 0.4	< 8 [< 8]	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4

See Notes on Page 3.

Table 8
Analytical Data for February 2019 Groundwater Samples
Tarheel Army Missile Plant
Burlington, North Carolina

Analyte	CAS Number	Sample ID:	MW-132	MW-133	MW-134 - [DUP-00]	MW-135
		Date Collected:	2/8/2019	2/7/2019	2/25/2019	2/25/2019
		Title 15A NCAC Subchapter 2L Groundwater Standard (µg/L)[a]				
1,1,1-Trichloroethane	71-55-6	200	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
1,1,2,2-Tetrachloroethane	79-34-5	0.2	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	200,000	< 0.42	< 0.42	< 0.42 [< 0.42]	< 0.42
1,1,2-Trichloroethane	79-00-5	5	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
1,1-Dichloroethane	75-34-3	6	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
1,1-Dichloroethene	75-35-4	350	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
1,2,4-Trichlorobenzene	120-82-1	70	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
1,2-Dibromo-3-Chloropropane	96-12-8	0.04	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
1,2-Dibromoethane	106-93-4	0.02	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
1,2-Dichlorobenzene	95-50-1	20	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
1,2-Dichloroethane	107-06-2	0.4	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
1,2-Dichloropropane	78-87-5	0.6	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
1,3-Dichlorobenzene	541-73-1	200	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
1,4-Dichlorobenzene	106-46-7	6	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
1,4-Dioxane	123-91-1	3	< 1	< 1	< 1 [< 1]	< 1
2-Butanone	78-93-3	4,000	< 2	< 2	< 2 [< 2]	< 2
2-Hexanone	591-78-6	7.6 [b]	< 2	< 2	< 2 [< 2]	< 2
4-Methyl-2-Pentanone	108-10-1	1260 [b]	< 2	< 2	< 2 [< 2]	< 2
Acetone	67-64-1	6,000	< 2	< 2	< 2 [< 2]	< 2
Acrolein	107-02-8	N/A	< 4	< 4	< 4 [< 4]	< 4
Benzene	71-43-2	1	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
Bromodichloromethane	75-27-4	0.6	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
Bromoform	75-25-2	4	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
Bromomethane	74-83-9	1.5 [b]	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
Carbon Disulfide	75-15-0	700	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
Carbon Tetrachloride	56-23-5	0.3	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
Chloride		250,000	--	--	-- [--]	--
Chlorobenzene	108-90-7	50	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
Chloroethane	75-00-3	3,000	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
Chloroform	67-66-3	70	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
Chloromethane (Methyl chloride)	74-87-3	3	< 0.5	< 0.5	< 0.5 [< 0.5]	< 0.5
cis-1,2-Dichloroethene	156-59-2	70	< 0.4	**2.8**	< 0.4 [< 0.4]	< 0.4
cis-1,3-Dichloropropene	10061-01-5	0.4	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
Cyclohexane	110-82-7	2,600 [b]	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
Dibromochloromethane	124-48-1	0.4	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
Dichlorofluoromethane	75-71-8	1,000	< 0.6	< 0.6	< 0.6 [< 0.6]	< 0.6
Ethylbenzene	100-41-4	600	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
Isopropylbenzene	98-82-8	70	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
Methyl Acetate	79-20-9	7,000	< 0.4	< 0.4	**0.44 J [0.43 J]**	**0.45 J**
Methylcyclohexane	108-87-2	230	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
Methylene chloride	75-09-2	5	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
Methyl-Tert-Butylether	1634-04-4	20	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
Styrene	100-42-5	70	< 0.41	< 0.41	< 0.41 [< 0.41]	< 0.41
Tetrachloroethene	127-18-4	0.7	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
Toluene	108-88-3	600	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
trans-1,2-Dichloroethene	156-60-5	100	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
trans-1,3-Dichloropropene	10061-02-6	0.4	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
Trichloroethene	79-01-6	3	< 0.4	**1.6**	< 0.4 [< 0.4]	< 0.4
Trichlorofluoromethane	75-69-4	2,000	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
Vinyl Chloride	75-01-4	0.03	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4
Xylenes (total)	1330-20-7	500	< 0.4	< 0.4	< 0.4 [< 0.4]	< 0.4

See Notes on Page 3.

Footnotes:

[a] 15A NCAC 02L .0202 Groundwater Standards (Effective April 1, 2013).

[b] There is not an NCAC 2L or U.S. Environmental Protection Agency Maximum Contaminant Limit standard for the chemical. Sceening concentration is Tapwater Regional Screening Level (Target Hazard Quotient [THQ] = 0.2).

Notes:

1. Detections are **bolded.**
2. Colored shading indicates which Groundwater Standard level was exceeded.
3. "NA" indicates no NCAC 2L or USEPA standard exists for the chemical.
4. "--" indicates that the analyte was not analysed.

Laboratory Qualifiers:

B = The analyte was detected in the method blank.

F = The analyte was positively identified but the associated numerical value is below the LOQ and greater than the Detection Limit.

J = The analyte was positively identified; the associated numeric value is the approximate concentration of the analyte in the sample.

M = A matrix effect was present.

Q = One or more quality control criteria failed.

U = Undetected. The analyte was analyzed for, but not detected. The associated numeric value is the Detection Limit.

Acronyms and Abbreviations:

µg/L= micrograms per litre (parts per billion)

NCAC = North Carolina Administrative Code

VOC = volatile organic compound

Table 9
Analytical Data for February 2019 Surface Water Samples
Tarheel Army Missile Plant
Burlington, North Carolina

Analyte	CAS Number	Title 15A NCAC Subchapter 02B Class WS-V	USEPA NRWQC Class WS-V	NCDEQ Protective Values Class WS-V	SW-1	SW-2	SW-3	SW-4
				Sample ID:	SW-1	SW-2	SW-3	SW-4
				Date Collected:	2/8/2019	2/7/2019	2/7/2019	2/7/2019
1,1,1-Trichloroethane	71-55-6	NA	10,000	NA	< 0.4	< 0.4	< 0.4	< 0.4
1,1,2,2-Tetrachloroethane	79-34-5	0.17	NA	NA	< 0.4	< 0.4	< 0.4	< 0.4
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	NA	NA	710,000	**0.82 J**	< 0.42	< 0.42	< 0.42
1,1,2-Trichloroethane	79-00-5	NA	0.55	NA	< 0.4	< 0.4	< 0.4	< 0.4
1,1-Dichloroethane	75-34-3	NA	NA	6	< 0.4	< 0.4	< 0.4	< 0.4
1,1-Dichloroethene	75-35-4	NA	300	NA	< 0.4	< 0.4	< 0.4	< 0.4
1,2,4-Trichlorobenzene	120-82-1	NA	NA	61 [b]	< 0.4	< 0.4	< 0.4	< 0.4
1,2-Dibromo-3-Chloropropane	96-12-8	NA	NA	0.033	< 0.4	< 0.4	< 0.4	< 0.4
1,2-Dibromoethane	106-93-4	NA	9.9	NA	< 0.4	< 0.4	< 0.4	< 0.4
1,2-Dichlorobenzene	95-50-1	NA	488 [c]	470 [b]	< 0.4	< 0.4	< 0.4	< 0.4
1,2-Dichloroethane	107-06-2	NA	9.9	NA	< 0.4	< 0.4	< 0.4	< 0.4
1,2-Dichloropropane	78-87-5	NA	0.9	NA	< 0.4	< 0.4	< 0.4	< 0.4
1,3-Dichlorobenzene	541-73-1	NA	488 [c]	390 [b]	< 0.4	< 0.4	< 0.4	< 0.4
1,4-Dichlorobenzene	106-46-7	NA	488 [c]	100 [b]	< 0.4	< 0.4	< 0.4	< 0.4
1,4-Dioxane	123-91-1	NA	NA	0.35	< 1	< 1	< 1	< 1
2-Butanone	78-93-3	NA	NA	20,000	< 2	< 2	< 2	< 2
2-Hexanone	591-78-6	NA	NA	NA	< 2	< 2	< 2	< 2
4-Methyl-2-Pentanone	108-10-1	NA	NA	2,800	< 2	< 2	< 2	< 2
Acetone	67-64-1	NA	NA	3,100	< 2	< 2	< 2	< 2
Acrolein	107-02-8	NA	3	NA	< 4	< 4	< 4	< 4
Benzene	71-43-2	1.19	NA	NA	< 0.4	< 0.4	< 0.4	< 0.4
Bromodichloromethane	75-27-4	NA	0.95	NA	< 0.4	< 0.4	< 0.4	< 0.4
Bromoform	75-25-2	NA	7	NA	< 0.4	< 0.4	< 0.4	< 0.4
Bromomethane (Methyl bromide)	74-83-9	NA	100	NA	< 0.4	< 0.4	< 0.4	< 0.4 L
Carbon Disulfide	75-15-0	NA	NA	3,000	< 0.4	< 0.4	< 0.4	< 0.4
Carbon Tetrachloride	56-23-5	0.254	NA	NA	< 0.4	< 0.4	< 0.4	< 0.4
Chloride	16887-00-6	250,000	NA	NA	--	--	--	--
Chlorobenzene	108-90-7	488 [a]	NA	NA	< 0.4	< 0.4	< 0.4	< 0.4
Chloroethane	75-00-3	NA	NA	NA	< 0.4	< 0.4	< 0.4	< 0.4
Chloroform	67-66-3	NA	60	NA	< 0.4	< 0.4	< 0.4	< 0.4
Chloromethane	74-87-3	NA	NA	2.6	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,2-Dichloroethene	156-59-2	NA	NA	60	**6.3**	**2.8**	**1.7**	**0.71 J**
cis-1,3-Dichloropropene	10061-01-5	NA	0.27	NA	< 0.4	< 0.4	< 0.4	< 0.4
Cyclohexane	110-82-7	NA	NA	230 [b]	< 0.4	< 0.4	< 0.4	< 0.4
Dibromochloromethane	124-48-1	NA	0.8	NA	< 0.4	< 0.4	< 0.4	< 0.4
Dichlorofluoromethane	75-71-8	NA	NA	NA	< 0.6	< 0.6	< 0.6	< 0.6
Ethylbenzene	100-41-4	NA	68	NA	< 0.4	< 0.4	< 0.4	< 0.4
Isopropylbenzene	98-82-8	NA	NA	2,700	< 0.4	< 0.4	< 0.4	< 0.4
Methyl Acetate	79-20-9	NA	NA	19,000 [b]	< 0.4	< 0.4	< 0.4	< 0.4
Methylcyclohexane	108-87-2	NA	NA	NA	< 0.4	< 0.4	< 0.4	< 0.4
Methylene chloride	75-09-2	NA	20	NA	< 0.4	< 0.4	< 0.4	< 0.4
Methyl-Tert-Butylether	1634-04-4	NA	NA	19	< 0.4	< 0.4	< 0.4	< 0.4
Styrene	100-42-5	NA	NA	NA	< 0.41	< 0.41	< 0.41	< 0.41
Tetrachloroethene	127-18-4	0.7	NA	NA	**15**	**7.5**	**3.9**	**1.8**
Toluene	108-88-3	11 [b]	57	NA	< 0.4	< 0.4	< 0.4	< 0.4
trans-1,2-Dichloroethene	156-60-5	NA	100	NA	< 0.4	< 0.4	< 0.4	< 0.4
trans-1,3-Dichloropropene	10061-02-6	NA	0.27	NA	< 0.4	< 0.4	< 0.4	< 0.4
Trichloroethene	79-01-6	2.5	NA	NA	**18**	**7**	**4.6**	**2**
Trichlorofluoromethane	75-69-4	NA	NA	9,100	< 0.4	< 0.4	< 0.4	< 0.4
Vinyl Chloride	75-01-4	0.025	NA	NA	< 0.4	< 0.4	< 0.4	< 0.4
Xylenes (total)	1330-20-7		NA	6,200	< 0.4	< 0.4	< 0.4	< 0.4

Footnotes:
[a] Concentration is the total of all Chlorinated Benzenes.
[b] There is no Class WS standard. Concentration is the standard for Class C.
[c] Based on NCAC 02B standard for total of all chlorinated benzenes.

Notes:
1. Detections are **bolded.**
2. Colored shading indicates which Class was exceeded.
3. "NA" indicates no regulatory value has been established.
4. "--" indicates that the analyte was not analysed

Acronyms and Abbreviations:
µg/L= micrograms per litre (parts per billion)
NCAC = North Carolina Administrative Code
NCDEQ = North Carolina Department of Environmental Quality
NRWQC = National Recommended Water Quality Criteria
USEPA = U.S. Environmental Protection Agency

Laboratory Qualifiers:
B = The analyte was detected in the method blank.
J = The analyte was positively identified; the associated numeric value is the approximate concentration of the analyte in the sample.
< = Undetected. The analyte was analyzed for, but not detected. The associated numeric value is the Detection Limit.

Table 10
Analytical Data for February 2019 Soil Vapor Samples
Tarheel Army Missile Plant
Burlington, North Carolina

Chemical	Sample/Location ID:	Units	NCDEQ DWM VI Screening Level Concentrations[a]		SV-1	SV-2 [DUP-1]	SV-7	SV-8	SV-9
	Date Collected:		Residential	Non-residential	02/25/19	02/25/19	02/25/19	02/25/19	02/25/19
Volatile Organics									
1,1,1-Trichloroethane		µg/m³	35,000	440,000	**8.9**	< 1500 [< 1500]	< 0.51	< 0.66	< 0.36
1,1-Dichloroethane		µg/m³	580	7,700	**3.6 J**	< 1800 [< 1800]	< 0.6	< 0.78	< 0.43
1,1-Dichloroethene		µg/m³	1,400	18,000	**37**	**22000 [20000]**	< 0.57	< 0.74	< 0.41
1,2,4-Trimethylbenzene		µg/m³	420	5,300	**2.2 J**	< 1700 [< 1700]	**1.5 J**	**1.6 J**	**1.3 J**
1,3-Butadiene		µg/m³	14	180	**2.2 J**	< 2000 [< 2000]	< 0.68	**12**	**1.9 J**
1,3-Dichlorobenzene		µg/m³	1,400	18,000	< 0.89	< 1800 [< 1800]	< 0.62	**0.81 J**	< 0.44
2-Butanone (MEK)		µg/m³	35,000	440,000	**22**	< 2500 [< 2500]	**10**	**14**	**27**
2-Hexanone		µg/m³	210	2,600	**4.5 J**	< 1500 [< 1500]	**2.1 J**	< 0.66	< 0.36
2-Propanol		µg/m³	1,400	18,000	**12 J**	< 5000 [< 5100]	**7.4 J**	**26**	**42**
4-Ethyltoluene		µg/m³	NA	NA	< 0.95	< 1900 [< 2000]	< 0.66	< 0.85	**0.51 J**
4-Methyl-2-pentanone		µg/m³	21,000	260,000	< 0.81	< 1600 [< 1700]	< 0.57	< 0.73	**2 J**
Acetone		µg/m³	220,000	2,700,000	**2400**	< 27000 [< 28000]	**800**	**1500**	**800**
Acrolein		µg/m³	0.140	1.80	< 1.7	< 3400 [< 3500]	< 1.2	< 1.5	**2.6 J**
alpha-Pinene		µg/m³	NA	NA	< 0.91	< 1800 [< 1900]	**2.8 J**	**4.9 J**	**55**
Benzene		µg/m³	120	1,600	**1.7 J**	< 1700 [< 1800]	**1.4 J**	**6.2**	**4.5**
Carbon Disulfide		µg/m³	4,900	61,000	< 1.8	< 3600 [< 3700]	**8.4 J**	**110**	**84**
Carbon Tetrachloride		µg/m³	160	2,000	**2.5 J**	< 1700 [< 1700]	< 0.57	**1 J**	**0.77 J**
Chloroform		µg/m³	41	530	**14**	**3700 J [3200 J]**	**4.3**	< 0.71	< 0.39
Chloromethane		µg/m³	630	7,900	**2.2 J**	< 1900 [< 2000]	< 0.67	< 0.86	**1.7 J**
cis-1,2-Dichloroethene		µg/m³	NA	NA	**6.2**	**17000 [14000]**	< 0.58	< 0.75	< 0.41
Cyclohexane		µg/m³	42,000	530,000	< 1.7	< 3400 [< 3500]	**4.9 J**	**5.1 J**	**12**
Dichlorodifluoromethane (CFC 12)		µg/m³	700	8,800	**28**	< 2000 [< 2000]	**3 J**	**4.4 J**	**2.7 J**
d-Limonene		µg/m³	NA	NA	< 1.2	< 2500 [< 2500]	< 0.85	< 1.1	**21**
Ethanol[b]		µg/m³	140,000	1,800,000	**47 J**	< 8300 [< 8500]	**31 J**	**270**	**120**
Ethyl Acetate		µg/m³	490	6,100	< 3.1	< 6300 [< 6500]	**5.1 J**	**6.4 J**	**130**
Ethylbenzene		µg/m³	370	4,900	**1.7 J**	< 1700 [< 1700]	**1.5 J**	**2 J**	**2.4 J**
m,p-Xylenes		µg/m³	700	8,800	**4.8 J**	< 3200 [< 3200]	**3.6 J**	**4.7 J**	**6.1**
Methylene Chloride		µg/m³	4,200	53,000	< 1.7	< 3400 [< 3500]	< 1.2	< 1.5	**3.4**
Naphthalene		µg/m³	21	260	< 1.4	< 2900 [< 3000]	< 1	< 1.3	< 0.72
n-Butyl Acetate		µg/m³	NA	NA	< 0.81	< 1600 [< 1700]	< 0.57	< 0.73	**2.5 J**
n-Heptane[d]		µg/m³	2,800	35,000	**2.4 J**	< 1900 [< 2000]	**3.3 J**	**19**	**9.4**
n-Hexane		µg/m³	4,900	61,000	< 1.2	< 2500 [< 2500]	**17**	**41**	**19**
n-Nonane		µg/m³	140	1,800	**4.1 J**	< 2000 [< 2100]	**5**	**19**	**5.2**
n-Octane[d]		µg/m³	NA	NA	**2 J**	< 2700 [< 2800]	**2.5 J**	**9.2**	**5.6**
n-Propylbenzene		µg/m³	7,000	88,000	< 0.86	< 1700 [< 1800]	< 0.6	< 0.77	**0.52 J**
o-Xylene		µg/m³	700	8,800	**1.7 J**	< 1700 [< 1800]	**1.3 J**	**1.8 J**	**2.8 J**
Propene		µg/m³	21,000	260,000	**16**	**5700 J** [< 3000]	**18**	**920**	**180**
Styrene		µg/m³	7,000	88,000	**4.4 J**	< 1900 [< 2000]	**4.9**	**5.2 J**	**5.5**
Tetrachloroethene		µg/m³	280	3,500	**770**	**450000 [440000]**	**3 J**	**0.69 J**	**1.7 J**
Toluene		µg/m³	35,000	440,000	**4.3 J**	< 1500 [< 1500]	**4.9**	**11**	**33**
Trichloroethene		µg/m³	14	180	**6300 D**	**2600000 D [2400000]**	< 0.56	< 0.72	**3.7**
Trichlorofluoromethane[c]		µg/m³	NA	NA	**190**	< 1800 [< 1900]	**31**	**4.1 J**	**3.3**
Trichlorotrifluoroethane[c]		µg/m³	35,000	440,000	**210**	< 1700 [< 1800]	**4.3**	**2.8 J**	**1.1 J**
Vinyl Chloride		µg/m³	56	2,800	< 0.63	< 1300 [< 1300]	< 0.44	< 0.57	< 0.31

Footnotes:

[a] NCDEQ DWM VI Screening Levels for Sub-slab and Exterior Soil Gas (NCDEQ 2016a,b).
[b] Methanol used as a surrogate.
[c] 1,1,2-Trichloro-1,2,2-trifluoroethane used as a surrogate.
[d] n-Hexane used as a surrogate.

Notes:
1. Detections are **bolded.**
2. Colored shading indicates which screening level was exceeded.
3. Duplicate sample values are shown in brackets.
4. NA = Not available; inhalation toxicity value is unavailable.

Sources:
NCDEQ. 2018a. DWM Residential Vapor Intrusion Screening Concentrations

NCDEQ. 2018b.DWM Non-Residential Vapor Intrusion Screening Concentrations

Notes:
U - Not detected at or above the reporting limit
LOQ - Limit of Quantitation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J - Estimated result
D - The reported result is from a dilution.
ug/m³ - microgram per cubic meter

Acronyms and Abbreviations:
DWM = Division of Waste Management
µg/m³ = microgram per cubic meter
NCDEQ = North Carolina Department of Environmental Quality
VI = vapor intrusion

Laboratory Qualifiers:
D = Diluted sample.
J = The analyte was positively identified; the associated numeric value is the approximate concentration of the analyte in the sample.

Table 11
Analytical Data for April 2019 Soil Vapor Samples
Tarheel Army Missile Plant
Burlington, North Carolina

Chemical	Sample/Location ID:	Units	NCDEQ DWM VI Screening Level Concentrations[a]		SV-5	SV-6	SV-10	SV-11	SV-12 [Dup-1]
	Date Collected:		Residential	Non-residential	04/17/19	04/17/19	04/17/19	04/17/19	04/17/19
Volatile Organics									
Benzene		µg/m^3	120	1,600	**1.17**	**1.01**	**1.08**	**1.20**	**1.09 [1.36]**
1,1-Dichloroethene		µg/m^3	1,400	18,000	<1.62	<1.62	<1.62	<1.62	<1.61 [<1.61]
cis-1,2-Dichloroethene		µg/m^3	NA	NA	<0.99	<0.99	<0.98	<0.98	<0.98 [<0.98]
trans-1,2-Dichloroethene		µg/m^3	NA	NA	<1.20	<1.20	<1.20	<1.20	<1.20 [<1.20]
Tetrachloroethene		µg/m^3	280	3,500	<1.30	<1.30	<1.30	<1.29	<1.29 [<1.29]
Trichloroethene		µg/m^3	14	180	<1.57	<1.57	<1.56	<1.56	<1.56 [<1.56]
Vinyl Chloride		µg/m^3	56	2,800	<0.69	<0.69	<0.69	<0.69	<0.69 [<0.69]

Footnotes:
[a] NCDEQ DWM VI Screening Levels for Sub-slab and Exterior Soil Gas (NCDEQ 2016a,b).
[b] Methanol used as a surrogate.
[c] 1,1,2-Trichloro-1,2,2-trifluoroethane used as a surrogate.
[d] n-Hexane used as a surrogate.

Notes:
1. Detections are **bolded.**
2. Colored shading indicates which screening level was exceeded.
3. Duplicate sample values are shown in brackets.
4. NA = Not available; inhalation toxicity value is unavailable.

Sources:
NCDEQ. 2018a. DWM Residential Vapor Intrusion Screening Concentrations
NCDEQ. 2018b.DWM Non-Residential Vapor Intrusion Screening Concentrations

Acronyms and Abbreviations:
DWM = Division of Waste Management
µg/m^3 = microgram per cubic meter
NCDEQ = North Carolina Department of Environmental Quality
VI = vapor intrusion

Laboratory Qualifiers:
D = Diluted sample.
J = The analyte was positively identified; the associated numeric value is the approximate concentration of the analyte in the sample.

FIGURES

LEGEND

- Tarheel AAP Site Boundary
- Drainage Ditch/Stream
- Area of Interest
- Building No.
- Monitoring Well (bedrock)
- Monitoring Well (saprolite)
- Surface Water
- Piezometer
- Screen Point (2014)
- Soil Vapor
- Abandoned Well
- Destroyed Monitoring Well

0 240 480

SCALE IN FEET

PROJECTION: NAD 1983 StatePlane North Carolina FIPS 3200 Feet
AERIAL SOURCE: ESRI Online Imagery (NAIP, August 2014).

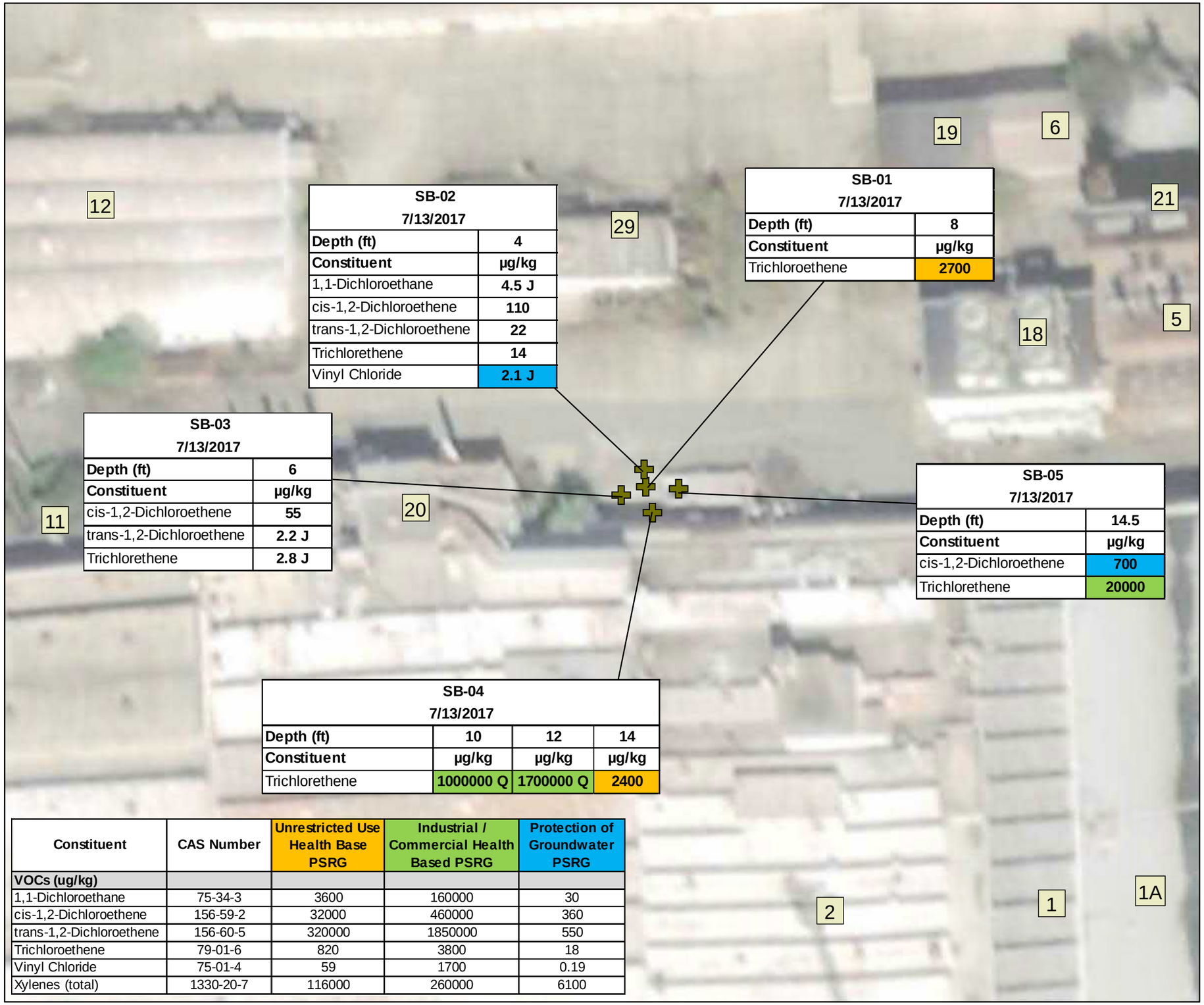
TARHEEL ARMY AMMUNITION PLANT
BURLINGTON, NORTH CAROLINA

Site Layout Map

PIKA ARCADIS a joint venture

FIGURE
2

PROJECT: 10153010.0001 SAVED: 3/27/2020 BY: DGONG
PATH: \\ARCADIS-US.COM\OFFICEDATA\VIRGINIABEACH-VA\PROJECTS\10153 - FORT STEWART\010 - TAR HEEL MISSILE PLANT\MAPDOCS\2017\NCDEQ FIGURES



SB-02 7/13/2017	
Depth (ft)	**4**
Constituent	**µg/kg**
1,1-Dichloroethane	**4.5 J**
cis-1,2-Dichloroethene	**110**
trans-1,2-Dichloroethene	**22**
Trichlorethene	**14**
Vinyl Chloride	**2.1 J**

SB-01 7/13/2017	
Depth (ft)	**8**
Constituent	**µg/kg**
Trichloroethene	**2700**

SB-03 7/13/2017	
Depth (ft)	**6**
Constituent	**µg/kg**
cis-1,2-Dichloroethene	**55**
trans-1,2-Dichloroethene	**2.2 J**
Trichlorethene	**2.8 J**

SB-05 7/13/2017	
Depth (ft)	**14.5**
Constituent	**µg/kg**
cis-1,2-Dichloroethene	**700**
Trichlorethene	**20000**

SB-04 7/13/2017			
Depth (ft)	**10**	**12**	**14**
Constituent	**µg/kg**	**µg/kg**	**µg/kg**
Trichlorethene	**1000000 Q**	**1700000 Q**	**2400**

Constituent	CAS Number	Unrestricted Use Health Base PSRG	Industrial / Commercial Health Based PSRG	Protection of Groundwater PSRG
VOCs (ug/kg)				
1,1-Dichloroethane	75-34-3	3600	160000	30
cis-1,2-Dichloroethene	156-59-2	32000	460000	360
trans-1,2-Dichloroethene	156-60-5	320000	1850000	550
Trichloroethene	79-01-6	820	3800	18
Vinyl Chloride	75-01-4	59	1700	0.19
Xylenes (total)	1330-20-7	116000	260000	6100

LEGEND

Tarheel AAP Site Boundary

5 Building No.

Soil Boring Location

NOTES:
1. All locations are approximate.
2. Blue Highlighted values exceed the Protection of Groundwater PSRG.
3. Orange Highlighted values exceed the Unrestricted Use Health Based PSRG.
4. Green Highlighted values exceed the Industrial/Commercial Health Based PSRG.

PSRG - Preliminary Soil Remediation Goals
µg/kg - micrograms per kilogram (parts per billion)
J - Estimated result
Q - One or more quality control criteria failed

0 50 100
SCALE IN FEET

PROJECTION: NAD 1983 StatePlane North Carolina FIPS 3200 Feet
AERIAL SOURCE: ESRI Online Imagery (NAIP, August 2014).

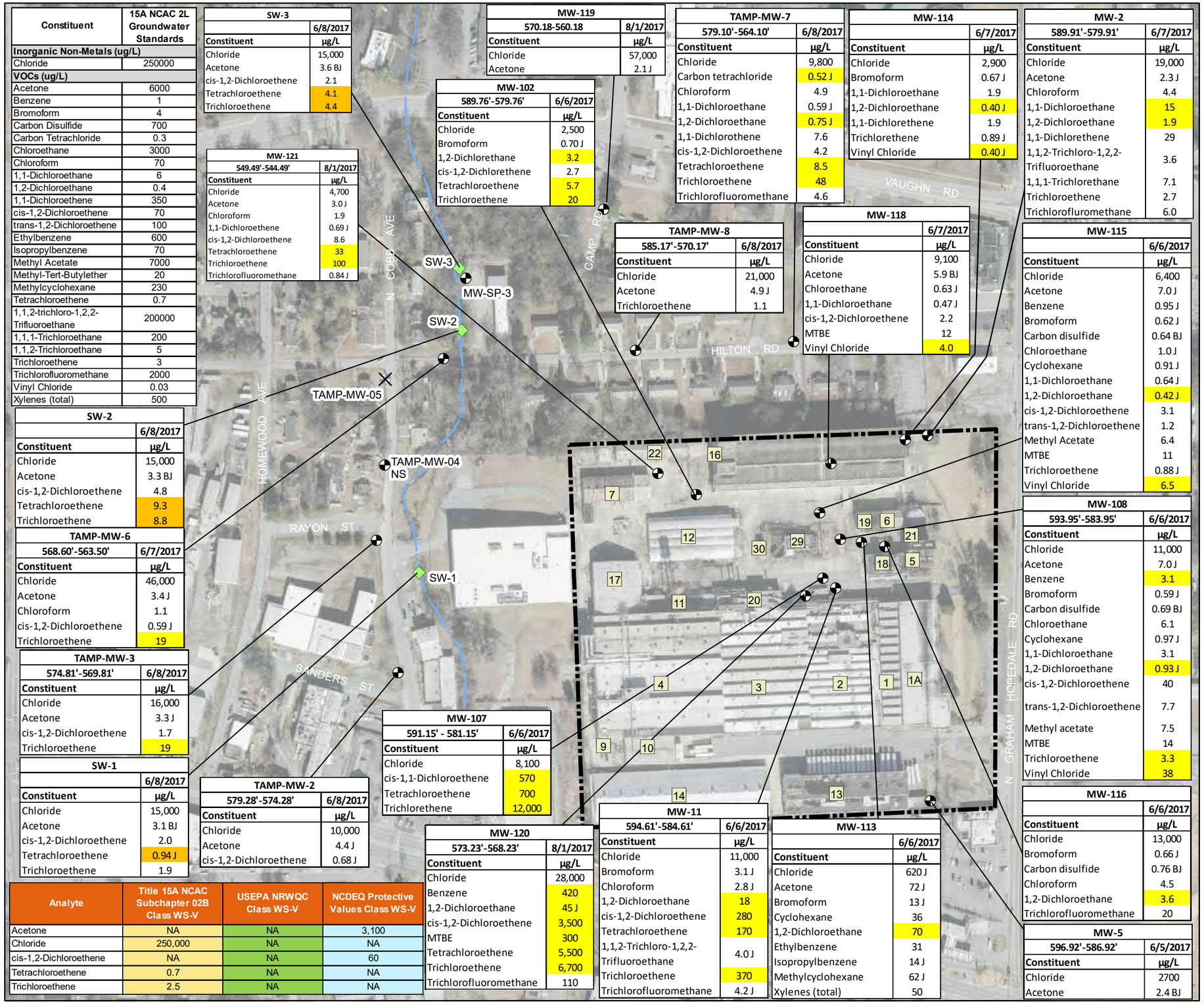
TARHEEL ARMY AMMUNITION PLANT
BURLINGTON, NORTH CAROLINA

Constituents Detected in Soil
(July 2017)

PIKA ARCADIS a joint venture

FIGURE
7

PROJECT: 10153010.0001 SAVED: 11/1/2018 BY: DGONG
PATH: \\ARCADIS-US.COM\OFFICEDATA\VIRGINIABEACH-VA\PROJECTS\10153 - FORT STEWART\010 - TAR HEEL MISSILE PLANT\MAPDOCS\2017\NCDEQ FIGURES



Constituent	15A NCAC 2L Groundwater Standards
Inorganic Non-Metals (ug/L)	
Chloride	250000
VOCs (ug/L)	
Acetone	6000
Benzene	1
Bromoform	4
Carbon Disulfide	700
Carbon Tetrachloride	0.3
Chloroethane	3000
Chloroform	70
1,1-Dichloroethane	6
1,2-Dichloroethane	0.4
1,1-Dichloroethene	350
cis-1,2-Dichloroethene	70
trans-1,2-Dichloroethene	100
Ethylbenzene	600
Isopropylbenzene	70
Methyl Acetate	7000
Methyl-Tert-Butylether	20
Methylcyclohexane	230
Tetrachloroethene	0.7
1,1,2-trichloro-1,2,2-Trifluoroethane	200000
1,1,1-Trichloroethane	200
1,1,2-Trichloroethane	5
Trichloroethene	3
Trichlorofluoromethane	2000
Vinyl Chloride	0.03
Xylenes (total)	500

SW-3	6/8/2017
Constituent	µg/L
Chloride	15,000
Acetone	3.6 BJ
cis-1,2-Dichloroethene	2.1
Tetrachloroethene	4.1
Trichloroethene	4.4

MW-119	
570.18-560.18	8/1/2017
Constituent	µg/L
Chloride	57,000
Acetone	2.1 J

TAMP-MW-7	
579.10'-564.10'	6/8/2017
Constituent	µg/L
Chloride	9,800
Carbon tetrachloride	0.52 J
Chloroform	4.9
1,1-Dichloroethane	0.59 J
1,2-Dichloroethane	0.75 J
1,1-Dichlorothene	7.6
cis-1,2-Dichloroethene	4.2
Tetrachloroethene	8.5
Trichloroethene	48
Trichlorofluoromethane	4.6

MW-114	
	6/7/2017
Constituent	µg/L
Chloride	2,900
Bromoform	0.67 J
1,1-Dichloroethane	1.9
1,2-Dichloroethane	0.40 J
1,1-Dichlorethene	1.9
Trichlorethene	0.89 J
Vinyl Chloride	0.40 J

MW-2	
589.91'-579.91'	6/7/2017
Constituent	µg/L
Chloride	19,000
Acetone	2.3 J
Chloroform	4.4
1,1-Dichloroethane	15
1,2-Dichloroethane	1.9
1,1-Dichlorethene	29
1,1,2-Trichloro-1,2,2-Trifluoroethane	3.6
1,1,1-Trichlorethane	7.1
Trichloroethene	2.7
Trichlorofluromethane	6.0

MW-102	
589.76'-579.76'	6/6/2017
Constituent	µg/L
Chloride	2,500
Bromoform	0.70 J
1,2-Dichlorethane	3.2
cis-1,2-Dichlorethene	2.7
Tetrachloroethene	5.7
Trichloroethene	20

MW-121	
549.49'-544.49'	8/1/2017
Constituent	µg/L
Chloride	4,700
Acetone	3.0 J
Chloroform	1.9
1,1-Dichloroethene	0.69 J
cis-1,2-Dichloroethene	8.6
Tetrachloroethene	33
Trichloroethene	100
Trichlorofluoromethane	0.84 J

TAMP-MW-8	
585.17'-570.17'	6/8/2017
Constituent	µg/L
Chloride	21,000
Acetone	4.9 J
Trichloroethene	1.1

MW-118	
	6/7/2017
Constituent	µg/L
Chloride	9,100
Acetone	5.9 BJ
Chloroethane	0.63 J
1,1-Dichloroethane	0.47 J
cis-1,2-Dichloroethene	2.2
MTBE	12
Vinyl Chloride	4.0

MW-115	
	6/6/2017
Constituent	µg/L
Chloride	6,400
Acetone	7.0 J
Benzene	0.95 J
Bromoform	0.62 J
Carbon disulfide	0.64 BJ
Chloroethane	1.0 J
Cyclohexane	0.91 J
1,1-Dichloroethane	0.64 J
1,2-Dichloroethane	0.42 J
cis-1,2-Dichloroethene	3.1
trans-1,2-Dichloroethene	1.2
Methyl Acetate	6.4
MTBE	11
Trichloroethene	0.88 J
Vinyl Chloride	6.5

SW-2	6/8/2017
Constituent	µg/L
Chloride	15,000
Acetone	3.3 BJ
cis-1,2-Dichloroethene	4.8
Tetrachloroethene	9.3
Trichloroethene	8.8

TAMP-MW-6	
568.60'-563.50'	6/7/2017
Constituent	µg/L
Chloride	46,000
Acetone	3.4 J
Chloroform	1.1
cis-1,2-Dichloroethene	0.59 J
Trichloroethene	19

MW-108	
593.95'-583.95'	6/6/2017
Constituent	µg/L
Chloride	11,000
Acetone	7.0 J
Benzene	3.1
Bromoform	0.59 J
Carbon disulfide	0.69 BJ
Chloroethane	6.1
Cyclohexane	0.97 J
1,1-Dichloroethane	3.1
1,2-Dichloroethane	0.93 J
cis-1,2-Dichloroethene	40
trans-1,2-Dichloroethene	7.7
Methyl acetate	7.5
MTBE	14
Trichloroethene	3.3
Vinyl Chloride	38

TAMP-MW-3	
574.81'-569.81'	6/8/2017
Constituent	µg/L
Chloride	16,000
Acetone	3.3 J
cis-1,2-Dichloroethene	1.7
Trichloroethene	19

MW-107	
591.15' - 581.15'	6/6/2017
Constituent	µg/L
Chloride	8,100
cis-1,1-Dichloroethene	570
Tetrachloroethene	700
Trichlorethene	12,000

SW-1	6/8/2017
Constituent	µg/L
Chloride	15,000
Acetone	3.1 BJ
cis-1,2-Dichloroethene	2.0
Tetrachloroethene	0.94 J
Trichloroethene	1.9

TAMP-MW-2	
579.28'-574.28'	6/8/2017
Constituent	µg/L
Chloride	10,000
Acetone	4.4 J
cis-1,2-Dichloroethene	0.68 J

MW-120	
573.23'-568.23'	8/1/2017
Constituent	µg/L
Chloride	28,000
Benzene	420
1,2-Dichloroethane	45 J
cis-1,2-Dichloroethene	3,500
MTBE	300
Tetrachloroethene	5,500
Trichloroethene	6,700
Trichlorofluoromethane	110

MW-11	
594.61'-584.61'	6/6/2017
Constituent	µg/L
Chloride	11,000
Bromoform	3.1 J
Chloroform	2.8 J
1,2-Dichloroethane	18
cis-1,2-Dichloroethene	280
Tetrachloroethene	170
1,1,2-Trichloro-1,2,2-Trifluoroethane	4.0 J
Trichloroethene	370
Trichlorofluoromethane	4.2 J

MW-113	
	6/6/2017
Constituent	µg/L
Chloride	620 J
Acetone	72 J
Bromoform	13 J
Cyclohexane	36
1,2-Dichloroethane	70
Ethylbenzene	31
Isopropylbenzene	14 J
Methylcyclohexane	62 J
Xylenes (total)	50

MW-116	
	6/6/2017
Constituent	µg/L
Chloride	13,000
Bromoform	0.66 J
Carbon disulfide	0.76 BJ
Chloroform	4.5
1,2-Dichloroethane	3.6
Trichlorofluoromethane	20

MW-5	
596.92'-586.92'	6/5/2017
Constituent	µg/L
Chloride	2700
Acetone	2.4 BJ

Analyte	Title 15A NCAC Subchapter 02B Class WS-V	USEPA NRWQC Class WS-V	NCDEQ Protective Values Class WS-V
Acetone	NA	NA	3,100
Chloride	250,000	NA	NA
cis-1,2-Dichloroethene	NA	NA	60
Tetrachloroethene	0.7	NA	NA
Trichloroethene	2.5	NA	NA

LEGEND

- Tarheel AAP Site Boundary
- Drainage Ditch/Stream
- 5 Building No.
- Destroyed Monitoring Well
- Monitoring Well (saprolite)
- Surface Water (2017)

NOTES:
1. All locations are approximate.
2. VOC results are reported in micrograms per liter (µg/L).
3. Yellow highlighted values exceed the NCAC 2L Groundwater Standard.
4. Orange highlighted values exceed the NC 02B Class WS-V Surface Water Standard.
   -Tetrachloroethene: 0.7 ug/L
   -Trichloroethene: 2.5 ug/L
5. NS - Well was dry and could not be sampled
6. CNL - Well could not be located
7. Screen interval not available for MW-113, MW-114, MW-115, MW-116, MW-118

0 240 480
SCALE IN FEET

PROJECTION: NAD 1983 StatePlane North Carolina FIPS 3200 Feet
AERIAL SOURCE: ESRI Online Imagery (NAIP, August 2014).

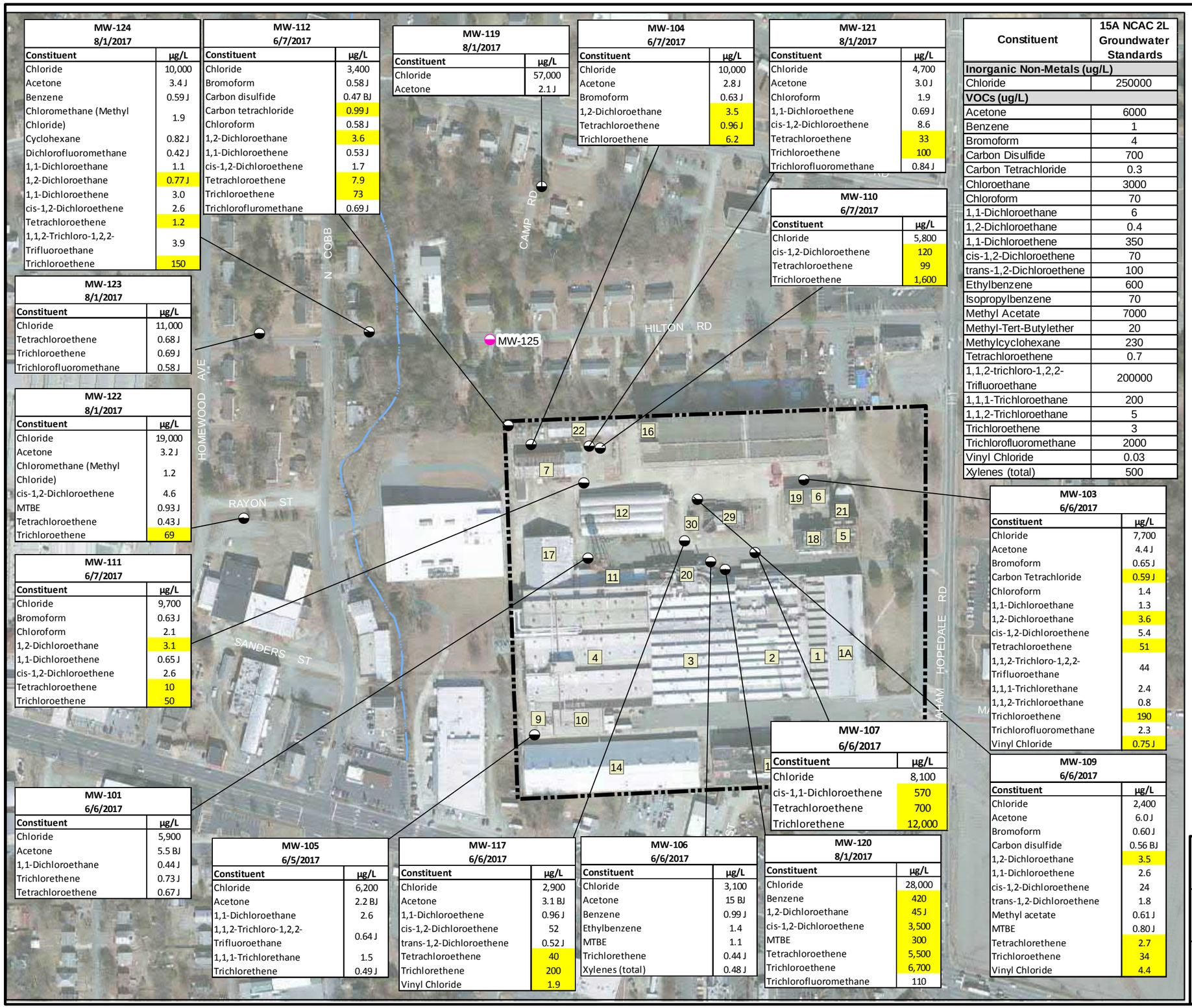
TARHEEL ARMY AMMUNITION PLANT
BURLINGTON, NORTH CAROLINA

Constituents Detected in Groundwater - Saprolite (June 2017)

PIKA ARCADIS a joint venture

FIGURE 8

PROJECT: 10153010.0001 SAVED: 4/8/2020 BY: DGONG
PATH: \\ARCADIS-US.COM\OFFICEDATA\VIRGINIABEACH-VA\PROJECTS\10153 - FORT STEWART\010 -TAR HEEL MISSILE PLANT\MAPDOCS\2017\NCDEQ FIGURES



MW-124
8/1/2017

Constituent	µg/L
Chloride	10,000
Acetone	3.4 J
Benzene	0.59 J
Chloromethane (Methyl Chloride)	1.9
Cyclohexane	0.82 J
Dichlorofluoromethane	0.42 J
1,1-Dichloroethane	1.1
1,2-Dichloroethane	0.77 J
1,1-Dichloroethene	3.0
cis-1,2-Dichloroethene	2.6
Tetrachloroethene	1.2
1,1,2-Trichloro-1,2,2-Trifluoroethane	3.9
Trichloroethene	150

MW-112
6/7/2017

Constituent	µg/L
Chloride	3,400
Bromoform	0.58 J
Carbon disulfide	0.47 BJ
Carbon tetrachloride	0.99 J
Chloroform	0.58 J
1,2-Dichloroethane	3.6
1,1-Dichloroethene	0.53 J
cis-1,2-Dichloroethene	1.7
Tetrachloroethene	7.9
Trichloroethene	73
Trichlorofluromethane	0.69 J

MW-119
8/1/2017

Constituent	µg/L
Chloride	57,000
Acetone	2.1 J

MW-104
6/7/2017

Constituent	µg/L
Chloride	10,000
Acetone	2.8 J
Bromoform	0.63 J
1,2-Dichloroethane	3.5
Tetrachloroethene	0.96 J
Trichloroethene	6.2

MW-121
8/1/2017

Constituent	µg/L
Chloride	4,700
Acetone	3.0 J
Chloroform	1.9
1,1-Dichloroethene	0.69 J
cis-1,2-Dichloroethene	8.6
Tetrachloroethene	33
Trichloroethene	100
Trichlorofluoromethane	0.84 J

MW-110
6/7/2017

Constituent	µg/L
Chloride	5,800
cis-1,2-Dichloroethene	120
Tetrachloroethene	99
Trichloroethene	1,600

MW-123
8/1/2017

Constituent	µg/L
Chloride	11,000
Tetrachloroethene	0.68 J
Trichloroethene	0.69 J
Trichlorofluoromethane	0.58 J

MW-122
8/1/2017

Constituent	µg/L
Chloride	19,000
Acetone	3.2 J
Chloromethane (Methyl Chloride)	1.2
cis-1,2-Dichloroethene	4.6
MTBE	0.93 J
Tetrachloroethene	0.43 J
Trichloroethene	69

MW-111
6/7/2017

Constituent	µg/L
Chloride	9,700
Bromoform	0.63 J
Chloroform	2.1
1,2-Dichloroethane	3.1
1,1-Dichloroethene	0.65 J
cis-1,2-Dichloroethene	2.6
Tetrachloroethene	10
Trichloroethene	50

MW-101
6/6/2017

Constituent	µg/L
Chloride	5,900
Acetone	5.5 BJ
1,1-Dichloroethane	0.44 J
Trichlorethene	0.73 J
Tetrachloroethene	0.67 J

MW-105
6/5/2017

Constituent	µg/L
Chloride	6,200
Acetone	2.2 BJ
1,1-Dichloroethane	2.6
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.64 J
1,1,1-Trichlorethane	1.5
Trichlorethene	0.49 J

MW-117
6/6/2017

Constituent	µg/L
Chloride	2,900
Acetone	3.1 BJ
1,1-Dichloroethene	0.96 J
cis-1,2-Dichloroethene	52
trans-1,2-Dichloroethene	0.52 J
Tetrachloroethene	40
Trichlorethene	200
Vinyl Chloride	1.9

MW-106
6/6/2017

Constituent	µg/L
Chloride	3,100
Acetone	15 BJ
Benzene	0.99 J
Ethylbenzene	1.4
MTBE	1.1
Trichlorethene	0.44 J
Xylenes (total)	0.48 J

MW-107
6/6/2017

Constituent	µg/L
Chloride	8,100
cis-1,1-Dichloroethene	570
Tetrachloroethene	700
Trichlorethene	12,000

MW-120
8/1/2017

Constituent	µg/L
Chloride	28,000
Benzene	420
1,2-Dichloroethane	45 J
cis-1,2-Dichloroethene	3,500
MTBE	300
Tetrachloroethene	5,500
Trichloroethene	6,700
Trichlorofluoromethane	110

MW-103
6/6/2017

Constituent	µg/L
Chloride	7,700
Acetone	4.4 J
Bromoform	0.65 J
Carbon Tetrachloride	0.59 J
Chloroform	1.4
1,1-Dichloroethane	1.3
1,2-Dichloroethane	3.6
cis-1,2-Dichloroethene	5.4
Tetrachloroethene	51
1,1,2-Trichloro-1,2,2-Trifluoroethane	44
1,1,1-Trichlorethane	2.4
1,1,2-Trichloroethane	0.8
Trichloroethene	190
Trichlorofluoromethane	2.3
Vinyl Chloride	0.75 J

MW-109
6/6/2017

Constituent	µg/L
Chloride	2,400
Acetone	6.0 J
Bromoform	0.60 J
Carbon disulfide	0.56 BJ
1,2-Dichloroethane	3.5
1,1-Dichloroethene	2.6
cis-1,2-Dichloroethene	24
trans-1,2-Dichloroethene	1.8
Methyl acetate	0.61 J
MTBE	0.80 J
Tetrachlorethene	2.7
Trichloroethene	34
Vinyl Chloride	4.4

Constituent	15A NCAC 2L Groundwater Standards
Inorganic Non-Metals (ug/L)	
Chloride	250000
VOCs (ug/L)	
Acetone	6000
Benzene	1
Bromoform	4
Carbon Disulfide	700
Carbon Tetrachloride	0.3
Chloroethane	3000
Chloroform	70
1,1-Dichloroethane	6
1,2-Dichloroethane	0.4
1,1-Dichloroethene	350
cis-1,2-Dichloroethene	70
trans-1,2-Dichloroethene	100
Ethylbenzene	600
Isopropylbenzene	70
Methyl Acetate	7000
Methyl-Tert-Butylether	20
Methylcyclohexane	230
Tetrachloroethene	0.7
1,1,2-trichloro-1,2,2-Trifluoroethane	200000
1,1,1-Trichloroethane	200
1,1,2-Trichloroethane	5
Trichloroethene	3
Trichlorofluoromethane	2000
Vinyl Chloride	0.03
Xylenes (total)	500

LEGEND

- Tarheel AAP Site Boundary
- Drainage Ditch/Stream
- 5 Building No.
- Abandoned Well
- Monitoring Well (bedrock)
- Screen Point (2014)
- Surface Water (2014-2015)

NOTES:
1. All locations are approximate.
2. VOC results are reported in micrograms per liter (µg/L).
3. Highlighted values exceed the NCAC 2L Groundwater Standard.

0 240 480
SCALE IN FEET

PROJECTION: NAD 1983 StatePlane North Carolina FIPS 3200 Feet
AERIAL SOURCE: ESRI Online Imagery (NAIP, August 2014).

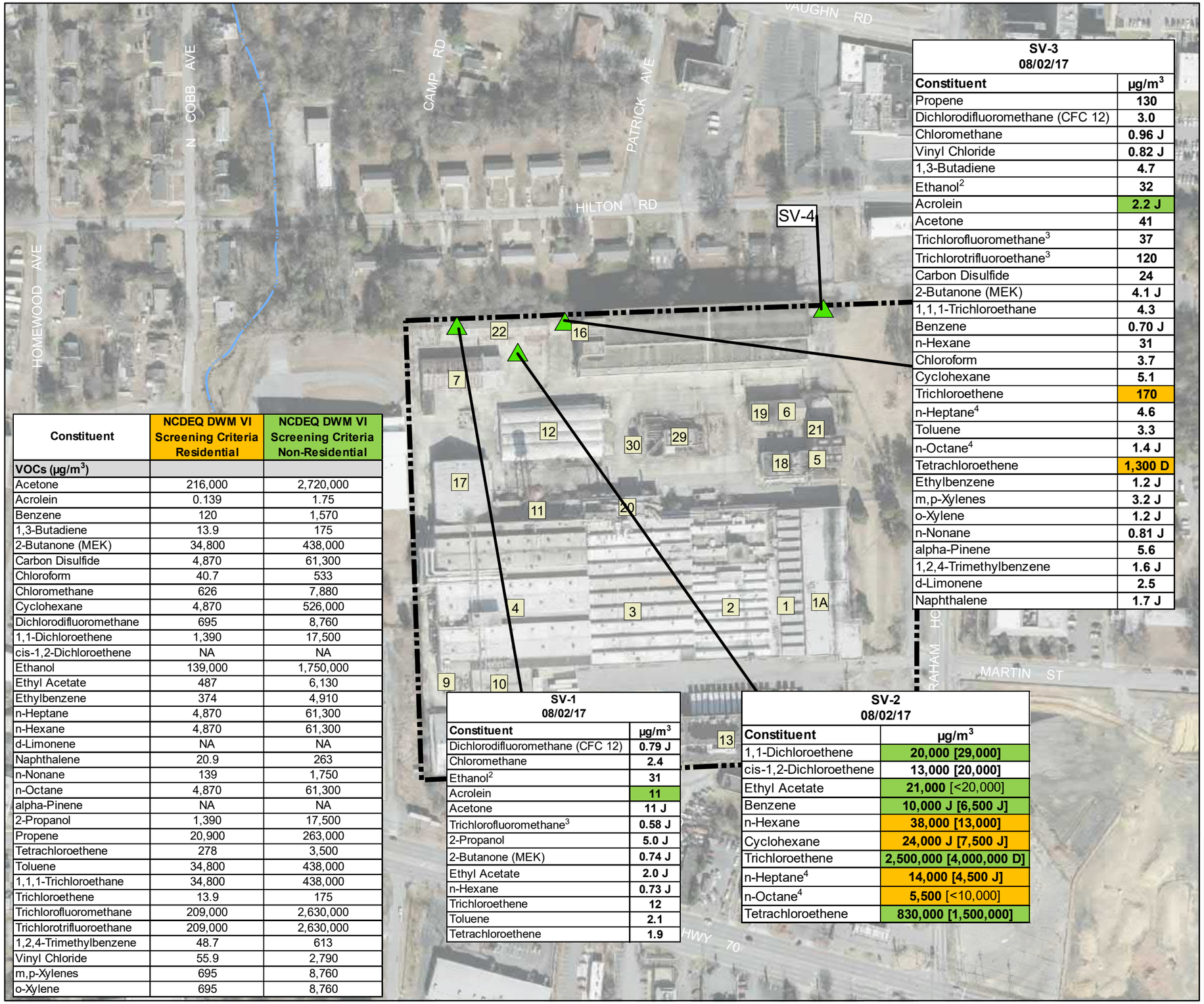
TARHEEL ARMY AMMUNITION PLANT
BURLINGTON, NORTH CAROLINA

Constituents Detected in Groundwater Wells - Bedrock (June 2017)

ARCADIS Design & Consultancy for natural and built assets

FIGURE
9

CITY:(KNOXVILLE) DIV/GROUP:(ENV/GIS) LD:(B.ALTOM) PIC:( ) APM:(S.BOSTIAN) TM:(D.RHODES) PROJECT: 10153010.0001
PATH: \\ARCADIS-US.COM\OFFICEDATA\VIRGINIA\BEACH-VA\PROJECTS\GIS\HAAF_PIKA (H17, 2017, RIFS)\TAR HEEL MISSILE PLANT\MAPDOCS\2017\NCDEQ FIGURES\FIGURE X - BEDROCK.MXD SAVED: 10/17/2017 BY: DGONG



Constituent	NCDEQ DWM VI Screening Criteria Residential	NCDEQ DWM VI Screening Criteria Non-Residential
VOCs (µg/m³)		
Acetone	216,000	2,720,000
Acrolein	0.139	1.75
Benzene	120	1,570
1,3-Butadiene	13.9	175
2-Butanone (MEK)	34,800	438,000
Carbon Disulfide	4,870	61,300
Chloroform	40.7	533
Chloromethane	626	7,880
Cyclohexane	4,870	526,000
Dichlorodifluoromethane	695	8,760
1,1-Dichloroethene	1,390	17,500
cis-1,2-Dichloroethene	NA	NA
Ethanol	139,000	1,750,000
Ethyl Acetate	487	6,130
Ethylbenzene	374	4,910
n-Heptane	4,870	61,300
n-Hexane	4,870	61,300
d-Limonene	NA	NA
Naphthalene	20.9	263
n-Nonane	139	1,750
n-Octane	4,870	61,300
alpha-Pinene	NA	NA
2-Propanol	1,390	17,500
Propene	20,900	263,000
Tetrachloroethene	278	3,500
Toluene	34,800	438,000
1,1,1-Trichloroethane	34,800	438,000
Trichloroethene	13.9	175
Trichlorofluoromethane	209,000	2,630,000
Trichlorotrifluoroethane	209,000	2,630,000
1,2,4-Trimethylbenzene	48.7	613
Vinyl Chloride	55.9	2,790
m,p-Xylenes	695	8,760
o-Xylene	695	8,760

SV-1
08/02/17

Constituent	µg/m³
Dichlorodifluoromethane (CFC 12)	0.79 J
Chloromethane	2.4
Ethanol[2]	31
Acrolein	11
Acetone	11 J
Trichlorofluoromethane[3]	0.58 J
2-Propanol	5.0 J
2-Butanone (MEK)	0.74 J
Ethyl Acetate	2.0 J
n-Hexane	0.73 J
Trichloroethene	12
Toluene	2.1
Tetrachloroethene	1.9

SV-2
08/02/17

Constituent	µg/m³
1,1-Dichloroethene	20,000 [29,000]
cis-1,2-Dichloroethene	13,000 [20,000]
Ethyl Acetate	21,000 [<20,000]
Benzene	10,000 J [6,500 J]
n-Hexane	38,000 [13,000]
Cyclohexane	24,000 J [7,500 J]
Trichloroethene	2,500,000 [4,000,000 D]
n-Heptane[4]	14,000 [4,500 J]
n-Octane[4]	5,500 [<10,000]
Tetrachloroethene	830,000 [1,500,000]

SV-3
08/02/17

Constituent	µg/m³
Propene	130
Dichlorodifluoromethane (CFC 12)	3.0
Chloromethane	0.96 J
Vinyl Chloride	0.82 J
1,3-Butadiene	4.7
Ethanol[2]	32
Acrolein	2.2 J
Acetone	41
Trichlorofluoromethane[3]	37
Trichlorotrifluoroethane[3]	120
Carbon Disulfide	24
2-Butanone (MEK)	4.1 J
1,1,1-Trichloroethane	4.3
Benzene	0.70 J
n-Hexane	31
Chloroform	3.7
Cyclohexane	5.1
Trichloroethene	170
n-Heptane[4]	4.6
Toluene	3.3
n-Octane[4]	1.4 J
Tetrachloroethene	1,300 D
Ethylbenzene	1.2 J
m,p-Xylenes	3.2 J
o-Xylene	1.2 J
n-Nonane	0.81 J
alpha-Pinene	5.6
1,2,4-Trimethylbenzene	1.6 J
d-Limonene	2.5
Naphthalene	1.7 J

LEGEND

- Tarheel AAP Site
- Drainage Ditch/Stream
- 5 Building No.
- Soil-Vapor Sampling Location

NOTES:
1. Locations are approximate.
2. All concentrations are reported in micrograms per cubic meter (ug/m³)
3. SV-2 results in parenthesis was a duplicate sample.
4. SV-4 was not sampled due to water in the screen interval.
5. Orange shaded results exceed the NCDEQ DWM Residential VI Screening Concentrations.
6. Green shaded results exceed the NCDEQ DWM Non-Residential VI Screening Concentrations.
7. NCDEQ DWM - North Carolina Department of Environmental Quality Division of Waste Management
8. J - estimated value
9. D - diluted sample

0 180 360
SCALE IN FEET

PROJECTION: NAD 1983 StatePlane North Carolina FIPS 3200 Feet
AERIAL SOURCE: ESRI Online Imagery (NAIP, August 2014).

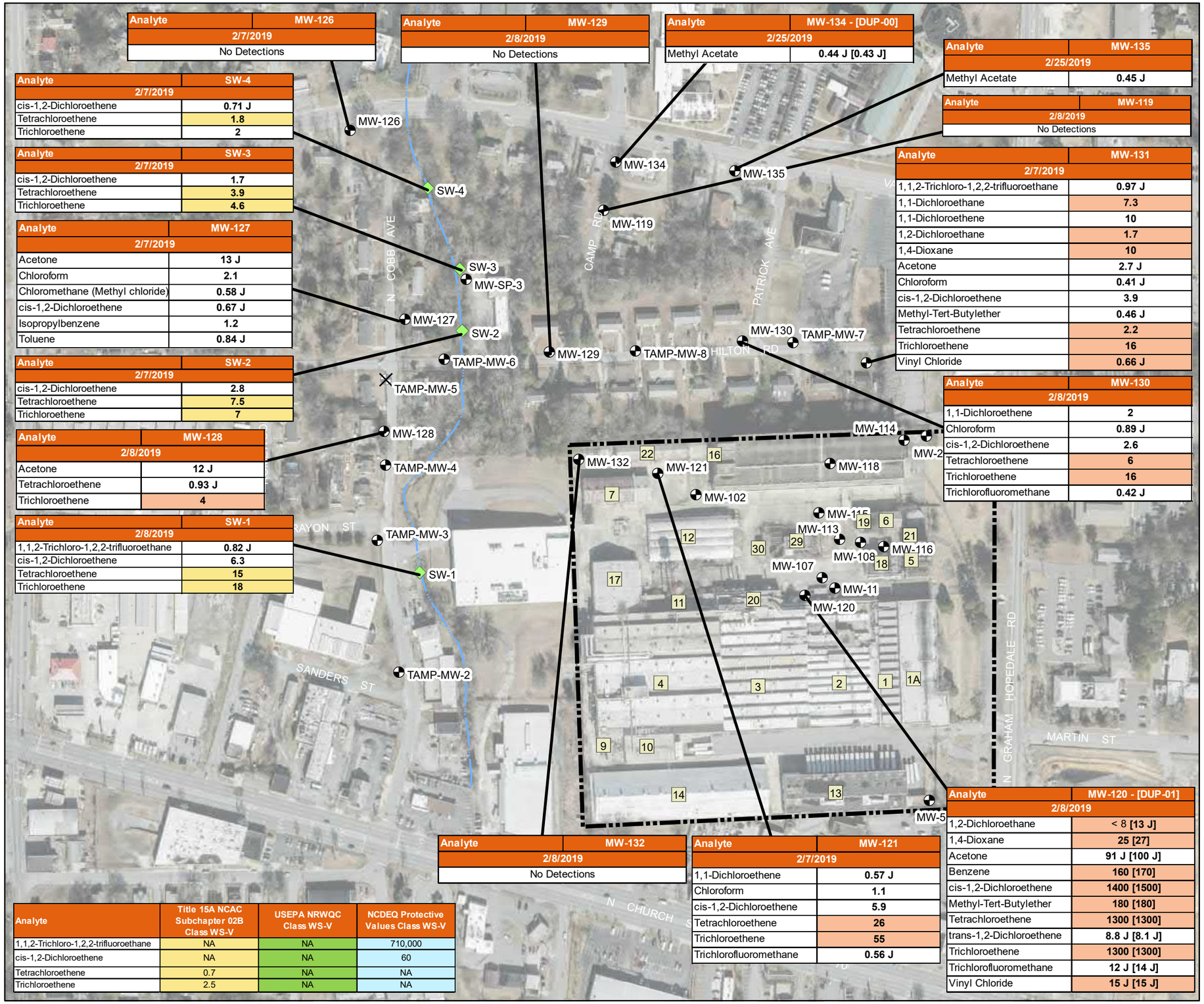
TARHEEL ARMY AMMUNITION PLANT
BURLINGTON, NORTH CAROLINA

Constituents Detected in Soil Vapor (August 2017)

PIKA ARCADIS a joint venture

FIGURE
10

PROJECT: 10153010.0001 SAVED: 3/30/2020 BY: DGONG
PATH: \\ARCADIS-US.COM\OFFICEDATA\VIRGINIABEACH-VA\PROJECTS\10153 - FORT STEWART\1010 -TAR HEEL MISSILE PLANT\MAPDOCS\2017\NCDEQ FIGURES



Analyte	MW-126
2/7/2019	
No Detections	

Analyte	MW-129
2/8/2019	
No Detections	

Analyte	MW-134 - [DUP-00]
2/25/2019	
Methyl Acetate	0.44 J [0.43 J]

Analyte	MW-135
2/25/2019	
Methyl Acetate	0.45 J

Analyte	MW-119
2/8/2019	
No Detections	

Analyte	SW-4
2/7/2019	
cis-1,2-Dichloroethene	0.71 J
Tetrachloroethene	1.8
Trichloroethene	2

Analyte	SW-3
2/7/2019	
cis-1,2-Dichloroethene	1.7
Tetrachloroethene	3.9
Trichloroethene	4.6

Analyte	MW-127
2/7/2019	
Acetone	13 J
Chloroform	2.1
Chloromethane (Methyl chloride)	0.58 J
cis-1,2-Dichloroethene	0.67 J
Isopropylbenzene	1.2
Toluene	0.84 J

Analyte	SW-2
2/7/2019	
cis-1,2-Dichloroethene	2.8
Tetrachloroethene	7.5
Trichloroethene	7

Analyte	MW-128
2/8/2019	
Acetone	12 J
Tetrachloroethene	0.93 J
Trichloroethene	4

Analyte	SW-1
2/8/2019	
1,1,2-Trichloro-1,2,2-trifluoroethane	0.82 J
cis-1,2-Dichloroethene	6.3
Tetrachloroethene	15
Trichloroethene	18

Analyte	MW-131
2/7/2019	
1,1,2-Trichloro-1,2,2-trifluoroethane	0.97 J
1,1-Dichloroethane	7.3
1,1-Dichloroethene	10
1,2-Dichloroethane	1.7
1,4-Dioxane	10
Acetone	2.7 J
Chloroform	0.41 J
cis-1,2-Dichloroethene	3.9
Methyl-Tert-Butylether	0.46 J
Tetrachloroethene	2.2
Trichloroethene	16
Vinyl Chloride	0.66 J

Analyte	MW-130
2/8/2019	
1,1-Dichloroethene	2
Chloroform	0.89 J
cis-1,2-Dichloroethene	2.6
Tetrachloroethene	6
Trichloroethene	16
Trichlorofluoromethane	0.42 J

Analyte	MW-132
2/8/2019	
No Detections	

Analyte	MW-121
2/7/2019	
1,1-Dichloroethene	0.57 J
Chloroform	1.1
cis-1,2-Dichloroethene	5.9
Tetrachloroethene	26
Trichloroethene	55
Trichlorofluoromethane	0.56 J

Analyte	MW-120 - [DUP-01]
2/8/2019	
1,2-Dichloroethane	< 8 [13 J]
1,4-Dioxane	25 [27]
Acetone	91 J [100 J]
Benzene	160 [170]
cis-1,2-Dichloroethene	1400 [1500]
Methyl-Tert-Butylether	180 [180]
Tetrachloroethene	1300 [1300]
trans-1,2-Dichloroethene	8.8 J [8.1 J]
Trichloroethene	1300 [1300]
Trichlorofluoromethane	12 J [14 J]
Vinyl Chloride	15 J [15 J]

Analyte	Title 15A NCAC Subchapter 02B Class WS-V	USEPA NRWQC Class WS-V	NCDEQ Protective Values Class WS-V
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	710,000
cis-1,2-Dichloroethene	NA	NA	60
Tetrachloroethene	0.7	NA	NA
Trichloroethene	2.5	NA	NA

LEGEND

- Tarheel AAP Site Boundary
- Drainage Ditch/Stream
- 5 Building No.
- Destroyed Monitoring Well
- Monitoring Well (Saprolite)
- Surface Water Sample Location

Analyte	Title 15A NCAC Subchapter 2L Groundwater Standard (µg/L)[a]
1,1,1-Trichloroethane	200
1,1,2,2-Tetrachloroethane	0.2
1,1,2-Trichloro-1,2,2-trifluoroethane	200,000
1,1,2-Trichloroethane	5
1,1-Dichloroethane	6
1,1-Dichloroethene	350
1,2,4-Trichlorobenzene	70
1,2-Dibromo-3-Chloropropane	0.04
1,2-Dibromoethane	0.02
1,2-Dichlorobenzene	20
1,2-Dichloroethane	0.4
1,2-Dichloropropane	0.6
1,3-Dichlorobenzene	200
1,4-Dichlorobenzene	6
1,4-Dioxane	3
2-Butanone	4,000
2-Hexanone	7.6 [b]
4-Methyl-2-Pentanone	1260 [b]
Acetone	6,000
Acrolein	N/A
Benzene	1
Bromodichloromethane	0.6
Bromoform	4
Bromomethane	1.5 [b]
Carbon Disulfide	700
Carbon Tetrachloride	0.3
Chloride	250,000
Chlorobenzene	50
Chloroethane	3,000
Chloroform	70
Chloromethane (Methyl chloride)	3
cis-1,2-Dichloroethene	70
cis-1,3-Dichloropropene	0.4
Cyclohexane	2,600 [b]
Dibromochloromethane	0.4
Dichlorofluoromethane	1,000
Ethylbenzene	600
Isopropylbenzene	70
Methyl Acetate	7,000
Methylcyclohexane	230
Methylene chloride	5
Methyl-Tert-Butylether	20
Styrene	70
Tetrachloroethene	0.7
Toluene	600
trans-1,2-Dichloroethene	100
trans-1,3-Dichloropropene	0.4
Trichloroethene	3
Trichlorofluoromethane	2,000
Vinyl Chloride	0.03
Xylenes (total)	500

0 240 480

SCALE IN FEET

PROJECTION: NAD 1983 StatePlane North Carolina FIPS 3200 Feet
AERIAL SOURCE: ESRI Online Imagery (NAIP, August 2014).

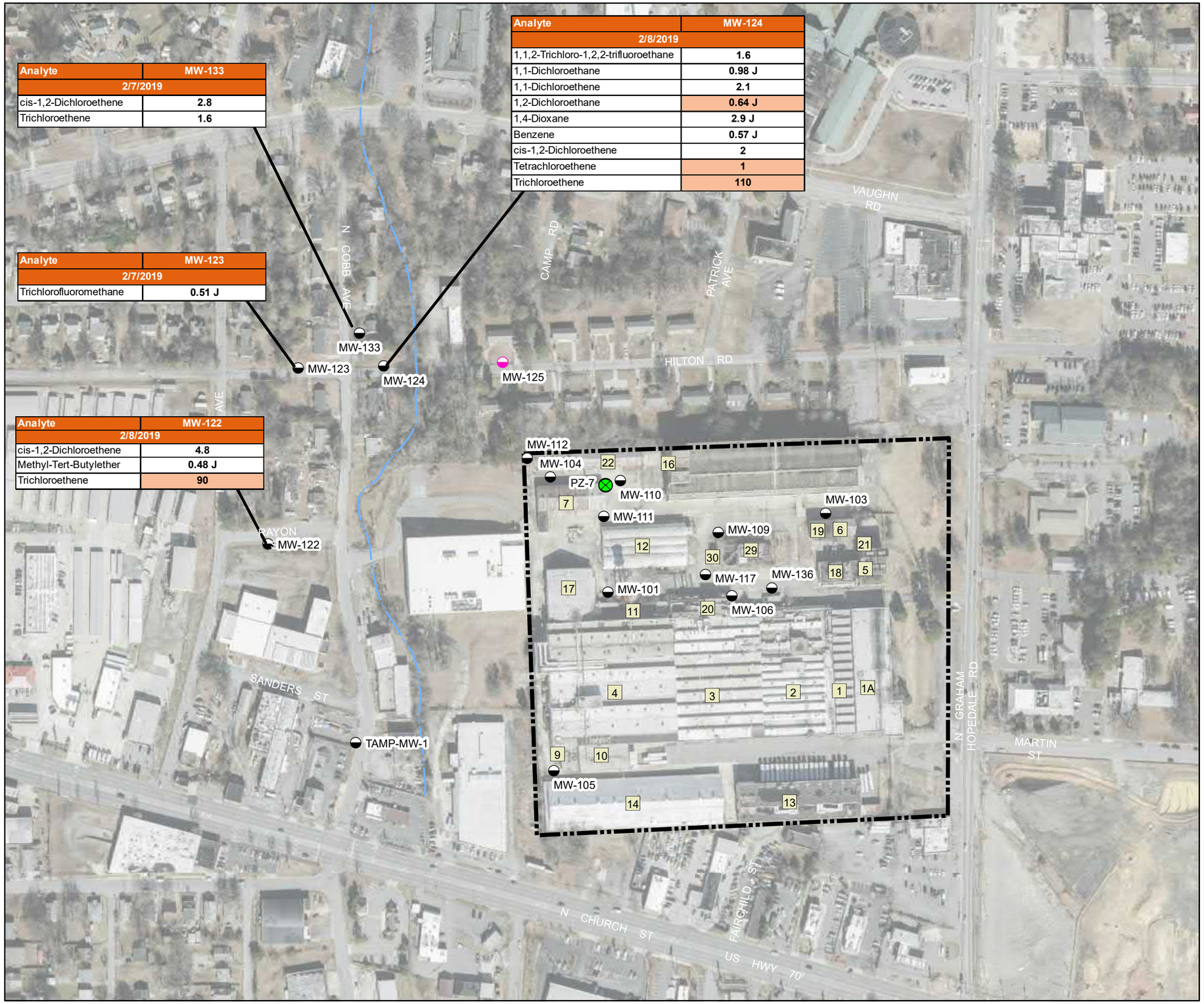
TARHEEL ARMY AMMUNITION PLANT
BURLINGTON, NORTH CAROLINA

Constituents Detected in Groundwater - Saprolite (February 2019)

PIKA ARCADIS

FIGURE
11

PROJECT: 10153010.0001 SAVED: 3/26/2020 BY: DGONG
PATH: \\ARCADIS-US.COM\OFFICEDATA\VIRGINIABEACH-VA\PROJECTS\10153 - FORT STEWART\010 -TAR HEEL MISSILE PLANT\MAPDOCS\2017\NCDEQ FIGURES



Analyte	MW-133
2/7/2019	
cis-1,2-Dichloroethene	2.8
Trichloroethene	1.6

Analyte	MW-123
2/7/2019	
Trichlorofluoromethane	0.51 J

Analyte	MW-122
2/8/2019	
cis-1,2-Dichloroethene	4.8
Methyl-Tert-Butylether	0.48 J
Trichloroethene	90

Analyte	MW-124
2/8/2019	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.6
1,1-Dichloroethane	0.98 J
1,1-Dichloroethene	2.1
1,2-Dichloroethane	0.64 J
1,4-Dioxane	2.9 J
Benzene	0.57 J
cis-1,2-Dichloroethene	2
Tetrachloroethene	1
Trichloroethene	110

LEGEND

- Tarheel AAP Site Boundary
- Drainage Ditch/Stream
- 5 Building No.
- Monitoring Well (Bedrock)
- Piezometer
- Abandoned Well

Analyte	Title 15A NCAC Subchapter 2L Groundwater Standard (µg/L)[a]
1,1,1-Trichloroethane	200
1,1,2,2-Tetrachloroethane	0.2
1,1,2-Trichloro-1,2,2-trifluoroethane	200,000
1,1,2-Trichloroethane	5
1,1-Dichloroethane	6
1,1-Dichloroethene	350
1,2,4-Trichlorobenzene	70
1,2-Dibromo-3-Chloropropane	0.04
1,2-Dibromoethane	0.02
1,2-Dichlorobenzene	20
1,2-Dichloroethane	0.4
1,2-Dichloropropane	0.6
1,3-Dichlorobenzene	200
1,4-Dichlorobenzene	6
1,4-Dioxane	3
2-Butanone	4,000
2-Hexanone	7.6 [b]
4-Methyl-2-Pentanone	1260 [b]
Acetone	6,000
Acrolein	N/A
Benzene	1
Bromodichloromethane	0.6
Bromoform	4
Bromomethane	1.5 [b]
Carbon Disulfide	700
Carbon Tetrachloride	0.3
Chloride	250,000
Chlorobenzene	50
Chloroethane	3,000
Chloroform	70
Chloromethane (Methyl chloride)	3
cis-1,2-Dichloroethene	70
cis-1,3-Dichloropropene	0.4
Cyclohexane	2,600 [b]
Dibromochloromethane	0.4
Dichlorofluoromethane	1,000
Ethylbenzene	600
Isopropylbenzene	70
Methyl Acetate	7,000
Methylcyclohexane	230
Methylene chloride	5
Methyl-Tert-Butylether	20
Styrene	70
Tetrachloroethene	0.7
Toluene	600
trans-1,2-Dichloroethene	100
trans-1,3-Dichloropropene	0.4
Trichloroethene	3
Trichlorofluoromethane	2,000
Vinyl Chloride	0.03
Xylenes (total)	500

0 240 480

SCALE IN FEET

PROJECTION: NAD 1983 StatePlane North Carolina FIPS 3200 Feet
AERIAL SOURCE: ESRI Online Imagery (NAIP, August 2014).

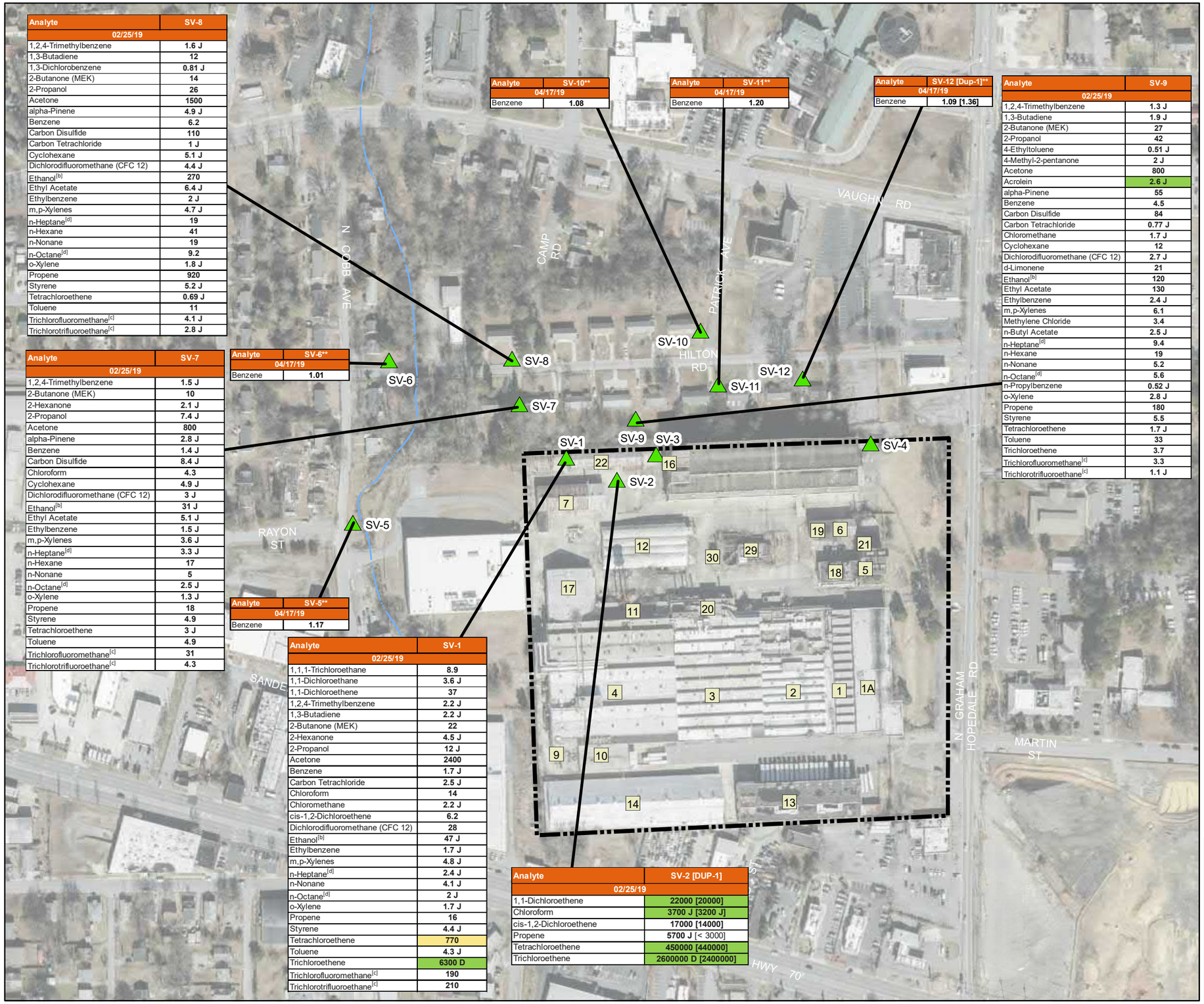
TARHEEL ARMY AMMUNITION PLANT
BURLINGTON, NORTH CAROLINA

Constituents Detected in Groundwater - Bedrock (February 2019)

PIKA ARCADIS a joint venture

FIGURE
12

PROJECT: 10153010.0001 SAVED: 3/26/2020 BY: DGONG
PATH: \\ARCADIS-US.COM\OFFICEDATA\VIRGINIABEACH-VA\PROJECTS\10153 - FORT STEWART\010 -TAR HEEL MISSILE PLANT\MAPDOCS\2017\NCDEQ FIGURES



Analyte	SV-8
02/25/19	
1,2,4-Trimethylbenzene	1.6 J
1,3-Butadiene	12
1,3-Dichlorobenzene	0.81 J
2-Butanone (MEK)	14
2-Propanol	26
Acetone	1500
alpha-Pinene	4.9 J
Benzene	6.2
Carbon Disulfide	110
Carbon Tetrachloride	1 J
Cyclohexane	5.1 J
Dichlorodifluoromethane (CFC 12)	4.4 J
Ethanol[b]	270
Ethyl Acetate	6.4 J
Ethylbenzene	2 J
m,p-Xylenes	4.7 J
n-Heptane[d]	19
n-Hexane	41
n-Nonane	19
n-Octane[d]	9.2
o-Xylene	1.8 J
Propene	920
Styrene	5.2 J
Tetrachloroethene	0.69 J
Toluene	11
Trichlorofluoromethane[c]	4.1 J
Trichlorotrifluoroethane[c]	2.8 J

Analyte	SV-7
02/25/19	
1,2,4-Trimethylbenzene	1.5 J
2-Butanone (MEK)	10
2-Hexanone	2.1 J
2-Propanol	7.4 J
Acetone	800
alpha-Pinene	2.8 J
Benzene	1.4 J
Carbon Disulfide	8.4 J
Chloroform	4.3
Cyclohexane	4.9 J
Dichlorodifluoromethane (CFC 12)	3 J
Ethanol[b]	31 J
Ethyl Acetate	5.1 J
Ethylbenzene	1.5 J
m,p-Xylenes	3.6 J
n-Heptane[d]	3.3 J
n-Hexane	17
n-Nonane	5
n-Octane[d]	2.5 J
o-Xylene	1.3 J
Propene	18
Styrene	4.9
Tetrachloroethene	3 J
Toluene	4.9
Trichlorofluoromethane[c]	31
Trichlorotrifluoroethane[c]	4.3

Analyte	SV-6**
04/17/19	
Benzene	1.01

Analyte	SV-5**
04/17/19	
Benzene	1.17

Analyte	SV-1
02/25/19	
1,1,1-Trichloroethane	8.9
1,1-Dichloroethane	3.6 J
1,1-Dichloroethene	37
1,2,4-Trimethylbenzene	2.2 J
1,3-Butadiene	2.2 J
2-Butanone (MEK)	22
2-Hexanone	4.5 J
2-Propanol	12 J
Acetone	2400
Benzene	1.7 J
Carbon Tetrachloride	2.5 J
Chloroform	14
Chloromethane	2.2 J
cis-1,2-Dichloroethene	6.2
Dichlorodifluoromethane (CFC 12)	28
Ethanol[b]	47 J
Ethylbenzene	1.7 J
m,p-Xylenes	4.8 J
n-Heptane[d]	2.4 J
n-Nonane	4.1 J
n-Octane[d]	2 J
o-Xylene	1.7 J
Propene	16
Styrene	4.4 J
Tetrachloroethene	770
Toluene	4.3 J
Trichloroethene	6300 D
Trichlorofluoromethane[c]	190
Trichlorotrifluoroethane[c]	210

Analyte	SV-2 [DUP-1]
02/25/19	
1,1-Dichloroethene	22000 [20000]
Chloroform	3700 J [3200 J]
cis-1,2-Dichloroethene	17000 [14000]
Propene	5700 J [< 3000]
Tetrachloroethene	450000 [440000]
Trichloroethene	2600000 D [2400000]

Analyte	SV-10**
04/17/19	
Benzene	1.08

Analyte	SV-11**
04/17/19	
Benzene	1.20

Analyte	SV-12 [Dup-1]**
04/17/19	
Benzene	1.09 [1.36]

Analyte	SV-9
02/25/19	
1,2,4-Trimethylbenzene	1.3 J
1,3-Butadiene	1.9 J
2-Butanone (MEK)	27
2-Propanol	42
4-Ethyltoluene	0.51 J
4-Methyl-2-pentanone	2 J
Acetone	800
Acrolein	2.6 J
alpha-Pinene	55
Benzene	4.5
Carbon Disulfide	84
Carbon Tetrachloride	0.77 J
Chloromethane	1.7 J
Cyclohexane	12
Dichlorodifluoromethane (CFC 12)	2.7 J
d-Limonene	21
Ethanol[b]	120
Ethyl Acetate	130
Ethylbenzene	2.4 J
m,p-Xylenes	6.1
Methylene Chloride	3.4
n-Butyl Acetate	2.5 J
n-Heptane[d]	9.4
n-Hexane	19
n-Nonane	5.2
n-Octane[d]	5.6
n-Propylbenzene	0.52 J
o-Xylene	2.8 J
Propene	180
Styrene	5.5
Tetrachloroethene	1.7 J
Toluene	33
Trichloroethene	3.7
Trichlorofluoromethane[c]	3.3
Trichlorotrifluoroethane[c]	1.1 J

LEGEND

- Tarheel AAP Site
- 5 Drainage Ditch/Stream
- Building No.
- Soil Vapor Sampling Location

NOTES:
** Beacon Sampler used instead of suma canister
Could not sample SV-3 or SV-4 due to shallow groundwater

Analyte	NCDEQ DWM VI Screening Level Concentrations[a]	
	Residential	Non-residential
1,1,1-Trichloroethane	35,000	440,000
1,1-Dichloroethane	580	7,700
1,1-Dichloroethene	1,400	18,000
1,2,4-Trimethylbenzene	420	5,300
1,3-Butadiene	14	180
1,3-Dichlorobenzene	1,400	18,000
2-Butanone (MEK)	35,000	440,000
2-Hexanone	210	2,600
2-Propanol	1,400	18,000
4-Ethyltoluene	NA	NA
4-Methyl-2-pentanone	21,000	260,000
Acetone	220,000	2,700,000
Acrolein	0.140	1.80
alpha-Pinene	NA	NA
Benzene	120	1,600
Carbon Disulfide	4,900	61,000
Carbon Tetrachloride	160	2,000
Chloroform	41	530
Chloromethane	630	7,900
cis-1,2-Dichloroethene	NA	NA
Cyclohexane	42,000	530,000
Dichlorodifluoromethane (CFC 12)	700	8,800
d-Limonene	NA	NA
Ethanol[b]	140,000	1,800,000
Ethyl Acetate	490	6,100
Ethylbenzene	370	4,900
m,p-Xylenes	700	8,800
Methylene Chloride	4,200	53,000
Naphthalene	21	260
n-Butyl Acetate	NA	NA
n-Heptane[d]	2,800	35,000
n-Hexane	4,900	61,000
n-Nonane	140	1,800
n-Octane[d]	NA	NA
n-Propylbenzene	7,000	88,000
o-Xylene	700	8,800
Propene	21,000	260,000
Styrene	7,000	88,000
Tetrachloroethene	280	3,500
Toluene	35,000	440,000
Trichloroethene	14	180
Trichlorofluoromethane[c]	NA	NA
Trichlorotrifluoroethane[c]	35,000	440,000
Vinyl Chloride	56	2,800

0 200 400
SCALE IN FEET

PROJECTION: NAD 1983 StatePlane North Carolina FIPS 3200 Feet
AERIAL SOURCE: ESRI Online Imagery (NAIP, August 2014).

TARHEEL ARMY AMMUNITION PLANT
BURLINGTON, NORTH CAROLINA

Constituents Detected in Soil Vapor
(February/April 2019)

PIKA ARCADIS a joint venture

FIGURE
13

PROJECT: 10153010.0001 SAVED: 3/27/2020 BY: DGONG
PATH: \\ARCADIS-US.COM\OFFICEDATA\VIRGINIABEACH-VA\PROJECTS\10153 - FORT STEWART\010 -TAR HEEL MISSILE PLANT\MAPDOCS\2017\NCDEQ FIGURES

Appendix E

Excerpts from Historical Remedial Action Reports

SITE INVESTIGATION AT A FORMER GASOLINE UNDERGROUND STORAGE TANK LOCATION AT THE AT&T TARHEEL ARMY MISSILE PLANT BURLINGTON, NORTH CAROLINA

Prepared for:

AT&T
Guilford Center
P.O. Box 25000
Greensboro, North Carolina 27420-5000

Prepared by:

ROY F. WESTON, INC.
4020 Westchase Boulevard
Suite 375
Raleigh, North Carolina 27607

Work Order No. 2400-25-01

June 1992

SECTION 2

RELEASE EVENT INFORMATION

On 9 April 1992, a small (approximately 100-gallon capacity) gasoline UST was excavated and removed by AT&T from the outside northeast corner of Building 3 at the site (Figure 2-1). The removal included the UST, vent pipe and a single fuel line leading from the UST. The UST was approximately 24 inches in diameter, and was set approximately 6 inches below ground surface (BGS). Upon removal, an inspection of the tank indicated that holes were present along the top, sides, and bottom of the tank, and that the tank appeared to be empty.

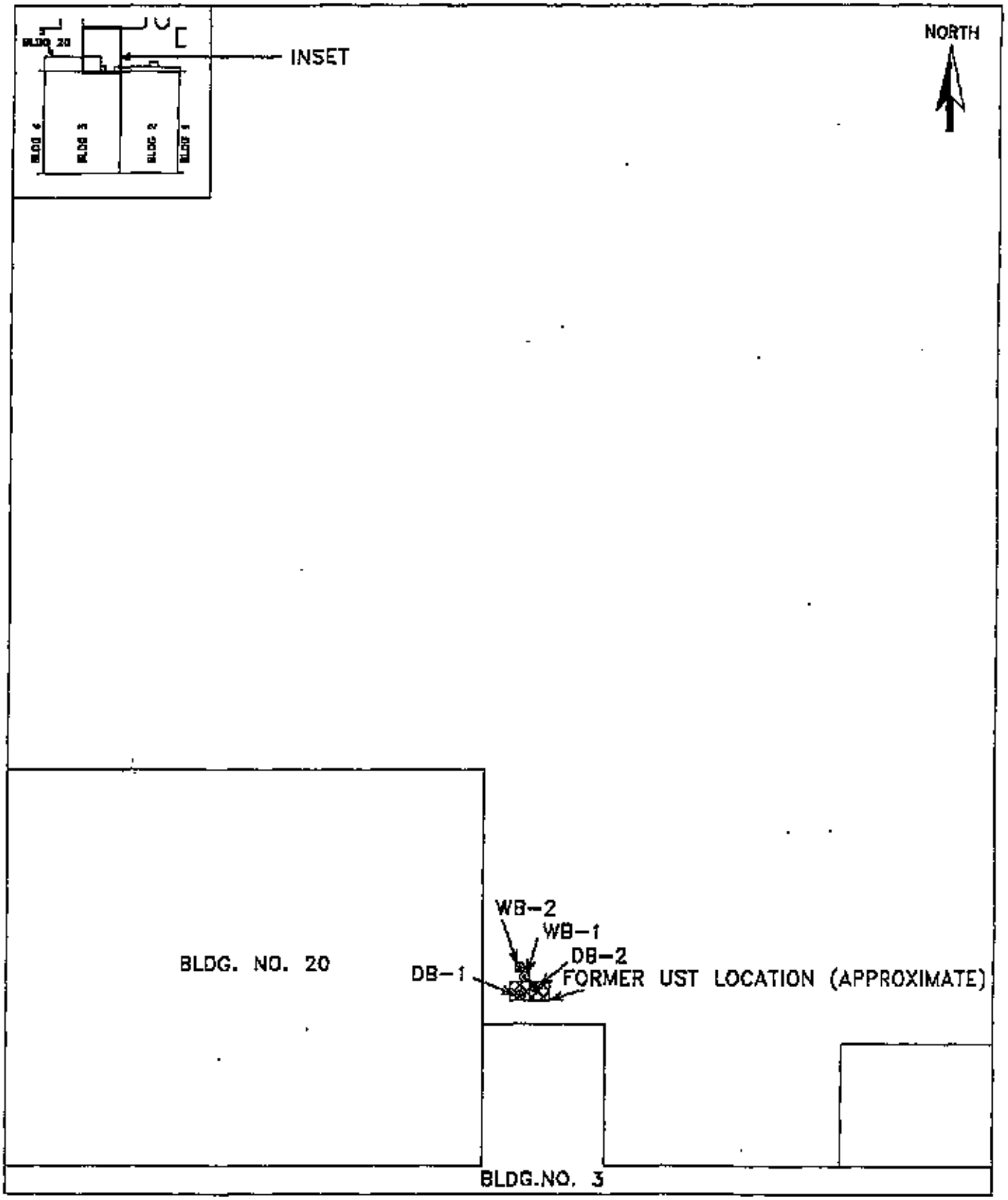
A gasoline odor was detected in the soils of the excavation pit, but no free product was observed. Field monitoring equipment (an OVA) produced a strong (>1,000 parts per million, ppm) response on a headspace sample of this soil. Soil samples were collected from the bottom and side of the pit; these soil samples were submitted for analysis for Total Petroleum Hydrocarbons (TPH) and benzene, toluene, ethylbenzene and total xylene isomers (BTEX). Chlorobenzenes were also quantified in the BTEX analytic suite; all chlorobenzenes were below detection limits. GC FID was specified for the TPH analyses, and Method 602 was specified for the BTEX analyses. Table 2-1 presents the results of these analyses.

Following removal of the UST, no additional excavation was conducted. Consequently, the excavation pit only extended about 3 feet BGS. At the surface, pavement had been removed across an area approximately 6 feet square. Loose soil from the excavation was placed back into the pit, and the upper 6 to 12 inches were backfilled with gravel. The tank and lines were disposed of by others; no soil was removed for disposal from the pit.

On the morning of 10 April 1992, AT&T notified DEHNR of the apparent gasoline release from the former UST.

The tank was listed on AT&T's records as a 110-gallon gasoline tank. Measurements of the tank on 9 April 1992 indicated a capacity of 99 gallons. The tank provided fuel to operate an emergency backup power generator, and reportedly had not been filled with gasoline for the past three years. Only gasoline was thought to have been stored in the former UST.

From a review of data collected from other, unrelated activities at the site as presented in a draft report, ground water appeared to be approximately 18 feet BGS. Ground water elevation data from existing monitoring wells installed at the site was inconclusive with respect to estimating ground water flow direction, but suggested that flow is to the north-northwest. The presence of BTEX compounds was detected in soil samples collected from a soil boring advanced near the former UST. Three soil samples collected from this borehole (at depths ranging from ground surface to 15 feet BGS) exhibited BTEX concentrations ranging from approximately 10 to 90 micrograms per kilogram (ug/kg). No free product or BTEX compounds were detected in ground water samples collected from



SCALE (Feet)
0 10
5 15

FIGURE	4-1
DATE	9/22/92
REVISION	0
DRAWN BY	M.T., W.M.
FILE	ATTFIG4

SOIL BORING LOCATIONS

AT&T
TARHEEL ARMY MISSILE PLANT
BURLINGTON, NORTH CAROLINA

TABLE 5–1

RESULTS OF ANALYSES OF SOIL SAMPLES COLLECTED DURING FIELD INVESTIGATION

SAMPLE NO		WB–01–05	WB–01–10	WB–01–15
SAMPLE DEPTH		5 FEET	10 FEET	15 FEET
SAMPLE DATE		5/6/92	5/6/92	5/6/92
PARAMETER	METHOD			
Lead	~~8020~~ 6010	20,900	7,400	7,400
Benzene	8020	< 300	< 66	< 0.33
Toluene	8020	7,500	380	1.40
Ethybenzene	8020	1,100	2,200	0.75
Xylenes (Total)	8020	51,000	9,200	3.20
Gasoline *	Modified 8015	770,000	210,000	< 33

Note: Units are micrograms per kilogram (ug/kg).

< indicates that material was analyzed for but not detected. The number is the minimum quantitation limit.

* M. C. L.: Maximum Concentration Level. This is allowed to range as high as 85,000 ug/kg for petroleum products under certain conditions.

— Gasoline was analyzed for by Gas Chromatograph FID method 8015 — Modified for Gasoline; the single concentration representing total gasoline is derived from quantation of areas for those peaks where a match is observed between the sample and a gasoline reference standard (run prior to the sample's analysis).

Federal Remediation Branch

143

Your Name:	DJL
EPA ID:	NC7210020544
Facility Name:	TAMP
Document Group:	FRB CERCLA (FRCERCLA)
Document Type:	Preliminary Assessment/Site Inspection (PA/SI)
Description:	Report -Initial Site characterization Report Underground Storage Tanks 5, 6, and 7-
Date of Doc:	4/11/1995
Author of Doc:	Roy F. Weston, Inc.
Box No:	10004

File Room Use Only

NC7210020544

	Month	Day	Year
Date Recieved by File Room:			
Date Scanned:			

Scanner's Initials:

WESTON

RECEIVED
AUG 28 1995
SUPERFUND SECTION

INITIAL SITE CHARACTERIZATION REPORT
UNDERGROUND STORAGE TANKS 5, 6, AND 7
TARHEEL ARMY MISSILE PLANT
BURLINGTON, NORTH CAROLINA

Prepared By:

Roy F. Weston, Inc.
1000 Perimeter Park Boulevard, Suite E
Morrisville, North Carolina

11 April 1995

SECTION 2.0

RELEASE EVENT INFORMATION

2.1 TANK INFORMATION

The three USTs that were removed on 18 January 1995 were located near Building 19 (Figure 2-1). They were installed in 1984, replacing tanks previously in place which had been installed by the United State Army Corps of Engineers for MICOM. No information is available on the previous tanks. From discussions with personnel at the facility who were present at the time the older tanks were removed, there were no unusual conditions observed at the time the former tanks were replaced.

Each of the three recently removed USTs was of 4,000 gallon capacity, constructed of asphalt coated steel and equipped with a cathodic protection system. Tank 7 was used to store diesel fuel. Tanks 5 and 6 were used to store gasoline. One of these gasoline tanks had stored leaded gasoline, although it is unknown at this time which of the two gasoline USTs had contained leaded gasoline.

In 1992, tank tightness tests were conducted on all three USTs, and all three tested tight. Reportedly, no fuel has been added or removed since the tests were conducted. Additionally, it is reported that monthly gauging of product levels conducted in 1994 did not indicate any significant variations in the levels of the tanks' contents. At the time the USTs were removed, the product levels were measured at 3½ inches in UST 5, 5¾ inches in UST 6, and 2¼ inches in UST 7.

Records of petroleum USTs maintained by DEHNR-UST originally indicated that AT&T Technologies, Inc. was the owner of all tanks at the TAMP. This information was in error, as AT&T leased but never owned the property; the tanks were included under the facility lease and remained with the property when AT&T's lease expired in March 1992. This error was corrected in a letter dated 4 February 1993, submitted to DEHNR-UST by AT&T. Attached to this letter was the annual bill for tank fees, marked to reflect the corrected ownership of the tanks. The February 1993 letter (with attached bill) is presented in Appendix A.

2.2 RELEASE EVENT DETECTION

Acting at the direction of MICOM, AT&T undertook closure of USTs 5, 6 and 7 by removal of the tanks and associated piping and dispensing stations. The removal effort was conducted by Four Seasons, Inc. and Aquaterra, Inc., under subcontract to AT&T.

On 18 January 1995, USTs 5, 6, and 7 were removed and soil was excavated in the vicinity of the tanks (Figure 2-2). Prior to excavation of the tanks, the small amounts of product in the

tanks (discussed previously) were removed from the tanks with a vacuum truck, and vapors in the tanks were purged. Concrete pavement in the area was cut and removed.

A backhoe was used to excavate soils overlying the tanks, and to lift the tanks from the ground. The cylindrical tanks were each approximately 25 feet in length and 5 feet in diameter, and were buried such that the top of the tanks were approximately four feet below ground surface. A visual inspection of the tanks suggested all were in good condition, with no corrosion in evidence. The tanks were removed from the site under manifest on 18 January 1995 and were scrapped by D.H. Griffin Wrecking Company, Greensboro, North Carolina, on 25 January 1995.

During the removal effort, field screening of the ambient atmosphere in the work area and of soils in the vicinity of the tanks was conducted using a portable photoionization detector (PID). Reportedly, field screening of soils from the sidewalls of the tank pit produced positive responses on the PID ranging from 2.5 to 162 parts per million (ppm VOCs, generally representative of total ionizable volatile organic compounds, volume/volume basis, with the field instrument calibrated to a standard calibration gas such as isobutylene).

Based on field screening data, it was considered possible that petroleum fuel had been released to the environment. Excavation was continued to either side of the tanks to the extent practical and to a depth of approximately 10-to-12 feet below ground surface (BGS) (the maximum depth available using the equipment present on site). Reportedly, field screening of the soils at the base of the excavation produced PID responses ranging from 0.2 ppm to 1778 ppm VOCs. Screening of the atmosphere within the pit indicated that explosive vapors were not present. Groundwater was not observed at the base of the excavation. Approximately 315 tons of excavated soils were stockpiled on site by placing on and covering over with plastic sheeting.

On 18 January 1995, nine soil samples were collected from the base of the excavation and one soil sample was collected in the vicinity of the distribution lines (Figure 2-3). The samples were submitted for analysis for Total Petroleum Hydrocarbons by Method 8015 - Modified for Diesel (TPH - Diesel) and Total Petroleum Hydrocarbons by Method 8015 - Modified for Gasoline (TPH - Gasoline). Additionally, two samples of the stockpiled soil were collected and analyzed for TPH - Diesel and TPH - Gasoline for disposal characterization purposes. On 19 January 1995, eight additional soil samples were collected from along the sidewalls of the excavation (two on each sidewall, at a depth of approximately nine feet BGS, corresponding to the estimated depth of the bottom of the tanks, Figure 2-3). These samples were submitted for TPH - Diesel, TPH - Gasoline, and Total Lead (Method 6010). Backfilling of the excavated pit with crushed stone and clean soil (based on pH and metals analyses previously conducted on the fill soil) was then initiated.

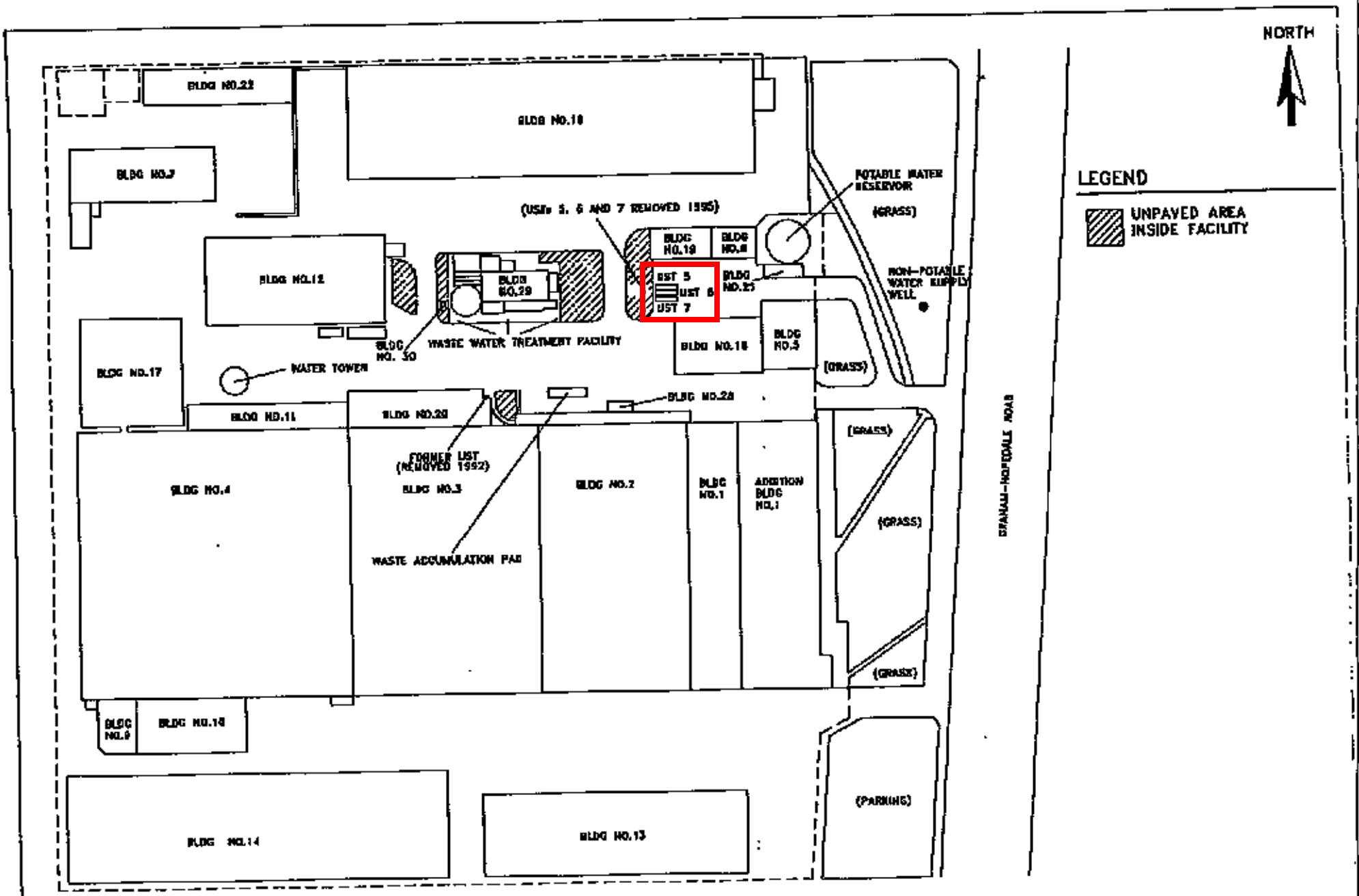
On 18 January 1995, AT&T telephoned MICOM to notify them of the field screening data. Reportedly, at approximately 11 AM Central Standard Time, 19 January 1995, MICOM telephoned DEHNR, Division of Environmental Management, Groundwater Section, Winston-Salem Region, to inform DEHNR of the events surrounding the removal of the USTs, thereby

complying with the DEHNR 24 hour notification requirement associated with suspected releases from USTs.

On 26 January 1995, AT&T received laboratory results for the TPH - Gasoline and TPH - Diesel analyses of the soil samples collected from the walls and base of the pit. (Results of the lead analyses were not available at that time.) The samples collected from the sidewalls indicated that TPH - Gasoline and TPH - Diesel were not present at detectable concentrations, with detection limits of less than 10 parts per million (ppm) and 20 ppm, respectively. Samples collected from the base of the pit did not detect TPH - Diesel at a detection limit of less than 20 ppm. However, TPH - Gasoline was detected in five of the nine pit-bottom soil samples, at concentrations ranging from 33 ppm to 2010 ppm, with the maximum concentration observed in the sample collected from beneath the center of UST Number 6. (Detection limits for the four samples not detecting TPH - Gasoline were reported at less than 10 ppm). Because some of the soil samples exhibited TPH - Gasoline concentrations above the DEHNR reportable limit of 10 ppm, the data confirmed the suspected release. Further discussion of the chemical analytical data is presented in Section 5.

On the afternoon of 26 January 1995, following review of the soil analytical data, AT&T contacted MICOM by telephone and telecopied the laboratory report to MICOM. MICOM advised AT&T that they would notify DEHNR of the confirmed release. The notification was conducted by telephone and telecopy on the morning of 27 January 1995, thereby complying with the DEHNR 24 hour notification requirement associated with confirmed releases from USTs.

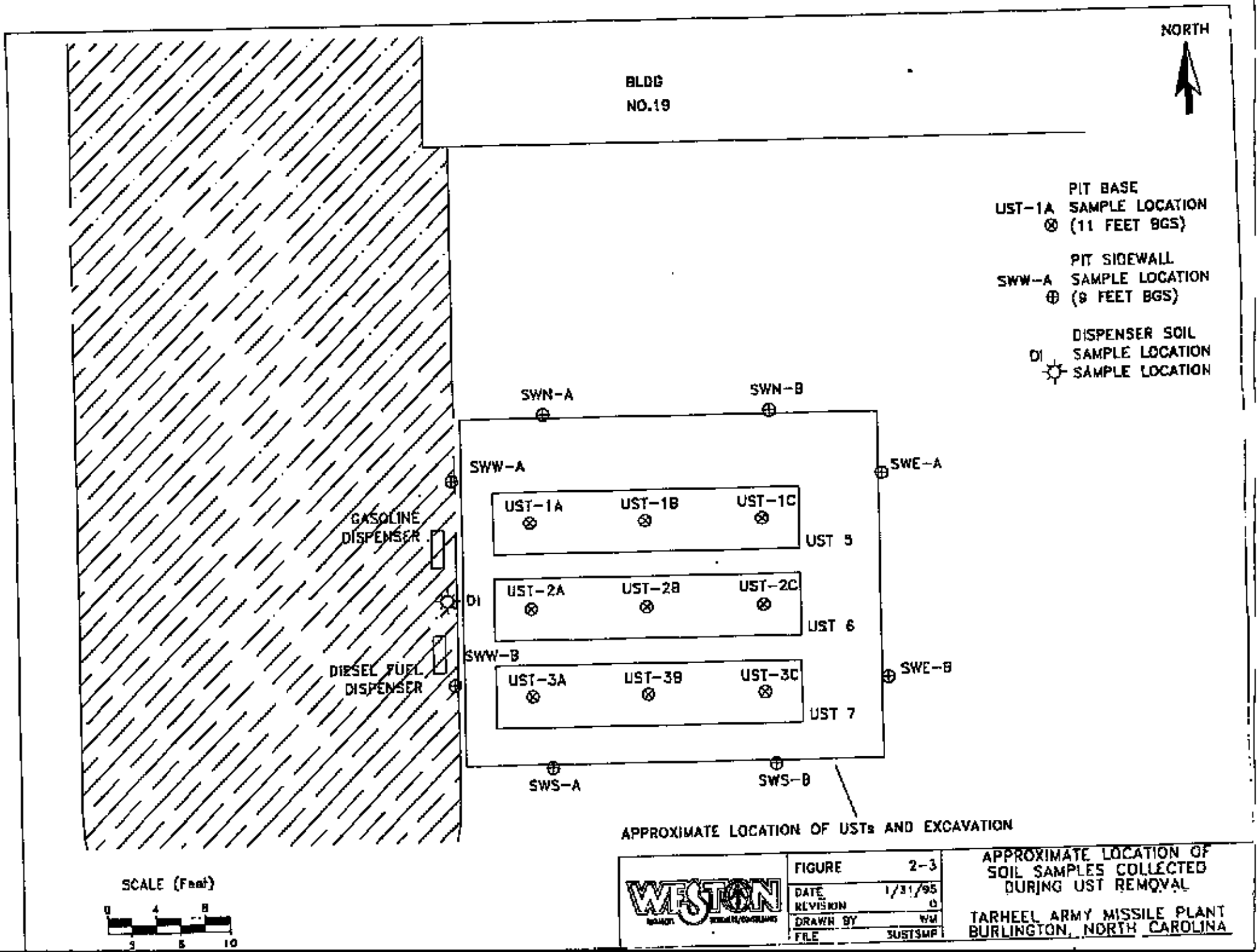
On 2 March 1995, 315.73 tons of petroleum contaminated soil were transported from the TAMP to Stalite Environmental, Inc., located in Gold Hill, North Carolina, for thermal reclamation. Stalite's reclamation program is properly permitted in accordance with permit numbers 3059R10 and SR0300060 issued by DEHNR.

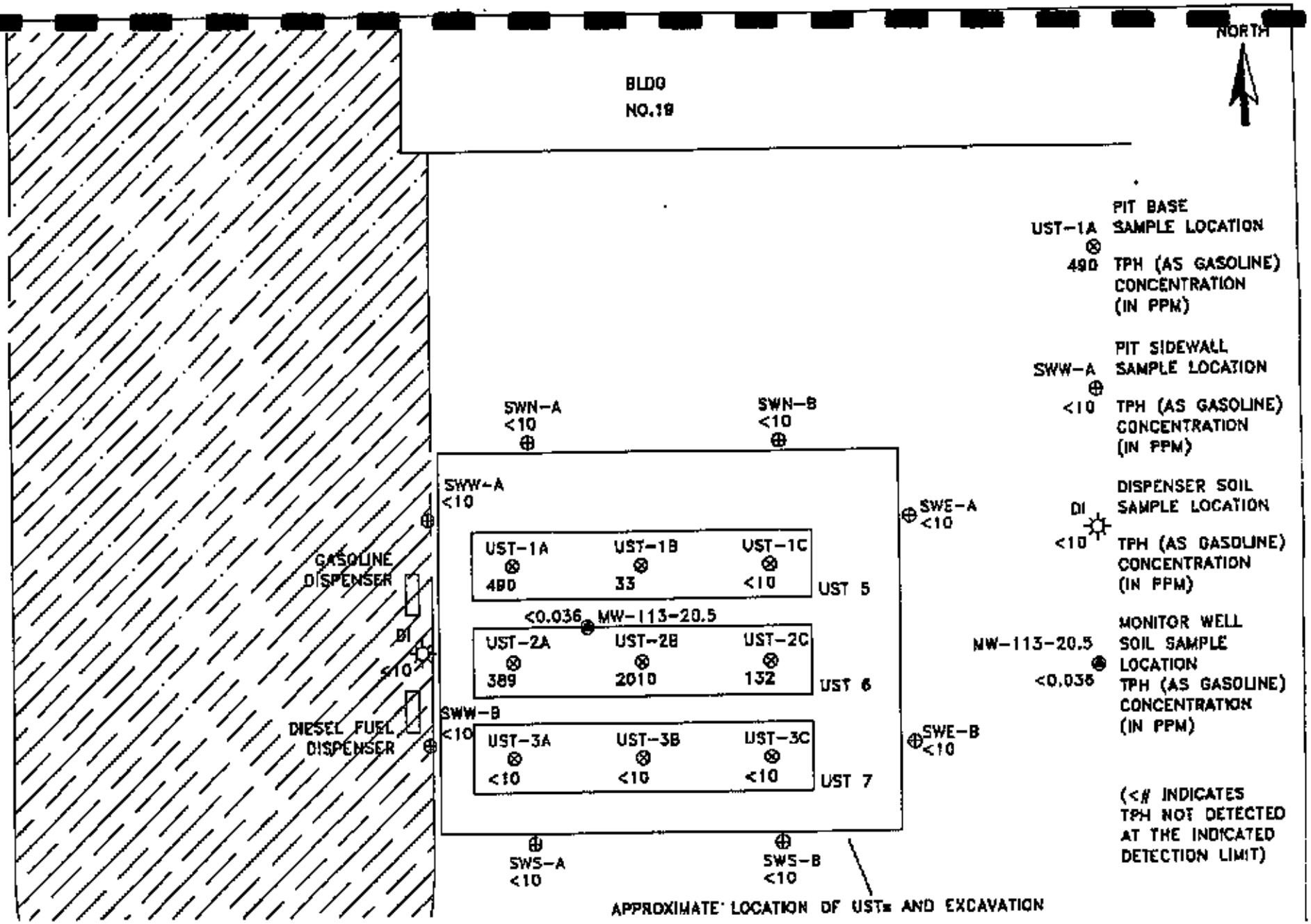


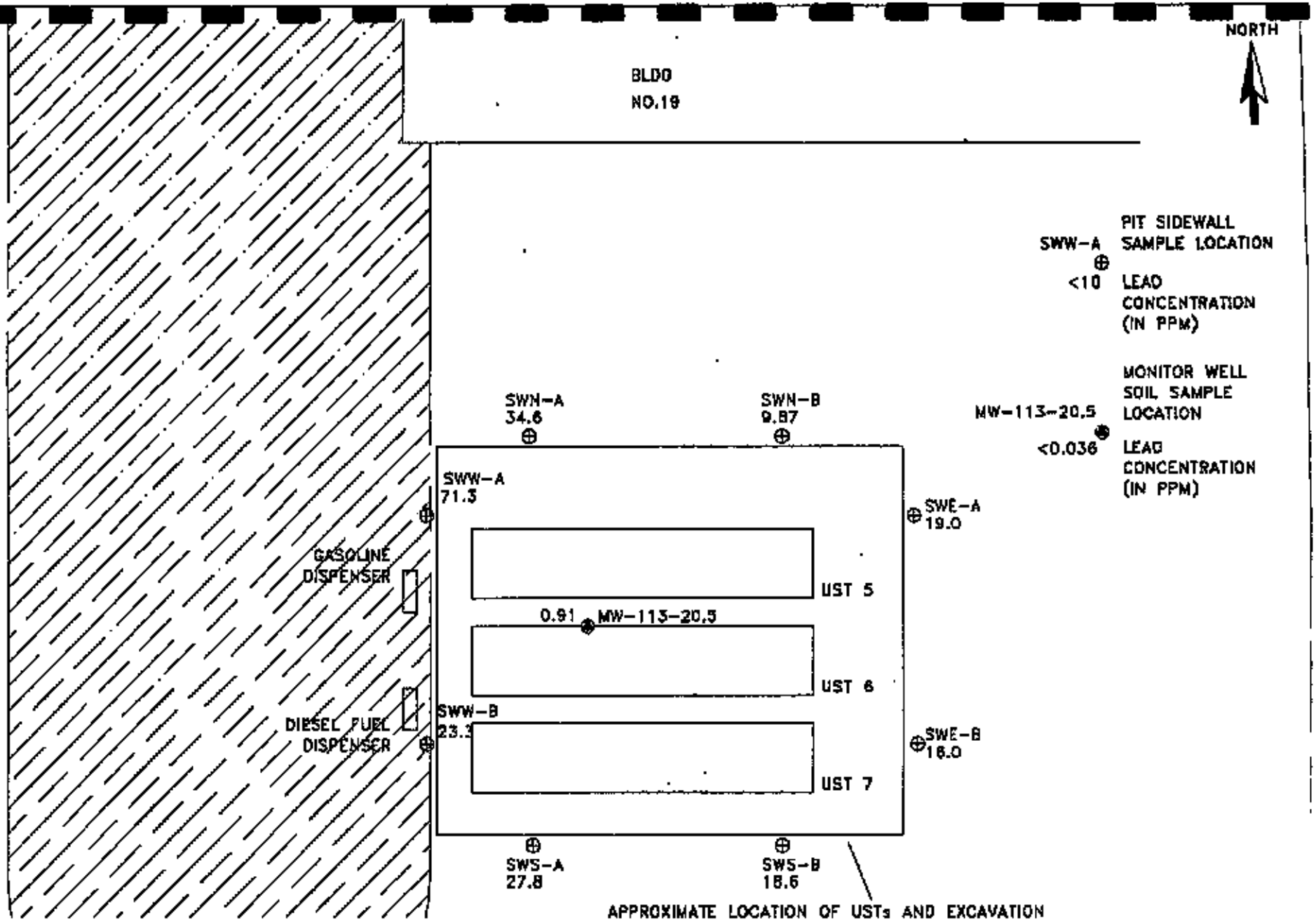
WESTON	FIGURE	1-2
	DATE	3/6/95
	REVISION	0
	DRAWN BY	WCM
	FILE	3USTFACL

FACILITY LAYOUT

TARHEEL ARMY MISSLE PLANT
BURLINGTON, NORTH CAROLINA


NORTH
BLDG
NO.19
PIT BASE
UST-1A SAMPLE LOCATION
(11 FEET BGS)
PIT SIDEWALL
SWW-A SAMPLE LOCATION
(9 FEET BGS)
DISPENSER SOIL
DI SAMPLE LOCATION
SAMPLE LOCATION
SWN-A
SWN-B
SWW-A
SWE-A
GASOLINE DISPENSER
UST-1A
UST-1B
UST-1C
UST 5
DI
UST-2A
UST-2B
UST-2C
UST 6
SWW-B
DIESEL FUEL DISPENSER
UST-3A
UST-3B
UST-3C
UST 7
SWE-B
SWS-A
SWS-B
APPROXIMATE LOCATION OF USTs AND EXCAVATION
SCALE (Feet)
0 4 8
5 5 10
WESTON
FIGURE 2-3
DATE 1/31/95
REVISION 0
DRAWN BY NM
FILE 3USTSMP
APPROXIMATE LOCATION OF SOIL SAMPLES COLLECTED DURING UST REMOVAL
TARHEEL ARMY MISSILE PLANT
BURLINGTON, NORTH CAROLINA


NORTH
BLDG
NO.19
SWN-A
<10
SWN-B
<10
SWW-A
<10
SWE-A
<10
GASOLINE DISPENSER
DI
<10
DIESEL FUEL DISPENSER
SWW-B
<10
SWE-B
<10
UST-1A
490
UST-1B
33
UST-1C
<10
UST 5
<0.036
MW-113-20.5
UST-2A
389
UST-2B
2010
UST-2C
132
UST 6
UST-3A
<10
UST-3B
<10
UST-3C
<10
UST 7
SWS-A
<10
SWS-B
<10
APPROXIMATE LOCATION OF USTs AND EXCAVATION
UST-1A
490
PIT BASE SAMPLE LOCATION
TPH (AS GASOLINE) CONCENTRATION (IN PPM)
SWW-A
<10
PIT SIDEWALL SAMPLE LOCATION
TPH (AS GASOLINE) CONCENTRATION (IN PPM)
DI
<10
DISPENSER SOIL SAMPLE LOCATION
TPH (AS GASOLINE) CONCENTRATION (IN PPM)
MW-113-20.5
<0.036
MONITOR WELL SOIL SAMPLE LOCATION
TPH (AS GASOLINE) CONCENTRATION (IN PPM)
(<# INDICATES TPH NOT DETECTED AT THE INDICATED DETECTION LIMIT)
SCALE (Feet)
0 4 8
2 6 10
WESTON
FIGURE 5-1
DATE 3/6/95
REVISION 0
DRAWN BY WM
FILE 3USTGAS
TPH - GASOLINE CONCENTRATIONS IN SOIL SAMPLES
TARHEEL ARMY MISSILE PLANT
BURLINGTON, NORTH CAROLINA



SCALE (Feet)

0 4 8
2 5 10

WESTON	FIGURE	5-2
	DATE	3/6/95
	REVISION	0
	DRAWN BY	WM
	FILE	3USTLEAD

LEAD
CONCENTRATIONS
IN SOIL SAMPLES

TARHEEL ARMY MISSILE PLANT
BURLINGTON, NORTH CAROLINA

TABLE 5-1
RESULTS OF SOIL SAMPLE ANALYSES

Sample Number	Sample Location	TPH – Gasoline (Reportable Concentration of 10 PPM)	TPH – Diesel (Reportable Concentration of 40 PPM)	Total Lead (Reportable Concentration Not Established)
UST-1A	PIT BASE	490	NA	NA
UST-1B	PIT BASE	33	NA	NA
UST-1C	PIT BASE	<10	NA	NA
UST-2A	PIT BASE	389	NA	NA
UST-2B	PIT BASE	2010	NA	NA
UST-2C	PIT BASE	132	NA	NA
UST-3A	PIT BASE	<10	<20	NA
UST-3B	PIT BASE	<10	<20	NA
UST-3C	PIT BASE	<10	<20	NA
SWN-A	PIT SIDEWALL	<10	<20	34.6
SWN-B	PIT SIDEWALL	<10	<20	9.9
SWE-A	PIT SIDEWALL	<10	<20	19.0
SWE-B	PIT SIDEWALL	<10	<20	16.0
SWS-A	PIT SIDEWALL	<10	<20	27.8
SWS-B	PIT SIDEWALL	<10	<20	18.6
SWW-A	PIT SIDEWALL	<10	<20	71.3
SWW-B	PIT SIDEWALL	<10	<20	23.3
DI	DISPENSERS	<10	<20	NA
MW-113-20.5	BOREHOLE	<0.036	<9.6	0.91

Pit base samples collected at a depth of approximately 12 feet below ground surface (BGS)
Pit sidewall samples collected at a depth of approximately 9 feet BGS
Borehole (of well MW-113) sample collected at a depth of approximately 21 feet BGS
All concentrations expressed in parts per million
TPH indicates Total Petroleum Hydrocarbons
TPH (as Gasoline) was analyzed by Method 8015 with sample preperation by Method 5030
TPH (as Diesel) was analyzed by Method 8015 with sample preperation by Method 3550
Total Lead by Method 6010, except for sample MW-113-20.5 which used Method 7421
<# indicates that the compound was not detected at the indicated detection limit
NA indicates the sample was not analyzed for the indicated compound

TABLE 5-2
RESULTS OF GROUNDWATER SAMPLE ANALYSES

Well # Sample Date (VOCs) Sample Date (Lead)	MW-103 1/15/95 2/7/95	MW-108 1/15/95 2/7/95	MW-113 2/7/95 2/7/95	TB2 2/7/95 2/7/95	NCGWQS
Acetone	<10	<2000	<10	10	700
2-Butanone	<10	<2000	<10	14 B	170
Benzene	<1.0	<200	53	<5	1
Toluene	<1.0	<200	41	<5	1000
Ethylbenzene	<1.0	<200	140	<5	29
Xylene (total)	<1.0	<200	220	<5	400
Trichloroethene	<1.0	8600	<5	<5	2.8
Tetrachloroethene	<1.0	890	<5	<5	0.7
Lead	<5	<5	<5	NA	15

All concentrations expressed in parts per billion
VOCs indicate Volatile Organic Compounds
VOCs sampled on 1/15/95 analyzed by Method 8260; VOCs sampled on 2/7/95 analyzed by Method 8240
Lead analyzed by Method 239.2 with sample preperation by Method 3030C
<# indicates that the compound was not detected at the indicated detection limit detection limit
NA indicates the sample was not analyzed for the indicated compound
B indicated the compound was detected in the laboratory blank
NCGWQS indicate North Carolina Groundwater Quality Standard
Substitue Benzene and unknowns were reported as Tentatively Identified Compounds for sample MW-113
TB2 is a trib blank

103

103 113

Federal Remediation Branch

142

Your Name:	DJL
EPA ID:	NC7210020544
Facility Name:	TAMP
Document Group:	FRB CERCLA (FRCERCLA)
Document Type:	Preliminary Assessment/Site Inspection (PA/SI)
Description:	Report -Initial Site Characterization Report Underground Storage Tanks 3 and 8-
Date of Doc:	6/23/1995
Author of Doc:	Roy F. Weston, Inc.
Box No:	10004

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	Month	Day	Year
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INITIAL SITE CHARACTERIZATION REPORT
UNDERGROUND STORAGE TANKS 3 AND 8
TARHEEL ARMY MISSILE PLANT
BURLINGTON, NORTH CAROLINA

Incident Number: Unassigned
Site Reference: AT&T Technologies - C

Prepared By:

Roy F. Weston, Inc.
1000 Perimeter Park Boulevard, Suite B
Morrisville, North Carolina

23 June 1995

SECTION 2

RELEASE EVENT INFORMATION

2.1 TANK INFORMATION

The two USTs were located near Buildings 16 (UST 8) and 5 (UST 3) with the southern end of UST 3's product piping located near Building 1A (Figure 1-2). The tanks were used to supply emergency back-up power generators with diesel fuel. The generators were routinely tested, but otherwise were not operated and fuel consumption was minimal. The tanks were installed in 1986, replacing tanks previously in place which had been installed by the United State Army Corps of Engineers for MICOM. The installation date of the original tanks is estimated to be 1971 for UST 3 and 1959 for UST 8. These original tanks were used to store diesel fuel. No other information is available on the previous tanks. From discussions with personnel at the facility who were present at the time the older tanks were removed, there were no unusual conditions observed at the time the former tanks were replaced.

The two recently removed USTs were used to store diesel fuel, and had capacities of 600 gallons and 500 gallons for UST 3 and UST 8, respectively. Each was constructed of asphalt coated steel. The tanks were not thought to have been equipped with cathodic protection systems, and none were observed at the time of removal.

In 1992, tank tightness tests were conducted on both USTs, and both tested tight. Before the USTs were removed, approximately 500 gallons of product (diesel) were pumped from the tanks (combined volume from both tanks).

Records of petroleum USTs maintained by the North Carolina Department of Environment, Health and Natural Resources - Underground Storage Tank Division (DEHNR-UST) originally indicated that AT&T Technologies, Inc. was the owner of all tanks at the TAMP. This information was in error, as AT&T leased the property from MICOM and never owned the property; the tanks were included under the facility lease and remained with the property when AT&T's lease expired in March 1992. This error was corrected in a letter dated 4 February 1993, submitted to DEHNR-UST by AT&T. Attached to this letter was the annual bill for tank fees, marked to reflect the corrected ownership of the tanks. The February 1993 letter (with attached bill) are provided in Appendix A.

2.2 RELEASE EVENT DETECTION

Acting at the direction of MICOM, AT&T undertook closure of USTs 3 and 8 by removal of the tanks. Some of the associated piping was removed, with other piping capped and closed in place. The closure effort was conducted by Four Seasons, Inc. and Aquaterra, Inc., under subcontract to AT&T. It is noted that the closure contractors assigned numbers 4 and 5 to USTs 8 and 3, respectively. Sample numbers collected by the closure contractors reflect these

assigned numbers. Tank numbers used in this report (UST 3 and UST 8) reflect the owner's tank numbering system, which predates the closure effort.

On 8 and 9 March 1995, USTs 3 and 8 (and nearby associated vent and product piping) were removed (Figure 2-1 and 2-2, respectively). Soil was excavated in the vicinity of the tanks and associated piping. Prior to excavation, 500 gallons of product in the tanks (discussed previously) were removed from the tanks, and vapors in the tanks were purged. Concrete pavement where present was cut and removed.

A backhoe was used to excavate soils overlying the tanks, and to lift the tanks from the ground. The cylindrical tanks were 72 inches in length and 48 inches in diameter for UST 3, and 62 inches in length and 48 inches in diameter for UST 8. Both were buried such that the top of the tanks were approximately two feet below ground surface (BGS). A visual inspection of the tanks suggested all were in good condition, with no corrosion in evidence. The tanks were removed from the site under manifest, steam cleaned by Four Seasons, Inc., and cut for disposal as scrap metal by D. H. Griffen Wrecking Company.

During the removal effort, field screening of the ambient atmosphere in the work area and of soils in the vicinity of the tanks was conducted using a portable photoionization detector (PID). Field screening of soils around former UST 8 produced positive responses (above background levels) on the PID (maximum PID response of 235 parts per million volume-volume basis relative to the PID's calibration gas). Screening of the atmosphere within the pit using an explosimeter indicated that explosive vapors were not present. Field screening in the vicinity of UST 3 did not produce PID responses above background levels, and explosive vapors were not detected in the UST 3 excavation.

Based on field screening data, it was considered possible that petroleum fuel had been released to the environment at the UST 8 site. Excavation was continued to either side of the tank to the extent practical (over an area measuring approximately 13 feet by 13 feet at the ground surface) and to a depth of approximately 10-to-11 feet BGS (approximately 4 feet below the bottom of the former tank). Some water was observed to enter the pit along the sidewall of the pit at a depth of approximately 10.5 feet BGS, and excavation was discontinued. On-site personnel did not consider the water to have originated from the surficial (water table) aquifer. The source of the water is uncertain. It is noted that a seven-foot deep storm sewer is located in the vicinity of the excavation. The excavated soils were stockpiled on site by placing on and covering over with plastic sheeting.

At former UST 3, field screening did not indicate a release of petroleum compounds to the environment. The completed excavation measured 8 feet by 8 feet laterally, and extended to a depth of 6 feet BGS. Groundwater was not observed at the base of excavation. Product piping was vacuumed, capped, and closed in place.

On 8 March 1995, soil samples were collected from the base and sides of the excavation conducted around former UST 8 (Figure 2-2). Two soil samples (UST-4A and UST-4B) were collected from the floor of the excavation at a depth of approximately 7.5 feet BGS. It was then decided to further extend the depth of the excavation, and one soil sample (UST-PB) was collected from the beneath the base of the completed excavation (at a depth of approximately 13 feet BGS, approximately 7 feet below the former tank bottom). Four samples (UST-4N, UST-4S, UST-4E, and UST-4W) were collected from the sidewalls of the excavation at a depth of approximately 9 feet BGS, corresponding to a depth slightly above that where water had been observed to enter the excavation (water entry depth was observed at approximately 10.5 feet BGS).

On 8 and 9 March 1995, two soil samples (UST-5A and UST-5B) were collected from approximately 1.5 feet below the base of the excavation at former UST 3 (samples at a depth of approximately 7.5 feet BGS; base of excavation at a depth of approximately 6 feet BGS), and seven soil samples (PR-1 through PR-7) were collected beneath the approximately 160 foot length of product and vent lines leading from UST 3 (at a depth of approximately 2 feet BGS) (Figure 2-1). Additionally, one composite sample (SP-1) was collected from the approximately 44.5 tons of soil stockpiled from the excavation at the former UST-8. This sample was collected for disposal characterization purposes.

All samples were submitted for analysis for Total Petroleum Hydrocarbons as Diesel (TPH - Diesel, extraction by Method 3550 and analysis by Method 8015 - Modified for Diesel) and Total Petroleum Hydrocarbons as Gasoline (TPH - Gasoline, extraction by Method 5030 and analysis by Method 8015 - Modified for Gasoline).

At former UST-8, the excavated pit was backfilled with approximately 50 cubic yards of crushed stone. No soil was used for backfill at UST-8. At former UST-3, soils excavated during removal of former UST-3 were used as backfill, and no additional backfill material was required.

On 9 March 1995, AT&T (the former lessee of the facility) notified by telephone MICOM, the owner of the facility, of the field data and the suspected petroleum release at UST 8. Reportedly, on 10 March 1995, MICOM, in compliance with the DEHNR 24 hour notification requirement associated with suspected releases from USTs, notified by telephone DEHNR, Division of Environmental Management, Groundwater Section, Winston-Salem Region, that, based on PID readings measured during removal of UST 8, a release of petroleum product was suspected.

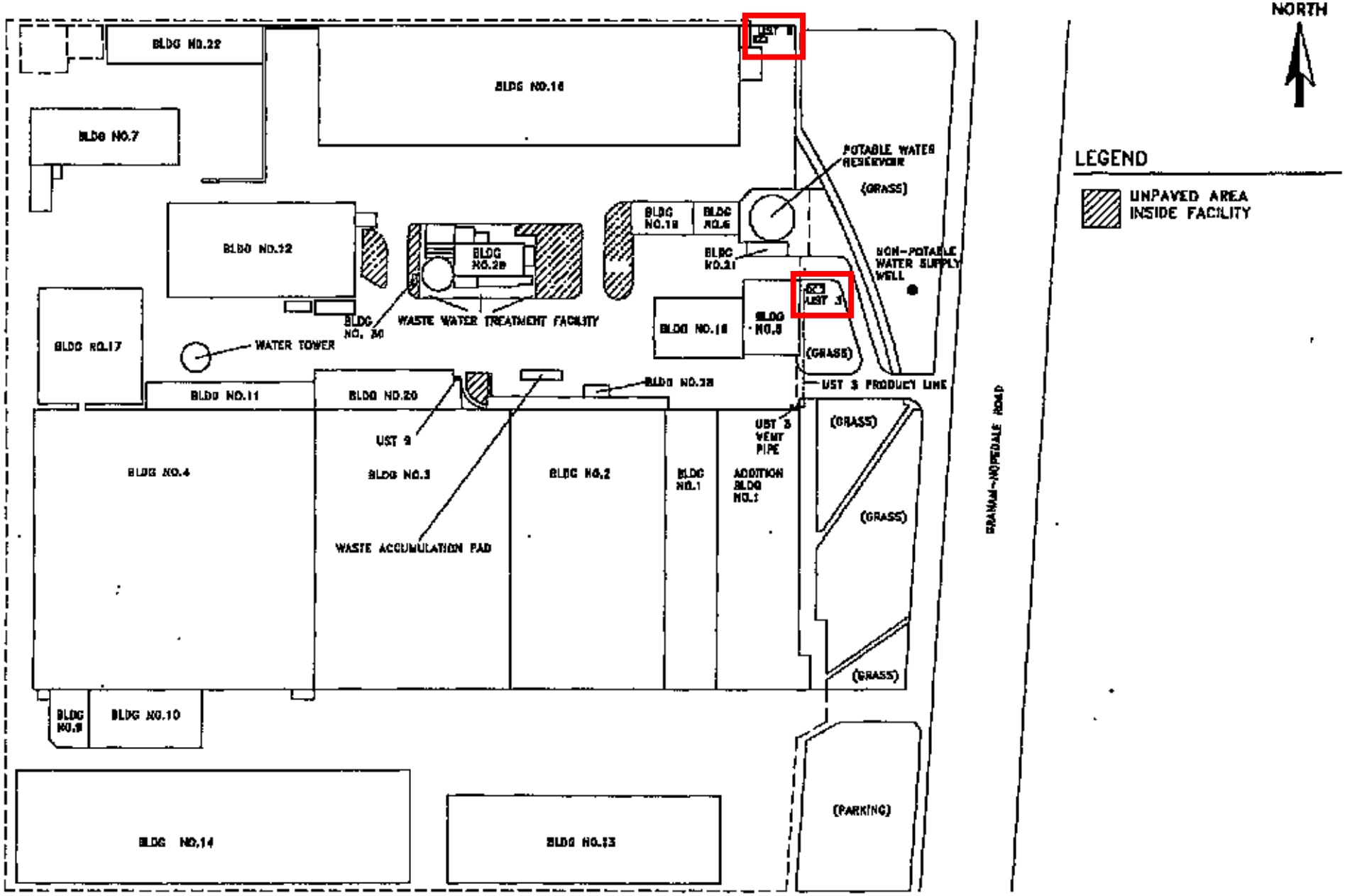
On 23 March 1995, AT&T received laboratory results for the soil samples collected during the removal effort. The samples collected from the excavation at former UST 3 and at six of the seven locations along the former piping from UST 3 indicated that TPH - Gasoline and TPH - Diesel were not present at detectable concentrations, with detection limits of less than 10 parts per million (ppm) and 20 ppm, respectively. One sample, PR-1, collected near Building 1A from soil at the south end of former UST-3's product line (and a vent pipe for a day tank supplied by the product line), produced a TPH - Diesel concentration of 267 ppm and a TPH

- Gasoline concentration of 20 ppm. Given that former UST 3 had only been used to store diesel fuel, the detection of total petroleum hydrocarbons as gasoline may be an artifact of the analytical method, in that there is some overlap of the diesel range organic compounds in the analytical method used for quantitation of gasoline range organic compounds.

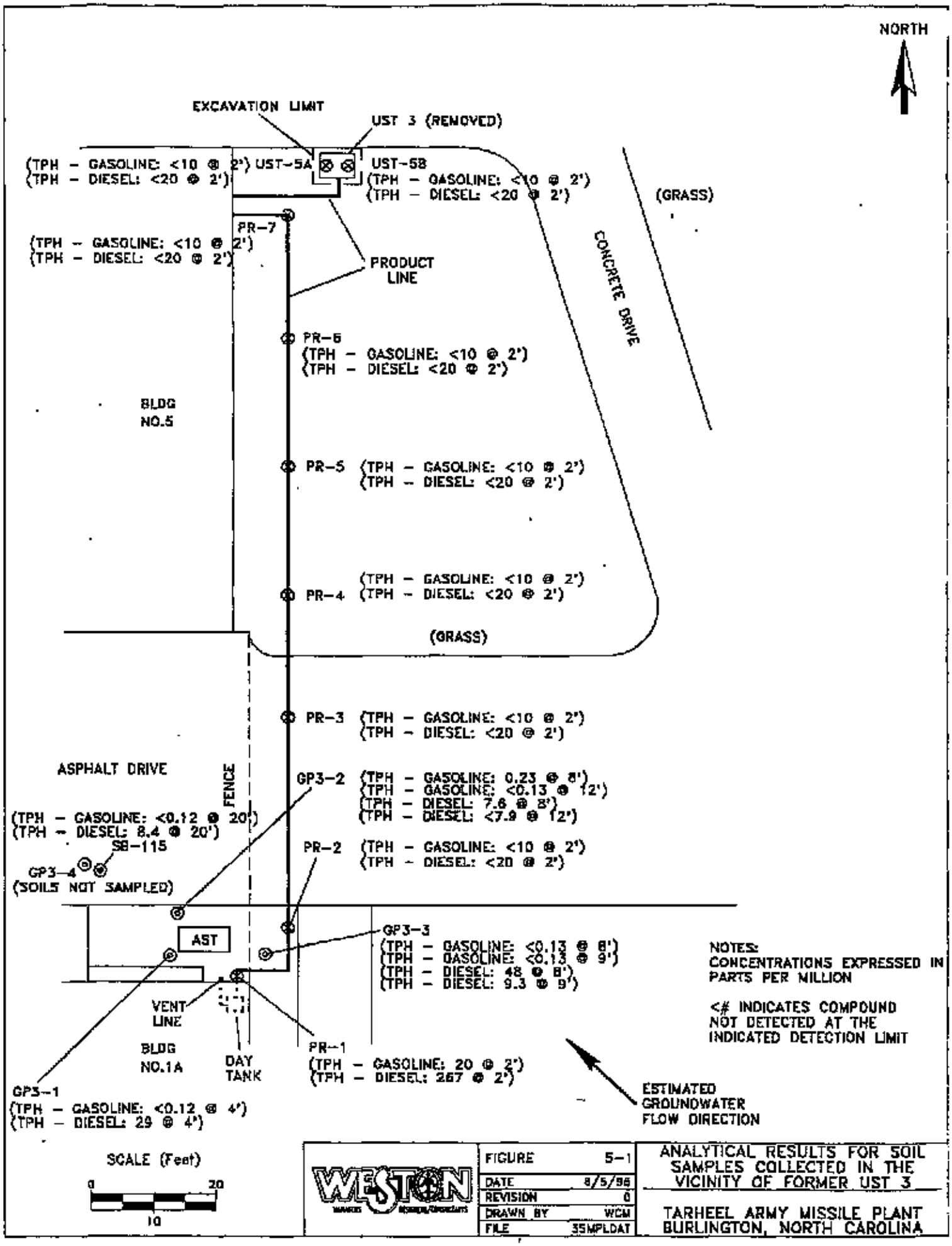
Samples collected from the sidewalls and base of the excavation conducted around former UST 8 detected TPH - Diesel at concentrations ranging from 117 ppm to 11,640 ppm. Concentrations of TPH - Gasoline ranged from below detection limits (of 10 ppm) to 402 ppm. As UST 8 had only been used for storage of diesel fuel, the detection of total petroleum hydrocarbons as gasoline may represent quantitation of diesel fuel constituents which allute within the gasoline range organics analysis (i.e., with the analytical methods employed to quantify TPH - Gasoline and TPH - Diesel, there is an overlap of the TPH - Gasoline constituents and the TPH - Diesel constituents), as discussed above. Further discussion of the chemical analytical data is presented in Section 5.

One composite sample, SP-1, was collected from the approximately 44.5 tons of stockpiled soil removed from the former UST 8 area. TPH - Gasoline and TPH - Diesel were detected in the sample, at concentrations of 231 ppm and 2470 ppm,. respectively. As indicated above, it is considered likely that the detection of total petroleum hydrocarbons as gasoline represents an artifact of the analytical method.

Because some of the soil samples exhibited TPH - Gasoline and TPH - Diesel concentrations above DEHNR reportable limits of 10 ppm and 40 ppm, respectively, the data were considered to confirm the suspected release. Therefore, on 23 March 1995, following review of the soil analytical data, AT&T contacted MICOM by telephone and conveyed the results of the soil sample data. MICOM advised AT&T that they would notify DEHNR of the confirmed release. The notification was reportedly conducted by telephone the morning of 24 March 1995, thereby complying with the DEHNR 24 hour notification requirement associated with confirmed releases from USTs.



WESTON	FIGURE 1-2	FACILITY LAYOUT
	DATE 9/18/95	
	REVISION 0	
	DRAWN BY WGM	TARHEEL ARMY MISSILE PLANT



NOTES:
CONCENTRATIONS EXPRESSED IN PARTS PER MILLION

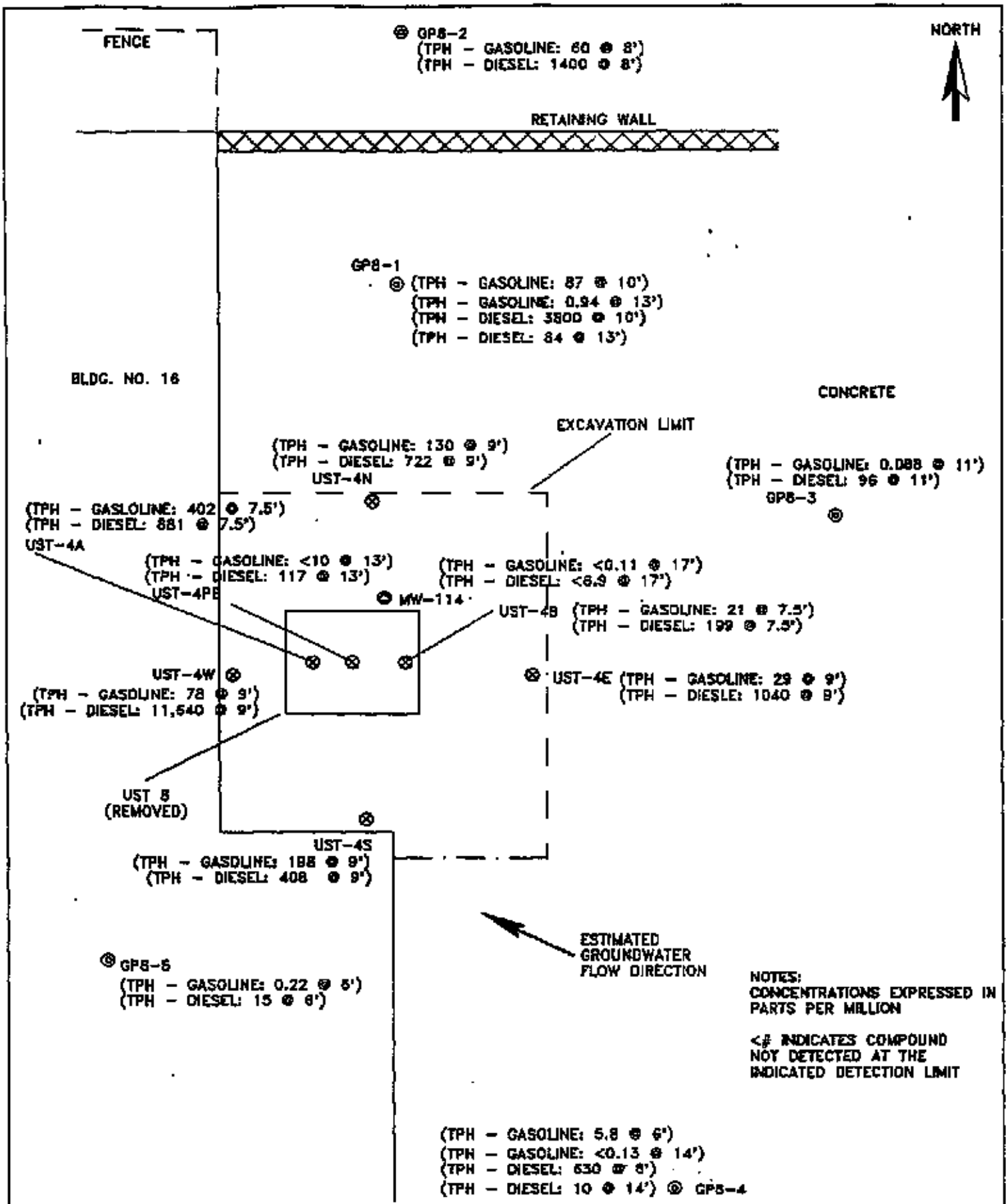
<# INDICATES COMPOUND NOT DETECTED AT THE INDICATED DETECTION LIMIT

WESTON	FIGURE 5-1	ANALYTICAL RESULTS FOR SOIL SAMPLES COLLECTED IN THE VICINITY OF FORMER UST 3
	DATE 8/5/96	
	REVISION 0	
	DRAWN BY WCM	TARHEEL ARMY MISSILE PLANT BURLINGTON, NORTH CAROLINA
	FILE 35MPLDAT	

TABLE 5-1
RESULTS OF SOIL SAMPLE ANALYSES
FOR FORMER UST NUMBER 3 AREA

Sample Number	Sample Location	Sample Depth (Feet BGS)	Total Lead	TPH - Gasoline (SSE Concentration of 180 PPM)	TPH - Diesel (SSE Concentration of 720 PPM)
PR-1	PIPING RUN	2	NA	20	267
PR-2	PIPING RUN	2	NA	<10	<20
PR-3	PIPING RUN	2	NA	<10	<20
PR-3	PIPING RUN	2	NA	<10	<20
PR-4	PIPING RUN	2	NA	<10	<20
PR-5	PIPING RUN	2	NA	<10	<20
PR-6	PIPING RUN	2	NA	<10	<20
PR-7	PIPING RUN	2	NA	<10	<20
UST-5A	BASE, WEST END	7.5	NA	<10	<20
UST-5B	BASE, EAST END	7.5	NA	<10	<20
GP3-1-4	GEOPROBE BORING	4	8.0	<0.120	29
GP3-2-8	GEOPROBE BORING	8	7.5	0.230	7.6
GP3-2-12	GEOPROBE BORING	12	1.3	<0.130	<7.9
GP3-3-8	GEOPROBE BORING	8	4.7	<0.130	48
GP3-3-9	GEOPROBE BORING	9	3.0	<0.130	9.3
SB-115-20	AUGER BORING	20	0.72	<0.120	8.4

BGS indicates Below Ground Surface
All concentrations expressed in parts per million
TPH indicates Total Petroleum Hydrocarbons
TPH (as Gasoline) was analyzed by Method 8015 with sample preperation by Method 5030
TPH (as Diesel) was analyzed by Method 8015 with sample preperation by Method 3550
Lead was analzed by Method 7421
NA indicates that the compound was not included in the analytic suite
<# indicates that the compound was not detected at the indicated detection limit
SSE indicates Site Sensitivity Evaluation
Maximum allowable concentrations of lead in soil have not been established by North Carolina
Data which are shaded indicate the concentration exceeds SSE Final Cleanup Level



WESTON	FIGURE 5-2	ANALYTICAL RESULTS FOR SOIL SAMPLES COLLECTED IN THE VICINITY OF FORMER UST 8
	DATE 8/5/95	
	REVISION 0	
	DRAWN BY WGM	TARHEEL ARMY MISSILE PLANT BURLINGTON, NORTH CAROLINA
	FILE 8SMPLDAT	

TABLE 5-3
RESULTS OF SOIL SAMPLE ANALYSES
FOR FORMER UST NUMBER 8 AREA

Sample Number	Sample Location	Sample Depth (Feet BGS)	Total Lead	TPH – Gasoline (SSE Concentration of 180 PPM)	TPH – Diesel (SSE Concentration of 720 PPM)
UST-4A	BASE, WEST END	7.5	NA	402	881
UST-4B	BASE, EAST END	7.5	NA	41	199
UST-4E	EAST WALL	9	NA	29	1040
UST-4W	WEST WALL	9	NA	78	11640
UST-4N	NORTH WALL	9	NA	130	722
UST-4S	SOUTH WALL	9	NA	198	408
UST-PB	PIT BOTTOM	13	NA	<10	117
SP-1	STOCKPILE	–	NA	231	2470
GP8-1-10	GEOPROBE BORING	10	0.97	87	3800
GP8-1-13	GEOPROBE BORING	13	0.94	0.94 J	84
GP8-2-8	GEOPROBE BORING	8	9.6	60	1400
GP8-3-11	GEOPROBE BORING	11	1.2	0.088 J	96
GP8-4-6	GEOPROBE BORING	6	2.8	5.8 J	630
GP8-4-14	GEOPROBE BORING	14	1.3	<0.130	10
GP8-5-6	GEOPROBE BORING	6	3.8	0.22	15
MW-114-17	AUGER BORING	17	3.3	<0.110	<6.9

BGS indicates Below Ground Surface
All concentrations expressed in parts per million
TPH indicates Total Petroleum Hydrocarbons
TPH (as Gasoline) was analyzed by Method 8015 with sample preperation by Method 5030
TPH (as Diesel) was analyzed by Method 8015 with sample preperation by Method 3550
Lead was analzed by Method 7421
NA indicates that the compound was not included in the analytic suite
J indicates an estimated concentration below the detection limit
<# indicates that the compound was not detected at the indicated detection limit
SSE indicates Site Sensitivity Evaluation
Maximum allowable concentrations of lead in soil have not been established by North Carolina
Data which are shaded indicate the concentration exceeds SSE Final Cleanup Level (not applicable to stockpiled soil)

TABLE 5-4
RESULTS OF GROUNDWATER SAMPLE ANALYSES
FOR FORMER UST NUMBER 8 AREA

Sample Location Sample Number Sample Date	MW-114 MW-114-GW 4/11/95	MW-2 ATT-MW2 6/3/93	NCGWQS
Total Lead	<5	13	15
VOCs			
1,1-Dichloroethene	66	130	7
1,1-Dichloroethane	28	45	700
1,2-Dichloroethane	13	25	0.38
1,1,1-Trichloroethane	<5	22	200
Trichloroethene	5	5	2.8
Benzene	1 J	<5	1
TICs	25 J	60 J	NL
Semi-VOAs			
2-Methylnaphthalene	14	NA	NL
Acenaphthene	2 J	NA	80*
Fluorene	1 J	NA	280*
Di-n-butylphthalate	1 J	NA	700
Bis(2-ethylhexyl)phthalate	2 J	NA	3
TICs	60 J	NA	NL

All concentrations expressed in micrograms per liter (ppb)
Lead was analzed by Method 239.2 with sample preparation by Method 3030C
VOCs (volatile organic compounds) were analyzed by Method 8240
Semi-VOAs (semi-volatile organic analyses) were analyzed by Method 8270
NA indicates that the compound was not included in the analytic suite
J indicates an estimated concentration below the detection limit
<# indicates that the compound was not detected at the indicated detection limit
NCGWQS indicates North Carolina Groundwater Quality Standard
NL indicates a NCGWQS is not available for the compound
Data which are shaded indicate the concentration exceeds NCGWQSs
TICs are Tentatively Identified Compounds
* Proposed NCGWQS

Federal Remediation Branch

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Your Name:	NPT
EPA ID:	NC7210020544
Facility Name:	TAMP
Document Group:	FRB CERCLA (FRCERCLA)
Document Type:	Remedial Action (RA)
Description:	Report Soil Cleanup Report
Date of Doc:	6/1/2005
Author of Doc:	
Box No:	10133

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NC7210020544

	Month	Day	Year
Date Recieved by File Room:			
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SOIL CLEANUP REPORT
WITH SITE CLOSURE REQUEST

THE TARHEEL ARMY MISSILE PLANT
204 GRAHAM-HOPEDALE ROAD
BURLINGTON, NORTH CAROLINA

Report, Underground Storage Tanks 3 and 8, Tarheel Army Missile Plant, Burlington, North Carolina, 23 June 1995."

As indicated above, UST 3 was removed during the same mobilization as the UST 8 removal effort. Field observations during the removal of UST 3 did not suggest that petroleum compounds were present in soils in the former UST pit or along the UST's associated product and vent piping. However, analysis of soil samples collected during the removal effort indicated diesel petroleum constituents were present in shallow soils near a vent pipe associated with a former day tank to which UST 3 had been connected (Figure 1-3). Analysis of a groundwater sample collected from a soil boring advanced near this area suggested that the groundwater quality had not been impacted, although the data were considered inconclusive by DENR. Additional limited investigation in this area was requested by DENR. The investigation subsequently was conducted for AMCOM by ICF Kaiser, Inc., with field activities completed in November 1997. Reporting of the original investigation of the UST 3 investigation is presented in the report titled, "Initial Site Characterization Report, Underground Storage Tanks 3 and 8, Tarheel Army Missile Plant, Burlington, North Carolina, 23 June 1995" (WESTON, 1995).

1.2.7 AS/SVE Remediation System Installation and Initiation of Site Remediation

Installation of the air sparging/soil vapor extraction remediation system began in mid-1995, with the installed system conforming to the design presented in 21 November 1994 CAP, modified to address the areas investigated following completion of the CAP as previously discussed. Figure 1-5 presents a layout of the air sparging/soil vapor extraction system as installed.

System installation extended from September through December 1995, and included the drilling and construction of 15 sparge/extraction wells (SEWs) and four monitor wells, collecting baseline groundwater samples and measuring groundwater levels, surveying the elevations of the newly installed monitor wells, installing above-ground sparge and vent piping to the 15 newly installed SEWs and to the existing SEW (previously installed as part of the pilot study conducted during the CAP), constructing the equipment pad, installing service utility connections, constructing control and monitoring systems, and installing the blower, compressor, and other equipment.

On 7 December 1995, the system was first activated, marking the beginning of the proving period. During this time, sparge and vent air flow rates were measured and adjusted. Initially, the system was operated during weekday daytime hours so that potential mechanical problems could be observed and responded to by maintenance personnel at the facility. Continuous operation and routine monitoring began on 15 January 1996.

Occasional unplanned interruptions of system operation have occurred, primarily from January 1996 through March 1996; the frequency and duration of the interruptions have decreased since that time. On 30 September 1999, the system was shutdown, pending completion of a new site access agreement. The access agreement was finalized effective 1 February 2000 and, after inspection and repairs to the system, the system was re-activated on 8 February 2000. The system was continuous, full time operation from February 2000 through October 2000. In October 2000, the system began a schedule pulsed operation consisting of the system operating continuously from Monday morning through Friday afternoon and being shutdown from Friday afternoon through Monday morning.

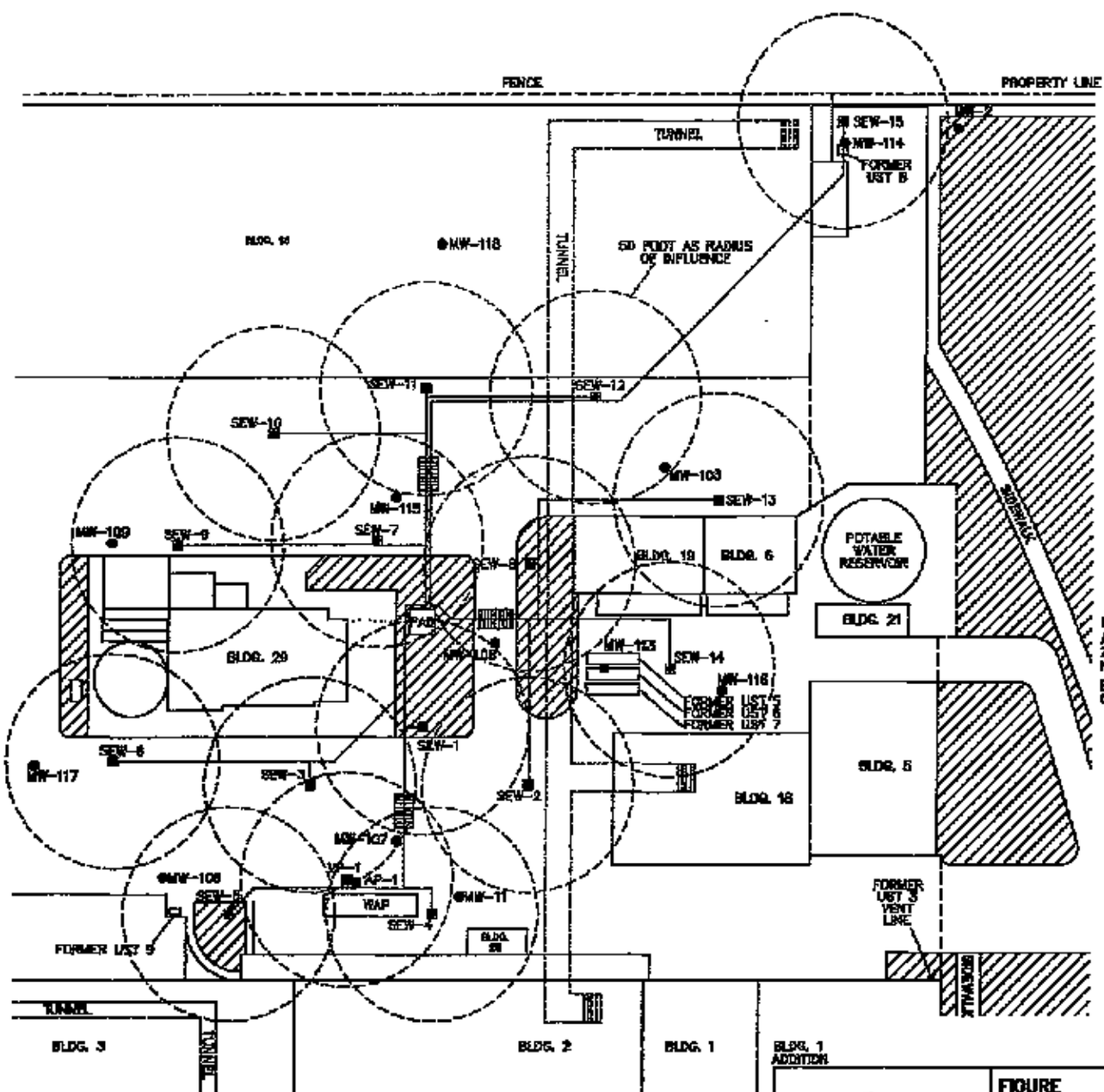
1.3 ADDITIONAL REMEDIATION MEASURES

The U.S. Army and the State of North Carolina came to an agreement on additional remedial efforts that required that the AS/SVE system be shut off to facilitate a return to anaerobic conditions so that a pilot test for the injection of emulsified oil can be performed at the site. In order to facilitate this pilot test, the U.S. Army requested that Lucent suspend AS/SVE operation. Based on this request, Lucent provided a written request to DENR (Winston-Salem Branch) on 7 January 2004 and received written approval by DENR (Winston-Salem Branch) on 16 January 2004 to discontinue operation of the AS/SVE system for a period of 24 months. The AS/SVE system was shut down on 19 February 2004 and DENR (Winston-Salem Branch) was notified of the event on 25 February 2004. The groundwater extraction system remains operational.

1.4 REPORT ORGANIZATION

This report is organized into five sections, organized such that earlier sections provide information useful in reviewing later sections.

- Section 1 provides background information relevant to the site.
- Section 2 presents an overview of the surrounding area, including regional and site hydrogeology.
- Section 3 discusses the field activities and chemical analytical results for samples collected during this investigation.
- Section 4 presents conclusions and recommendations based on the current and historical data.



LEGEND

- UNPAVED AREA INSIDE FACILITY
- SEW-13 — SPARGE/EXTRACTION WELL WITH ABOVE GROUND PIPING
- MW-103 — MONITORING WELL
- TRAFFIC AREA ACCESS RAMP
- ELECTRICAL AND TELEPHONE SERVICE

NOTE:
AREAS OF DISSOLVED PHASE CONTAMINATION NOT WITHIN SPARGING ZONE OF INFLUENCE WILL BE REMEDIATED AS GROUNDWATER NATURALLY MIGRATES TO ZONES OF AERATION

BUILDING 29 IS BUILT TO BEDROCK AND IS CONSIDERED TO DIVERT GROUNDWATER; THEREFORE, COVERAGE IN THIS AREA IS NOT REQUIRED

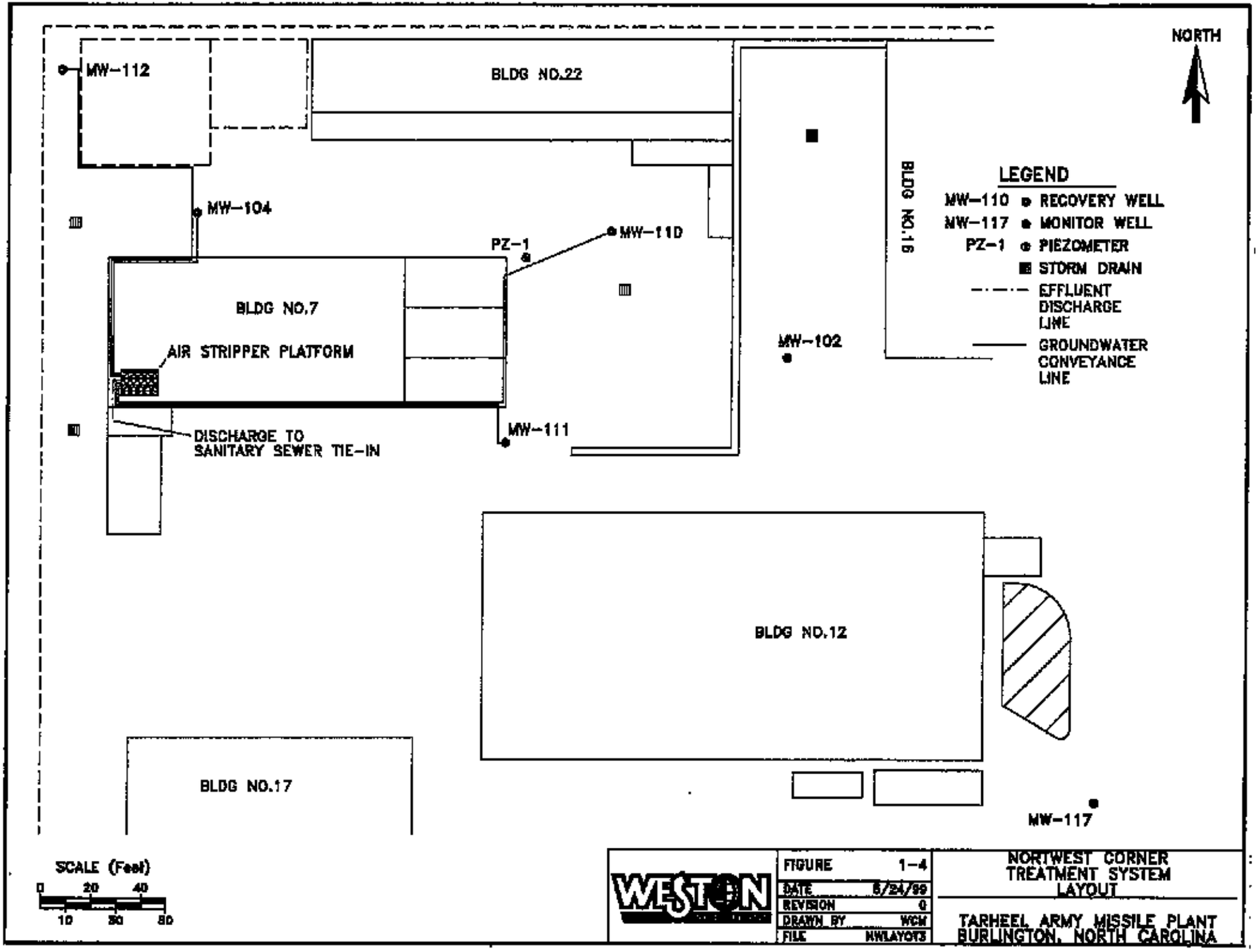
APPROXIMATE SCALE (FEET)
0 50
25 75

WESTON

FIGURE	1-5
DATE	7/25/96
REVISION	0
DRAWN BY	WM
FILE	TAMPSVE2

AIR SPARGE/
SOIL VAPOR EXTRACTION
SYSTEM LAYOUT

TARHEEL ARMY MISSILE PLANT
BURLINGTON, NORTH CAROLINA


NORTH
MW-112
BLDG NO.22
MW-104
PZ-1
MW-110
BLDG NO.7
AIR STRIPPER PLATFORM
DISCHARGE TO
SANITARY SEWER TIE-IN
MW-111
MW-102
BLDG NO.16
LEGEND
MW-110 RECOVERY WELL
MW-117 MONITOR WELL
PZ-1 PIEZOMETER
STORM DRAIN
EFFLUENT DISCHARGE LINE
GROUNDWATER CONVEYANCE LINE
BLDG NO.12
BLDG NO.17
MW-117
SCALE (Feet)
0 20 40
10 30 50
WESTON
FIGURE 1-4
DATE 5/24/99
REVISION 0
DRAWN BY WCM
FILE NWLAYOUT3
NORTWEST CORNER TREATMENT SYSTEM LAYOUT
TARHEEL ARMY MISSILE PLANT
BURLINGTON, NORTH CAROLINA

Federal Remediation Branch

93

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EPA ID:	NC7210020544
Facility Name:	TAMP
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Document Type:	Remedial Action (RA)
Description:	Soil Sampling results
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Author of Doc:	Solutions I&E Services, Inc.
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Tarheel Army Missile Plant Remediation
Soil Sampling Results

For
U.S. Army Environmental Center
Aberdeen Proving Ground, Edgewood Area
Aberdeen, MD 21010-5401
Contract DACA65-03-C-0083

By
Solutions Industrial & Environmental Services, Inc.
3722 Benson Drive
Raleigh, North Carolina 27609

NORTH CAROLINA
LICENSED
SEAL
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GEOLOGIST
WALTER J. BECKWITH

29 October 2004

4.0 CONCLUSIONS

In 1993, twelve boring locations in the vicinity of the WAP and the former UST-9 located at the NE corner of Building 20 were identified (Table 2-1) as having soil impacted with VOCs and/or petroleum hydrocarbons at concentrations exceeding the target remedial end points that were calculated for each of the contaminants. For the VOCs, compounds exceeding their targets included benzene, 1,2-dichloroethane, trichloroethene, and tetrachloroethene. At that time, petroleum hydrocarbon concentrations in soil were quantified by SW-846 Method 418.1. Five boring locations were shown in the table as exceeding the calculated target remedial goal of 120 mg/kg for petroleum hydrocarbons.

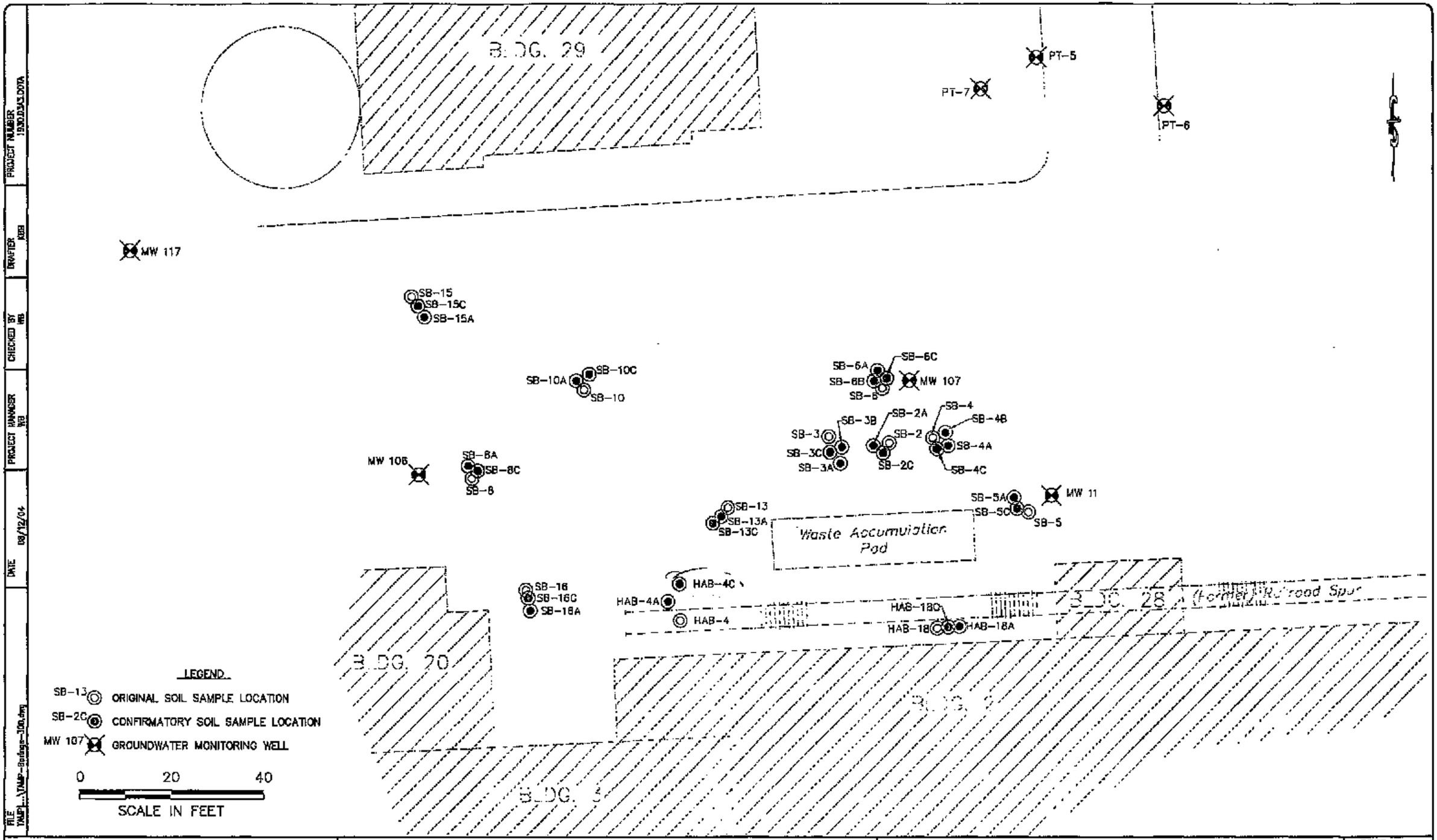
A Consent Agreement was executed in February 2004 between the Army and the State of North Carolina that outlined the requirements for site remediation leading to site closure. One of the requirements of the Agreement was to evaluate the success of the SVE system installed in 1995 in remediating soil in the vicinity of the WAP. As authorized by the Army, Solutions-IES advanced borings at each of the 12 locations previously sampled in 1993. Soil samples were recovered from each of the borings. The recovered samples were screened in the field with a photoionization detector and based on the field screening results; selected samples were analyzed of VOCs and petroleum hydrocarbons.

In 1997, the preferred method of quantifying hydrocarbons in soil was changed by North Carolina to Methods 3550/8015 and 5030/8015 for reporting of DRO and GRO hydrocarbons, respectively. The target remedial goals were established at 40 mg/kg for DRO and 10 mg/kg, for GRO. In order to compare petroleum hydrocarbon detections in 2004 to the 1993 data, petroleum hydrocarbons were analyzed by Methods 418.1 and 3550/8015 and 5030/8015.

Table 4-1 shows the results of the 2004 analyses. Two areas, HAB-4 and SB-18, were found to still have contaminants in soil that exceed the target remedial endpoints. HAB-4C was reported to contain three CVOCs, TCE, *cis*-1, 2-DCE, and 1,2-DCA, that exceed their applicable target remedial endpoints. TPH measured as DRO was reported at 42.7 mg/kg. This is just above the target remedial endpoint of 40 mg/kg. TPH by Method 418.1 and GRO by Method 5030/8015 were both below their target remedial endpoints. Samples collected in 1993 from SB-18 reported 941 and 344 mg/kg of TPH to be present at the 2-foot depth. PCE was reported at 110 µg/kg in the sample collected from a depth of 12.5 feet bgs. Both the TPH and PCE exceeded applicable target remedial endpoints. Borings opened in 2004 at SB-18 were opened to a depth of 3 feet because of the presence of a concrete slab that may be the footing for Building 2. With the exception of acetone, no other VOCs were reported above the 5 µg/kg minimum reporting level. TPH in the sample from 2 to 2.5 feet bgs (as determined by Method 418.1) is 1,030 mg/kg and by Method 8015 is 502 mg/kg (as DRO) and 61.5 mg/kg (as GRO). All three TPH values exceed target remedial endpoints. Because of hand auger refusal on concrete, evaluation of deeper subsurface conditions at this location was not possible.

Acetone and methylene chloride were reported for a number of samples and associated laboratory blanks in 1993 and 2004. Both are commonly observed laboratory artifacts. Neither acetone nor methylene chloride is retained as compounds of concern. If either is present in soil, their reported concentrations would be well below any calculated target remedial endpoints.

The 2004 data suggest operation of the AS/SVE system and natural processes have successfully reduced the concentration of contaminants in soil to levels that are below the target remedial endpoints for 10 of the 12 locations. Should further reduction of the contaminant concentrations be warranted along the north wall of Building No. 2, other remediation methods may prove to be more effective than continued use of the existing SVE/AS system.



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SOIL BORING LOCATIONS
TARHEEL ARMY MISSILE PLANT
BURLINGTON, NORTH CAROLINA
CONTRACT NO. DACA-65-03-C-0083

FIGURE: 3

Table 4-1
2004 Soil Boring Locations with Contaminants Exceeding Target Remedial Endpoints
Tarheel Army Missile Plant
Burlington, North Carolina

Compound or Analyte		Benzene	*cis* and *trans* 1,2-Dichloroethene	Trichloroethene	Tetrachloroethene	1,2 Dichloroethane	Total Petroleum Hydrocarbons (Method 418.1)	Total Petroleum Hydrocarbons (Method 8015)	
Soil Target Remedial Endpoint		9.3µg/kg	1,300 µg/kg	1,400 µg/kg	13 µg/kg	5µg/kg	120 mg/kg	40 mg/kg	10 mg/kg
Soil Boring Number	Depth (ft bgs)	Concentrations are in µg/kg					Concentrations are in mg/kg		
HAB-4	3'						19	42.7	<10
	6'-7'		3,232	39,100		10.8			
SB-18	2'-2.5'						1,030	502	61.5

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28

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EPA ID:	NC7210020544
Facility Name:	TAMP
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Document Type:	Remedial Action (RA)
Description:	Reports Pilot Test Groundwater
Date of Doc:	9/1/2005
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Box No:	10133

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REPORT OF GROUNDWATER REMEDIATION PILOT TEST EFFECTIVENESS FOR THE FORMER TARHEEL ARMY MISSILE PLANT

Prepared for:

U.S. Army Environmental Center
Aberdeen Proving Ground, Maryland 21010-5401
Contract DACA65-03-C-0083

Prepared by:

Solutions-IES, Inc.
1101 Nowell Road
Raleigh, North Carolina 27607

Solutions-IES Project No.: 1931.03A3.DOTA

November 2005

NORTH CAROLINA LICENSED 584 GEOLOGIST WALTER J. BECKWITH

Walter J. Beckwith, P.G.
Project Manager

Christie Zawtoold
Project Engineer

Solutions-IES
Industrial & Environmental Services

annular space was filled with 95 percent cement to 5 percent bentonite grout to approximately 24 inches from grade. Well completion diagrams are provided in Appendix A. Each well was developed by pumping to remove fines from the filter pack. Well yields were measured during well development to estimate aquifer conditions surrounding each well and determine possible injection parameters.

The eight wells were completed below grade in 2.5-ft by 2.5-ft vaults and were manifolded together as four well pairs to allow temporary recirculation of groundwater. To comply with a requirement of the UIC permit prohibiting re-injection of extracted contaminated groundwater brought above ground and not treated, all piping between each well pair ran underground in trenches between well pairs. A trench was opened between each well pair and a section of 4-inch PVC pipe was attached to each of the well pair casings using a PVC tee. A pneumatic double diaphragm pump was installed in each (pumping) well vault. The discharge line was threaded through the 4-inch pipe and into the paired injection well through a water meter. Figure 6 shows a schematic of the well-pair construction, and photographs 1 through 4 (Appendix B) show the well construction.

Two soil gas monitoring points were installed in shallow borings approximately 5 feet deep adjacent to the test area to measure possible accumulations of VOCs in the unsaturated soils. The soil gas points were constructed as 1-inch wells using a 2-foot section of PVC screen attached to PVC casing. Each soil gas point was finished in a manhole set flush with grade.

3.5 INJECTION ACTIVITIES

A two-step process was used to move emulsion throughout the targeted treatment zone. The first step involved diluting EOS® concentrate with potable water and injecting the diluted emulsion into the subsurface. The second step consisted of temporary recirculation of groundwater (chase water) to distribute the emulsion throughout the targeted treatment zone. The emulsion was diluted 1:4 by adding 55 gallons of EOS® concentrate to 220 gallons of potable water in a plastic tank (Photographs 5 and 6). The dilution water was obtained from a concrete storage tank at the site that was part of the facility fire suppression system. The dilute emulsion was either injected into the well from the tank using a double diaphragm pump or was gravity drained into the injection well. Water meters monitored injection volumes and pressure gauges monitored injection pressures. A schematic of the EOS® injection is provided in Figure 7.

With the SVE/AS system creating highly oxidative conditions in the test area, there was concern that dechlorinating bacteria would be needed to supplement the aquifer (bioaugmentation). Therefore,

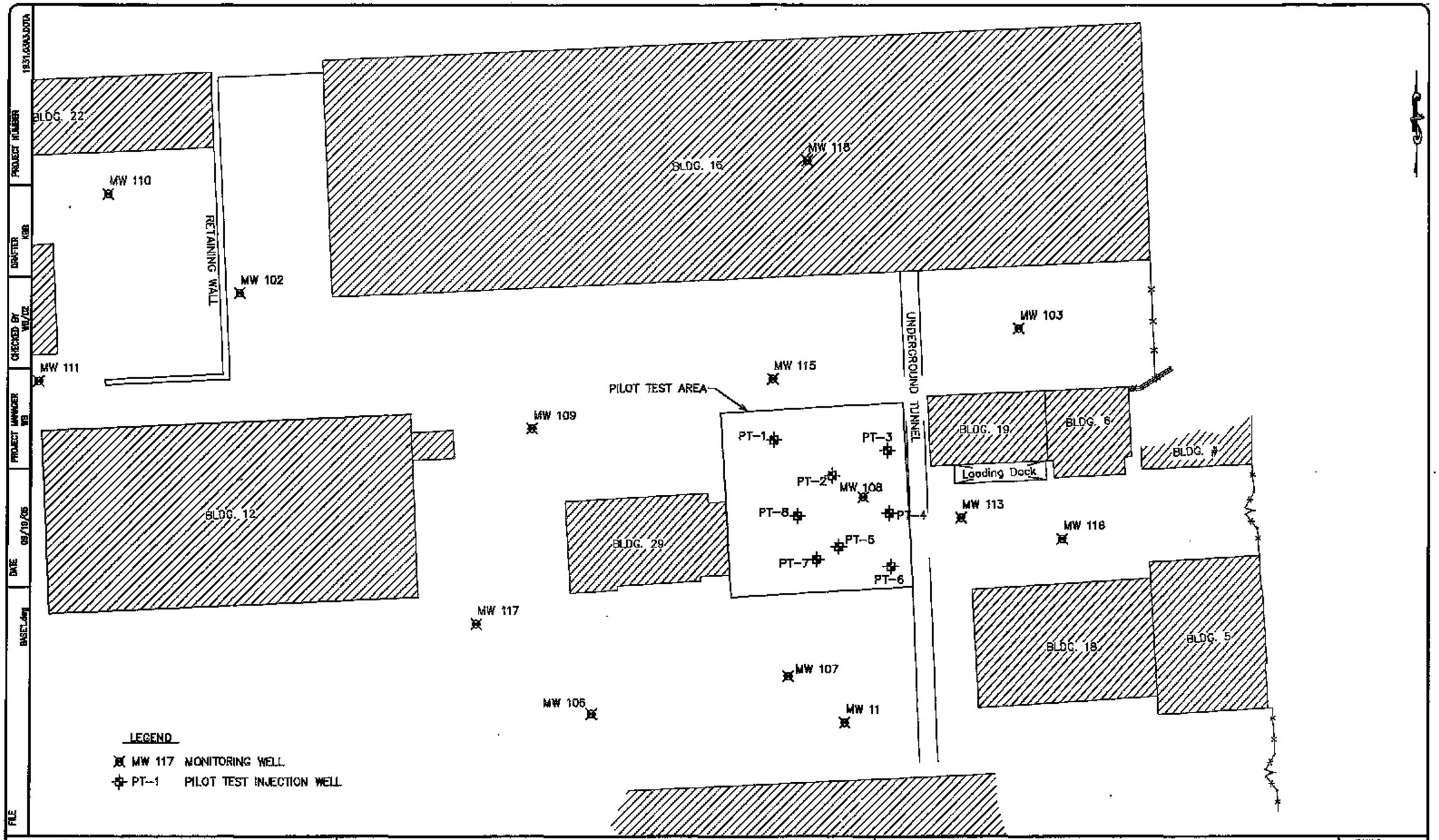
injection activities were implemented in two phases. During the first phase, emulsion was injected into four wells followed by recirculation to distribute the emulsion throughout the formation. After observing breakthrough in several wells, the injection was terminated to allow the emulsion to sorb to the aquifer materials. Monitoring was conducted to confirm anaerobic conditions had been established and to assess the need for bioaugmentation, as discussed in Sections 4.1 and 5.5. Based on the data, we decided not to proceed with bioaugmentation at that time. The injection/groundwater recirculation process was then reversed in the second phase to treat the remaining four wells.

The first phase of EOS® injection began June 29, 2004 with dilute EOS® being injected into wells PT-1, PT-4, PT-6, and PT-7. The EOS® injection was temporarily suspended from July 1 through July 6, 2004, when groundwater was pumped from PT-2, PT-3, PT-5, and PT-8 and injected into PT-1, PT-4, PT-6, and PT-7, to test the recirculation process. Injection of EOS® resumed on July 6 and continued until July 13, 2004 when dilute EOS® was observed in the sump of the adjacent pedestrian tunnel. The remaining partial tote of dilute EOS® was injected into PT-1 (the injection well located furthest from the tunnel). The water chase using recovered groundwater continued until August 16, 2004 when the first phase of injection/groundwater recirculation was terminated. Approximately 1,595 gallons (≈12,180 lbs) of EOS® concentrate and 83,000 gallons of groundwater were recirculated during the first treatment phase.

The second injection phase was initiated on September 10, 2004. The injection plan was revised due to the breakthrough of EOS® in the tunnel during the first injection phase. Wells located in the west half of the test area (PT-1, PT-2, PT-5, and PT-8) were injected with dilute EOS®. On September 16, 2004, emulsion was again identified in the tunnel sump and the remaining dilute emulsion was again injected into PT-1. Dilute EOS® injection was terminated on September 17, 2004. The second phase water chase began September 17 and terminated on October 12, 2004. Groundwater was recovered from PT-3, PT-4, PT-6, and PT-7 and injected into PT-1, PT-2, PT-5, and PT-8. An additional 875 gallons (≈6,300 lbs) of EOS® and approximately 80,000 gallons of groundwater were recirculated during the second phase.

Throughout the pilot test, injection rates and volumes were measured with totalizing flow meters. Line pressures were maintained at less than 5 psi as determined by a pressure gauge mounted on the injection pipe. Mounding of the water level around the injection wells was monitored by periodically measuring the depth to water in each injection well and comparing the reading with pre-injection measurements. Injection rates were regulated with a valve on the discharge pipe. A data recorder/pump controller was initially installed in wells PT-7 and PT-8 at the beginning of the water chase to monitor groundwater mounding/drawdown and protect against surface breakthrough. The instrumentation was found not to be

necessary. The pneumatic pumps were able to maintain 10 to 20 feet of drawdown in the recovery wells. This had a regulating effect on the injection. Essentially, water was injected at the same rate the formation yielded water. Although actual injection volumes were less than original design, the design objectives were met as evidenced by emulsion breakthrough and the performance monitoring results (Section 5.0).



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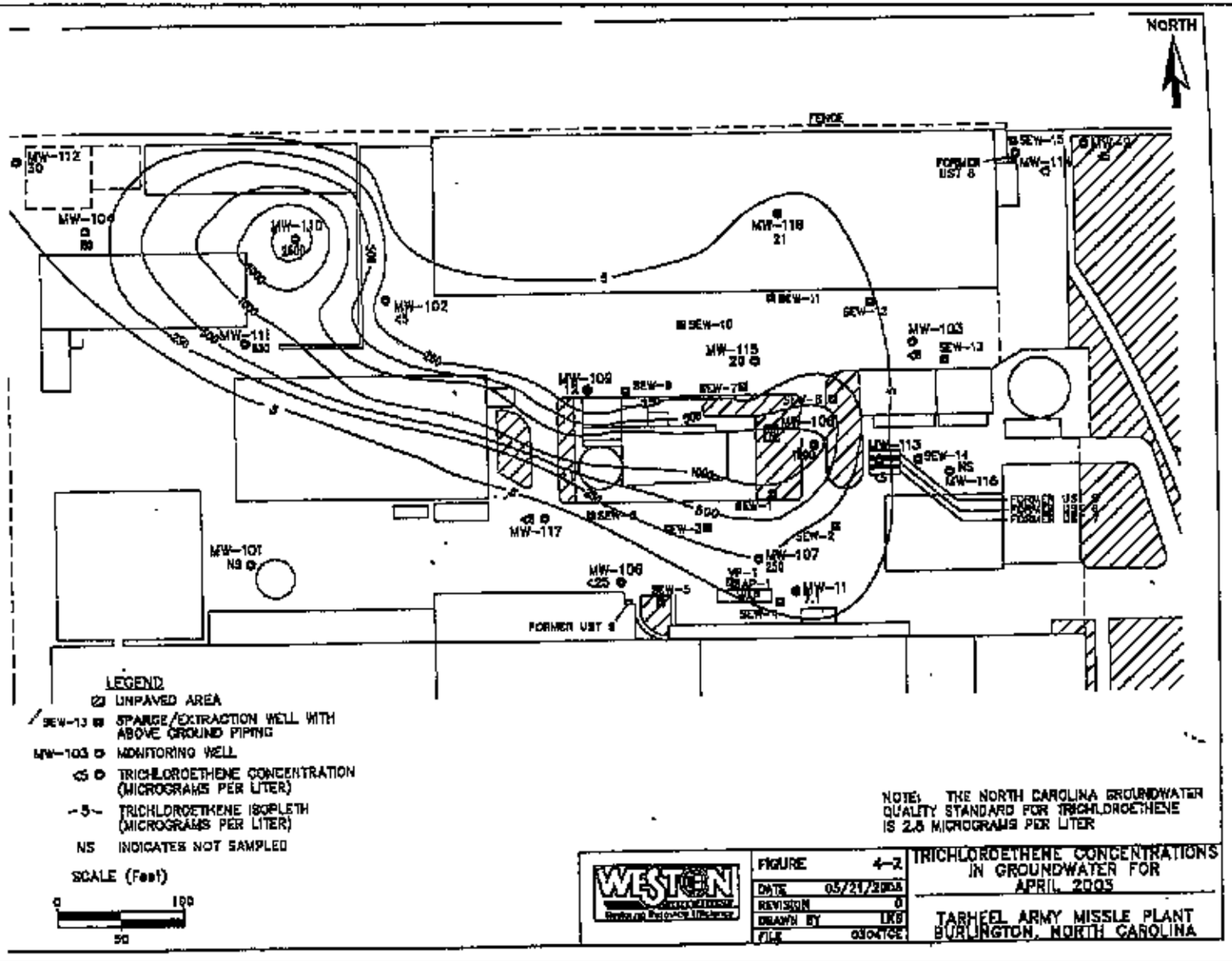
0 50 100
SCALE IN FEET

PILOT TEST AREA
(FORMER) TARHEEL ARMY MISSILE PLANT
GRAHAM-HOPEDALE ROAD
BURLINGTON, NORTH CAROLINA

FIGURE:
4



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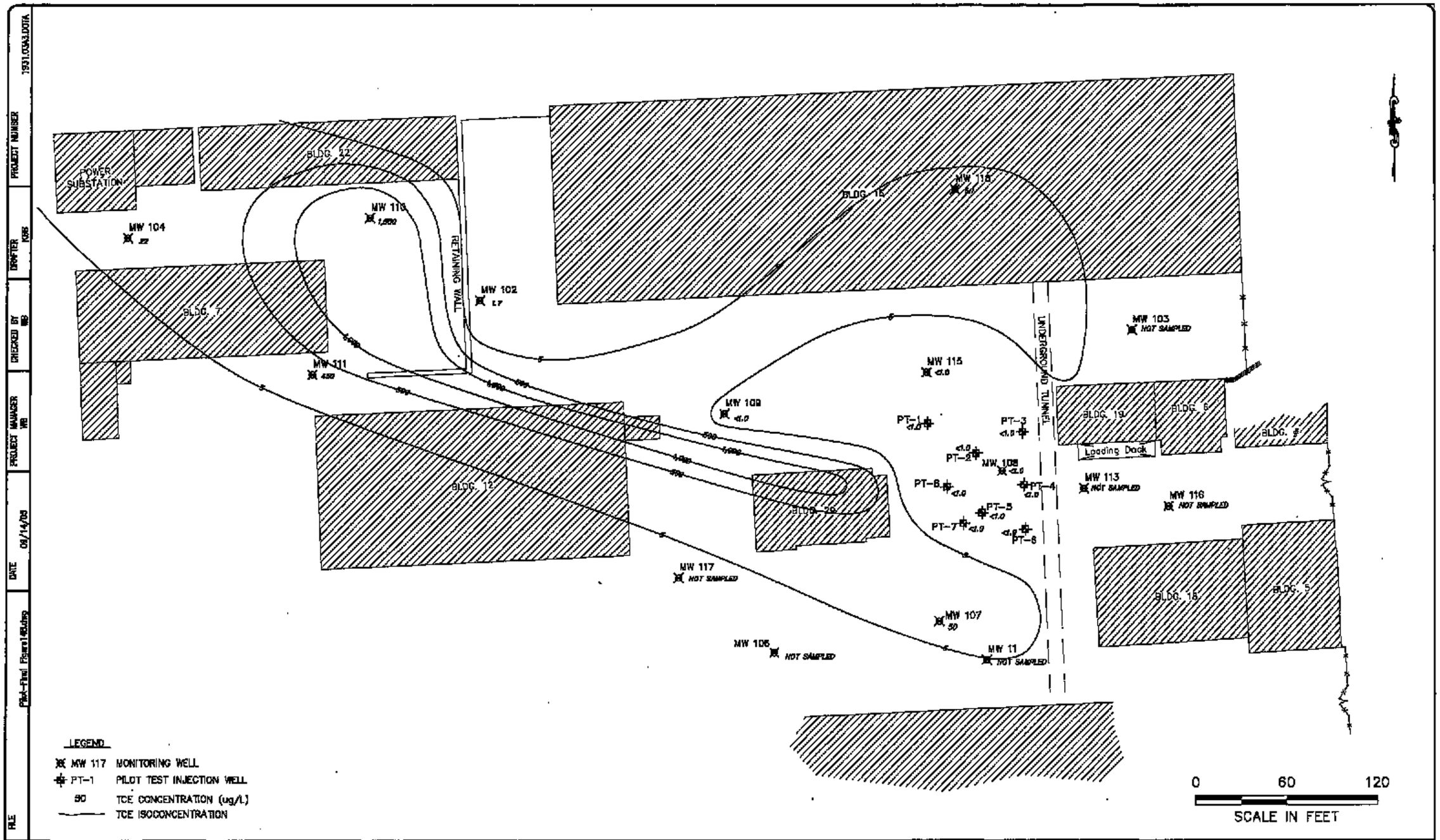
TCE ISOCONCENTRATION MAP (µg/L) – APRIL 2003

(FORMER) TARHEEL ARMY MISSILE PLANT
GRAHAM-HOPEDALE ROAD
BURLINGTON, NORTH CAROLINA

FIGURE:
14a



PROJECT NUMBER 1931.03A3.DOTA
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PROJECT MANAGER WB
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NOTE:
ISOCONCENTRATIONS OUTSIDE PILOT TEST AREA ARE BASED ON PLUME CONFIGURATION IN 2003 USING AUGUST, 2005 DATA.

TCE ISOCONCENTRATION MAP (ug/L) – AUGUST 16, 2005

(FORMER) TARHEEL ARMY MISSILE PLANT
GRAHAM–HOPEDALE ROAD
BURLINGTON, NORTH CAROLINA

FIGURE: 14b

TABLE 3
Summary of CVOCs, Ethane, and Ethene in Groundwater (µg/L)
EOS Pilot Test Area
(Former) Turbeel Army Missile Plant
Burlington, North Carolina

Well ID	Sample Date	Days Since Start of EOS Injection (Days)	Months Since End of EOS Injection (Months)	Chlorinated Ethanes				Chlorinated Ethenes						Halomethanes			Light HC Gases	
				1,1,1-TCA (µg/L)	1,2-DCA (µg/L)	1,1-DCA (µg/L)	CA (µg/L)	PCE (µg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	1,1-DCE (µg/L)	Vinyl Chloride (µg/L)	Chloro-form (µg/L)	Methylene Chloride (µg/L)	Trichloro-fluoromethane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
2L Standards				200	0.38	70	2,800	0.7	2.8	70	100	7	0.015	70	4.6	2,100	NE	NE
PILOT TEST WELLS																		
PT-1	12/1/2004	155	2	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	140	<1.0	<1.0	3.2	<5.0	<5.0	<1.0	0.05	0.10
	2/2/2005	218	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	80	<1.0	<1.0	5.1	<5.0	<5.0	<1.0	<0.01	0.10
	4/14/2005	289	6	<1.0	<1.0	<1.0	<1.0	<1.0	1.6	22	<1.0	<1.0	7.1	<5.0	<5.0	<1.0	<0.01	0.17
	6/23/2005	359	8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.5	<1.0	<1.0	4	<5.0	<5.0	<1.0	NA	NA
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	0.13
PT-2	12/1/2004	155	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.5	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	0.07
	4/14/2005	289	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.6	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	0.03
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.4	<1.0	<1.0	4.0	<5.0	<5.0	<1.0	0.01	0.42
PT-3	6/22/2004	-7	-4	<1.0	<1.0	1.17	<1.0	6.77	176	39.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.01	0.04
	8/18/2004	50	-2	<1.0	<1.0	<1.0	<1.0	<1.0	3.76	6.9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.03	0.15
	10/14/2004	107	0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	12.0	<1.0	<1.0	<1.0	<5.0	520	<1.0	0.02	0.23
	12/1/2004	155	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.3	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	0.03
	4/14/2005	289	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	<0.01
	6/23/2005	359	8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7.9	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	0.04
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.5	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	0.07
PT-4	12/1/2004	155	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.2	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	0.06
	4/14/2005	289	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	<0.01
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	0.05
PT-5	11/30/2004	154	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	46	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	0.25
	4/14/2005	289	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	44	<1.0	<1.0	3.6	<5.0	<5.0	<1.0	<0.01	0.09
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.3	<1.0	<1.0	5.2	<5.0	<5.0	<1.0	0.02	0.03
PT-6	6/22/2004	-7	-4	<1.0	<1.0	<1.0	<1.0	1.17	30.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	0.02
	8/18/2004	50	-2	<1.0	<1.0	<1.0	<1.0	1.26	94.6	9.49	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	0.03
	10/14/2004	107	0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.8	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	0.01
	12/1/2004	155	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	<0.01
	4/14/2005	289	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	<0.01
	6/23/2005	359	8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	0.03	0.03
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	0.02

TABLE 3
Summary of CVOCs, Ethane, and Ethene in Groundwater (µg/L)
EOS Pilot Test Area
(Former) Tarheel Army Missile Plant
Burlington, North Carolina

Well ID	Sample Date	Days Since Start of EOS Injection (Days)	Months Since End of EOS Injection (Months)	Chlorinated Ethanes				Chlorinated Ethenes						Halomethanes			Light HC Gases	
				1,1,1-TCA (µg/L)	1,2-DCA (µg/L)	1,1-DCA (µg/L)	CA (µg/L)	PCE (µg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	1,1-DCE (µg/L)	Vinyl Chloride (µg/L)	Chloro-form (µg/L)	Methylene Chloride (µg/L)	Trichloro-fluoromethane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
2L Standards				200	0.38	70	2,800	0.7	2.8	70	100	7	0.015	70	4.6	2,100	NE	NE
PT-7	11/30/2004	154	2	<10	<10	<10	<10	<10	<10	490	<10	<10	12	<50	<50	<10	0.03	0.25
	2/2/2005	218	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	130	5.7	<1.0	200	<5.0	<5.0	<1.0	<0.01	0.69
	4/14/2005	289	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.2	2.8	<1.0	200	<5.0	<5.0	<1.0	<0.01	3.13
	6/23/2005	359	8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.2	1.8	<1.0	200	<5.0	<5.0	<1.0	NA	NA
	8/16/2005	413	10	<1.0	<1.0	<1.0	2.1	<1.0	<1.0	6.2	1.0	<1.0	190	<5.0	<5.0	<1.0	<0.01	3.66
PT-8	6/22/2004	-7	-4	<1.0	3.33	1.76	<1.0	49.8	240	161	2.61	<1.0	17.9	<1.0	<1.0	3.38	0.15	0.25
	8/18/2004	50	-2	<1.0	2.16	7.96	<1.0	<1.0	47.1	2162	88.2	4.98	<1.0	<1.0	2.12	<1.0	0.16	0.56
	10/14/2004	107	0	<1.0	1.3	<1.0	<1.0	<1.0	1.2	300	1.6	1.3	<1.0	<5.0	<5.0	<1.0	0.17	0.50
	12/1/2004	155	2	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	430	<5.0	<5.0	20	<25	<25	<5.0	0.04	0.58
	2/2/2005	218	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	190	3.4	<1.0	110	<5.0	<5.0	<1.0	<0.01	0.35
	4/14/2005	289	6	<1.0	<1.0	<1.0	1.4	<1.0	<1.0	1.9	3.4	<1.0	130	<5.0	<5.0	<1.0	<0.01	0.45
	6/23/2005	359	8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	2.0	<1.0	68	<5.0	<5.0	<1.0	<0.01	0.55
	8/16/2005	413	10	<1.0	<1.0	<1.0	1.3	<1.0	<1.0	1.2	1.8	<1.0	80	<5.0	<5.0	<1.0	<0.01	0.72
PILOT TEST AREA MONITORING WELL																		
MW-108	4/14/04*	-76	-6	<10	<10	5.6 J	<10	150	1,600	310	<10	<10	<10	8.3 J	<10	<10	NA	NA
	4/14/2004	-76	-6	<1.0	1.57	4.04	<1.0	93.4	1,300	189	1.01	2.05	<1	6.03	<1	2.83	NA	NA
	6/22/2004	-7	-4	<1.0	1.88	4.34	<1.0	39.4	1,690	252	1.21	1.67	<1	7.65	<1	1.29	0.02	<10
	8/18/2004	50	-2	<1.0	<1.0	1.74	<1.0	1.32	13.9	232	13.20	<1.0	<1	<1	<1	<1	0.14	0.32
	10/14/2004	107	0	<10	<10	<10	<10	<10	<10	77	<10	<10	<10	<50	2100	<10	0.16	0.32
	11/30/2004	154	2	<1.0	<1.0	<1.0	<1.0	<1.0	12	82	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	0.01	0.15
(Duplicate)	11/30/2004	154	2	<1.0	<1.0	<1.0	<1.0	<1.0	14	71	<1.0	<1.0	<1	<5	<5	<1	NA	NA
	2/2/2005	218	4	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	120	<5.0	<5.0	86	<25	<25	<5.0	<0.01	0.07
(Duplicate)	2/2/2005	218	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	130	<1.0	<1.0	96	<5	<5	<1	NA	NA
	4/13/2005	288	6	<1.0	<1.0	<1.0	<1.0	3.8	1.6	42	<1.0	<1.0	60	<5.0	<5.0	<1.0	NA	0.25
	6/22/2005	358	8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	16	<1.0	<1.0	53	<5.0	<5.0	<1.0	<0.01	0.14
(Duplicate)	6/23/2005	359	8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	20	<1.0	<1.0	89	<5	<5	<1	NA	NA
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.5	<1.0	<1.0	78	<5.0	<5.0	<1.0	<0.01	0.18

TABLE 3
Summary of CVOCs, Ethane, and Ethene in Groundwater (µg/L)
EOS Pilot Test Area
(Former) Tarheel Army Missile Plant
Burlington, North Carolina

Well ID	Sample Date	Days Since Start of EOS Injection (Days)	Months Since End of EOS Injection (Months)	Chlorinated Ethanes				Chlorinated Ethenes						Halomethanes			Light HC Gases	
				1,1,1-TCA (µg/L)	1,2-DCA (µg/L)	1,1-DCA (µg/L)	CA (µg/L)	PCE (µg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	1,1-DCE (µg/L)	Vinyl Chloride (µg/L)	Chloro-form (µg/L)	Methylene Chloride (µg/L)	Trichloro-fluoromethane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
2L Standards				200	0.38	70	2,800	0.7	2.8	70	100	7	0.015	70	4.6	2,100	NE	NE
DOWNGRADIENT MONITOR WELLS																		
MW-102	4/14/04*	-76	-6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	NA	NA
	6/22/2004	-7	-4	<1.0	<1.0	<1.0	<1.0	<1.0	1.46	<1.0	<1.0	<1.0	<1	<1	<1	<1	<10	<10
	8/18/2004	50	-2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<10	<10
	10/14/2004	107	0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	<0.01
	11/30/2004	154	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	<0.01
	2/3/2005	219	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	NA	NA
	4/13/2005	288	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	NA	NA
	6/22/2005	358	8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	NA	NA
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	<1.0	1.7	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	0.01	0.02
MW-115	4/14/04*	-76	-6	<1.0	<1.0	<1.0	<1.0	14	92	12	<1.0	<1.0	<1.0	<1	<1	<1	NA	NA
	11/30/2004	154	2	<1.0	<1.0	<1.0	<1.0	1.5	9.2	33	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	0.06
	2/2/2005	218	4	<1.0	<1.0	<1.0	<1.0	<1.0	2.0	14	<1.0	<1.0	2.2	<5.0	<5.0	<1.0	<0.01	<0.01
	4/13/2005	288	6	<1.0	<1.0	<1.0	<1.0	<1.0	1	3.8	<1.0	<1.0	12	<5.0	<5.0	<1.0	0.19	0.11
	6/22/2005	358	8	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	2.6	<1.0	<1.0	4.3	<5.0	<5.0	<1.0	0.02	0.03
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.4	<5.0	<5.0	<1.0	0.11	0.11
MW-118	4/14/04*	-76	-6	<1.0	<1.0	0.59 J	<1.0	32	14	8.3	<1.0	2.0	<1.0	<1	<1	<1	NA	NA
	6/22/2004	-7	-4	<1.0	<1.0	1.26	<1.0	12.8	15.1	6.54	<1.0	2.28	<1.0	<1	<1	<1	0.04	0.03
	8/18/2004	50	-2	<1.0	<1.0	1.86	<1.0	27.3	10.7	7.1	<1.0	2.45	<1.0	<1	<1	<1	0.02	<10
	10/14/2004	107	0	<1.0	<1.0	<1.0	<1.0	26.0	12.0	7.9	<1.0	1.3	<1.0	<5.0	<5.0	<1.0	0.04	0.02
	11/30/2004	154	2	<1.0	<1.0	<1.0	<1.0	26	14	12	1	1.4	<1.0	<5.0	<5.0	<1.0	0.09	0.06
	2/3/2005	219	4	<1.0	<1.0	<1.0	<1.0	19	10	18	<1.0	1.4	<1.0	<5.0	<5.0	<1.0	NA	NA
	4/14/2005	289	6	<1.0	<1.0	<1.0	<1.0	18	11	19	<1.0	1.1	<1.0	<5.0	<5.0	<1.0	<0.01	<0.01
	6/22/2005	358	8	<1.0	<1.0	<1.0	<1.0	16	9.6	19	1.1	<1.0	2.5	<5.0	<5.0	<1.0	0.17	0.05
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	12	6.1	25	<1.0	<1.0	14	<5.0	<5.0	<1.0	0.21	0.15

Notes:
NE denotes not established.
NA denotes not analyzed.
* - Results provided by Weston Solutions. Source: Table 4-1, First Semi-Annual Groundwater Sampling Report 2004.
Shaded concentrations exceed the 2L Standards.

TABLE 7
Summary of Field Measured Groundwater Parameters
EOS® Pilot Test Area
(Former) Tarheel Army Missile Plant
Burlington, North Carolina

Well ID	Sample Date	Days Since Start of EOS® (Days)	Months Since End of EOS® Injection (Months)	Dissolved Oxygen (mg/L)	ORP (mV)	pH (Standard Units)	Temperature (°C)	Conductivity (µS/cm)
PILOT TEST WELLS								
PT-1	12/1/2004	155	2	NM	-94.2	6.00	18.7	1290
	2/2/2005	218	4	0.05	-127.6	6.32	15.1	1129
	4/14/2005	289	6	0.09	92.5	6.96	15.2	1429
	6/23/2005	359	8	0.15	-184.4	6.63	18.4	1058
	8/16/2005	413	10	0.23	-220.3	6.38	20.6	948
PT-2	12/1/2004	155	2	NM	-71.3	6.68	18.8	876
	2/2/2005	218	4	0.06	-95.7	6.35	15.6	514
	4/14/2005	289	6	0.22	24.9	6.98	14.8	390
	6/23/2005	359	8	0.26	-212.7	6.39	18.2	511
	8/16/2005	413	10	0.22	-16.9	6.41	22.1	700
PT-3	6/22/2004	-7	-4	6.78	139	6.78	19.3	732
	8/5/2004	37	-2	1.48	-46.3	5.53	22.1	1261
	8/18/2004	50	-2	0.14	-209	7.09	26.2	1400
	10/14/2004	107	0	0.39	-65	7.02	23.5	510
	12/1/2004	155	2	NM	-2.0	6.84	20.8	341
	2/2/2005	218	4	0.49	-45.2	6.30	17.2	154.4
	4/14/2005	289	6	0.41	21.9	7.65	16.8	179
	6/23/2005	359	8	0.37	-123.1	6.46	19.4	149.9
	8/16/2005	413	10	0.23	-37.8	6.48	20.7	161
PT-4	12/1/2004	155	2	NM	-106.5	6.94	20.0	296
	2/2/2005	218	4	0.64	-135.5	6.25	17.6	182.9
	4/14/2005	289	6	0.77	22.9	6.57	17.3	209
	6/23/2005	359	8	0.89	-226.9	6.32	19.0	192.8
	8/16/2005	413	10	0.21	1.7	6.10	20.7	178
PT-5	11/30/2004	154	2	NM	-100.1	6.07	20.6	696
	2/2/2005	218	4	0.10	-70.3	6.06	17.1	511
	4/14/2005	289	6	0.56	36.2	6.56	18.0	681
	6/23/2005	359	8	0.41	-88.5	6.48	18.9	691
	8/16/2005	413	10	0.21	19.9	6.32	21.0	407
PT-6	6/22/2004	-7	-4	6.05	495	5.00	22.2	495
	8/5/2004	37	-2	0.37	-180	5.99	21.2	528
	8/18/2004	50	-2	0.43	-181.5	7.06	26.5	167
	10/14/2004	107	0	5.61	56.3	7.66	22	368
	12/1/2004	155	2	NM	26.5	6.20	19.7	272
	2/2/2005	218	4	5.02	-112.2	7.23	16.1	128.8
	4/14/2005	289	6	1.09	11.4	7.92	17.8	134
	6/23/2005	359	8	1.31	-294.9	6.54	19.2	154.3
	8/16/2005	413	10	0.23	7.6	6.91	21.4	173
PT-7	8/5/2004	37	-2	0.32	-194.1	6.09	20.6	1397
	11/30/2004	154	2	NM	-146.1	6.61	19.6	1410
	2/2/2005	218	4	0.11	-101.3	6.49	16.7	662
	4/14/2005	289	6	0.36	8.6	7.44	17.6	717
	6/23/2005	359	8	0.19	-238.6	6.92	18.3	1013
	8/16/2005	413	10	0.25	-91.1	6.61	20.6	1238

TABLE 7
Summary of Field Measured Groundwater Parameters
EOS® Pilot Test Area
(Former) Tarheel Army Missile Plant
Burlington, North Carolina

Well ID	Sample Date	Days Since Start of EOS® (Days)	Months Since End of EOS® Injection (Months)	Dissolved Oxygen (mg/L)	ORP (mV)	pH (Standard Units)	Temperature (°C)	Conductivity (µS/cm)
PT-8	6/22/2004	-7	-4	0.16	135	1.82	18.1	705
	8/18/2004	50	-2	0.14	-213	6.61	24.9	525
	10/14/2004	107	0	0.51	-111.3	6.20	21.7	923
	12/1/2004	155	2	NM	-106.5	6.03	18.6	1085
	2/2/2005	218	4	0.08	-109	6.29	15.7	983
	4/14/2005	289	6	0.10	28.1	7.12	15.7	1344
	6/23/2005	359	8	0.08	-200.5	6.67	18.0	1142
	8/16/2005	413	10	0.19	-223.1	6.48	20.3	909
PILOT TEST AREA MONITORING WELL								
MW-108	4/14/2004	-76	-6	5.71	96.9	6.77	13.5	355
	6/22/2004	-7	-4	2.67	171.0	6.10	19.3	689
	8/18/2004	50	-2	0.13	-178.5	6.31	26.0	539
	10/14/2004	107	0	0.46	-80.4	5.61	23.4	1,324
	11/30/2004	154	2	NM	-91.4	6.10	18.0	602
	2/2/2005	218	4	0.11	-88.0	6.21	16.5	900
	4/13/2005	288	6	0.30	90.2	6.18	14.8	903
	6/22/2005	358	8	0.22	-246.7	6.56	19.4	974
	8/16/2005	413	10	0.24	-173.0	6.47	23.5	778
DOWNGRADIENT MONITORING WELLS								
MW-102	8/5/2004	37	-2	5.76	140.2	5.73	22.5	195.3
	8/18/2004	50	-2	7.19	58.6	6.05	24.1	67.8
	10/14/2004	107	0	6.96	105.4	5.90	23.8	131.3
	11/30/2004	154	2	NM	142.0	5.55	19.9	79.6
	2/3/2005	219	4	6.74	44.5	6.09	14.3	86.1
	4/13/2005	288	6	7.76	135.8	6.51	15.4	178.3
	6/22/2005	358	8	5.42	29.7	5.84	20.6	73.4
	8/16/2005	413	10	5.87	272.0	6.61	23	71.1
MW-115	11/30/2004	154	2	NM	38.9	4.76	20.5	1090
	2/2/2005	218	4	0.33	18.3	4.95	14.6	1088
	4/13/2005	288	6	0.12	96.8	6.23	15.8	1081
	6/22/2005	358	8	0.04	-162.2	6.41	21.1	1040
	8/16/2005	413	10	0.21	-108.0	6.08	20.6	701
MW-118	8/5/2004	37	-2	0.19	109.9	6.41	19.6	442
	8/18/2004	50	-2	0.15	64.6	6.43	21.7	140.9
	10/14/2004	107	0	0.06	81.9	6.1	21.0	206
	11/30/2004	154	2	NM	6.25	6.42	19.3	226
	2/3/2005	219	4	0.66	-104.6	6.47	17.4	247
	4/14/2005	289	6	0.49	133.6	6.97	17.3	282
	6/22/2005	358	8	0.58	-63.2	6.64	18.2	339
	8/16/2005	413	10	0.25	14.0	6.30	20.6	332

Note:
NM denotes not measured.

TABLE 13
Summary of CVOCs, Ethane, and Ethene in Site-Wide Monitoring Wells
(Former) Tarheel Army Missile Plant
Burlington, North Carolina

Well Identification	Sample Date	Days Since Start of EOS[a] (Days)	Months Since End of EOS[a] Injection (Months)	Chlorinated Ethanes				Chlorinated Ethenes						Other Chlorinated			Light HC Gases	
				1,1,1-TCA (µg/L)	1,2-DCA (µg/L)	1,1-DCA (µg/L)	CA (µg/L)	PCE (µg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	1,1-DCE (µg/L)	Vinyl Chloride (µg/L)	Chloro-form (µg/L)	Methylene Chloride (µg/L)	Trichloro-fluoromethane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
2L Standards				200	0.38	70	2,800	0.7	2.8	70	100	7	0.015	70	4.6	2,100	NE	NE
MW-102	4/14/04*	-76	-6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	NA	NA
	6/22/2004	-7	-4	<1.0	<1.0	<1.0	<1.0	<1.0	1.46	<1.0	<1.0	<1.0	<1	<1	<1	<1	<10	<10
	8/18/2004	50	-2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<10	<10
	10/14/2004	107	0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	<0.01
	11/30/2004	154	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	<0.01
	2/3/2005	219	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	NA	NA
	4/13/2005	288	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	NA	NA
	6/22/2005	358	8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	NA	NA
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	<1.0	1.7	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	0.01	0.02
MW-104 (Compliance Well)	4/14/04*	-76	-6	<2	<2	<2	<2	5.1	86	1.2 J	<2	<2	<2	1.1 J	<2	<2	NA	NA
	4/16/2004	-76	-6	<1	<1	<1	<1	25.0	61	2.61	<1	2.95	<1	1.99	<1	<1	NA	NA
	11/30/2004	154	2	<1.0	<1.0	<1.0	<1.0	5.5	68	1.1	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	0.01	<0.01
	2/2/2005	218	4	<1.0	<1.0	<1.0	<1.0	5.6	81	1.1	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	NA	NA
	4/13/2005	288	6	<1.0	<1.0	<1.0	<1.0	4.9	58	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	NA	NA
	8/15/2005	412	10	<1.0	<1.0	<1.0	<1.0	1.5	22	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	NA	NA
MW-107 (Compliance Well)	4/14/04*	-76	-6	<5	<5	<5	<5	400	750	770	<5	<5	<5	<5	<5	2.6 J	NA	NA
	4/14/2004	-76	-6	<1	<1	<1	<1	271	427	438	1.90	<1	<1	1.60	<1	2.72	NA	NA
	11/30/2004	154	2	<1.0	<1.0	<1.0	<1.0	180	160	78	<1.0	<1.0	<1.0	<5.0	<5.0	1.3	<0.01	0.01
	2/2/2005	218	4	<1.0	<1.0	<1.0	<1.0	220	160	93	<1.0	<1.0	<1.0	<5.0	<5.0	1.4	NA	NA
	4/13/2005	288	6	<1.0	<1.0	<1.0	<1.0	110	95	75	<1.0	<1.0	<1.0	<5.0	<5.0	1.4	NA	NA
	8/16/2005	413	10	<2.0	<2.0	<2.0	<2.0	62	50	63	<2.0	<2.0	<2.0	<10	<10	<2.0	NA	NA
MW-108 (Compliance Well)	4/14/04*	-76	-6	<10	<10	5.6 J	<10	150	1,600	310	<10	<10	<10	8.3 J	<10	<10	NA	NA
	4/14/2004	-76	-6	<1.0	1.57	4.04	<1.0	93.4	1,300	189	1.01	2.05	<1	6.03	<1	2.83	NA	NA
	6/22/2004	-7	-4	<1.0	1.88	4.34	<1.0	39.4	1,650	252	1.21	1.67	<1	7.65	<1	1.29	0.02	<10
	8/18/2004	50	-2	<1.0	<1.0	1.74	<1.0	1.32	13.9	232	13.20	<1.0	<1	<1	<1	<1	0.14	0.32
	10/14/2004	107	0	<10	<10	<10	<10	<10	<10	77	<10	<10	<10	<50	2100	<10	0.16	0.32
	11/30/2004	154	2	<1.0	<1.0	<1.0	<1.0	<1.0	12	82	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	0.01	0.15
(Duplicate)	11/30/2004	154	2	<1.0	<1.0	<1.0	<1.0	<1.0	14	71	<1.0	<1.0	<1	<5	<5	<1	NA	NA
	2/2/2005	218	4	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	120	<5.0	<5.0	86	<25	<25	<5.0	<0.01	0.07
(Duplicate)	2/2/2005	218	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	130	<1.0	<1.0	96	<5	<5	<1	NA	NA
	4/13/2005	288	6	<1.0	<1.0	<1.0	<1.0	3.8	1.6	42	<1.0	<1.0	60	<5.0	<5.0	<1.0	NA	0.25
	6/22/2005	358	8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	16	<1.0	<1.0	53	<5.0	<5.0	<1.0	<0.01	0.14
(Duplicate)	6/23/2005	359	8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	29	<1.0	<1.0	89	<5	<5	<1	NA	NA
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.5	<1.0	<1.0	78	<5.0	<5.0	<1.0	<0.01	0.18

TABLE 13
Summary of CVOCs, Ethane, and Ethene in Site-Wide Monitoring Wells
(Former) Tarheel Army Missile Plant
Burlington, North Carolina

Well Identification	Sample Date	Days Since Start of EOS® (Days)	Months Since End of EOS® Injection (Months)	Chlorinated Ethanes				Chlorinated Ethenes						Other Chlorinated			Light HC Gases	
				1,1,1-TCA (µg/L)	1,2-DCA (µg/L)	1,1-DCA (µg/L)	CA (µg/L)	PCE (µg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	1,1-DCE (µg/L)	Vinyl Chloride (µg/L)	Chloroform (µg/L)	Methylene Chloride (µg/L)	Trichlorofluoromethane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
2L Standards				200	0.38	70	2,800	0.7	2.8	70	100	7	0.015	70	4.6	2,100	NE	NE
MW-109	4/14/04*	-76	-6	<1	<1	<1	<1	5.1	45	7.2	<1	<1	<1	<1	<1	<1	NA	NA
	11/30/2004	154	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	12	<1.0	<1.0	19	<5.0	<5.0	<1.0	0.08	0.13
	2/3/2005	219	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	<1.0	<1.0	22	<5.0	<5.0	<1.0	NA	NA
	4/13/2005	288	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.9	<1.0	<1.0	18	<5.0	<5.0	<1.0	NA	NA
	6/22/2005	358	8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	18	<5.0	<5.0	<1.0	NA	NA
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	28	<5.0	<5.0	<1.0	0.08	0.31
MW-110 (Compliance Well)	4/14/04*	-76	-6	<10	<10	<10	<10	60	200	63	<10	21	<10	5.8 J	<10	<10	NA	NA
	4/14/2004	-76	-6	<1	2.68	2.74	<1	109	1,750	53.7	<1	20.7	<1	4.57	<1	<1	NA	NA
	2/2/2005	218	4	<1.0	2.50	<1.0	<1.0	180	5,100	52.0	<1.0	16.0	<1.0	5.30	<5.0	<1.0	NA	NA
	4/13/2005	288	6	<1.0	3	2.9	<1.0	150	1,700	52	<1.0	19	<1.0	<5.0	<5.0	<1.0	NA	NA
	8/15/2005	412	10	<20	<20	<20	<20	37	1,900	44	<20	<20	<20	<100	<100	<20	NA	NA
MW-111 (Compliance Well)	4/14/04*	-76	-6	<5	<5	<5	<5	120	670	3.6 J	<5	8.3	<5	2.8 J	<5	<5	NA	NA
	4/14/2004	-76	-6	1.05	<1	<1	<1	77.4	401	2.46	<1	7.14	<1	1.98	<1	<1	NA	NA
	11/30/2004	154	2	<1.0	<1.0	<1.0	<1.0	180	560	2.8	<1.0	5.8	<1.0	<5.0	<5.0	<1.0	0.02	<0.01
	2/2/2005	218	4	<5.0	<5.0	<5.0	<5.0	93	520	<5.0	<5.0	6.1	<5.0	<25	<25	<5.0	NA	NA
	4/13/2005	288	6	<50	<50	<50	<50	110	670	<50	<50	<50	<50	<250	<250	<50	NA	NA
	8/15/2005	412	10	<5.0	<5.0	<5.0	<5.0	79	450	<5.0	<5.0	5.5	<5.0	<25	<25	<5.0	NA	NA
MW-115	4/14/04*	-76	-6	<1.0	<1.0	<1.0	<1.0	14	92	12	<1.0	<1.0	<1.0	<1	<1	<1	NA	NA
	11/30/2004	154	2	<1.0	<1.0	<1.0	<1.0	1.5	9.3	33	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	0.06
	2/2/2005	218	4	<1.0	<1.0	<1.0	<1.0	<1.0	2.0	14	<1.0	<1.0	2.2	<5.0	<5.0	<1.0	<0.01	<0.01
	4/13/2005	288	6	<1.0	<1.0	<1.0	<1.0	<1.0	1	3.8	<1.0	<1.0	12	<5.0	<5.0	<1.0	0.19	0.11
	6/22/2005	358	8	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	2.6	<1.0	<1.0	4.3	<5.0	<5.0	<1.0	0.02	0.03
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.4	<5.0	<5.0	<1.0	0.11	0.11
MW-118	4/14/04*	-76	-6	<1.0	<1.0	0.59 J	<1.0	32	14	8.3	<1.0	2.0	<1.0	<1	<1	<1	NA	NA
	6/22/2004	-7	-4	<1.0	<1.0	1.26	<1.0	12.8	15.1	6.54	<1.0	2.28	<1.0	<1	<1	<1	0.04	0.03
	8/18/2004	30	-2	<1.0	<1.0	1.86	<1.0	27.3	10.7	7.1	<1.0	2.45	<1.0	<1	<1	<1	0.02	<10
	10/14/2004	107	0	<1.0	<1.0	<1.0	<1.0	26.0	12.0	7.9	<1.0	1.3	<1.0	<5.0	<5.0	<1.0	0.04	0.02
	11/30/2004	154	2	<1.0	<1.0	<1.0	<1.0	26	14	12	1	1.4	<1.0	<5.0	<5.0	<1.0	0.09	0.06
	2/3/2005	219	4	<1.0	<1.0	<1.0	<1.0	19	10	18	<1.0	1.4	<1.0	<5.0	<5.0	<1.0	NA	NA
	4/14/2005	289	6	<1.0	<1.0	<1.0	<1.0	18	11	19	<1.0	1.1	<1.0	<5.0	<5.0	<1.0	<0.01	<0.01
	6/22/2005	358	8	<1.0	<1.0	<1.0	<1.0	16	9.6	19	1.1	<1.0	2.5	<5.0	<5.0	<1.0	0.17	0.05
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	12	6.1	25	<1.0	<1.0	14	<5.0	<5.0	<1.0	0.21	0.15

Notes:
NE denotes not established.
NA denotes not analyzed.
* – Results provided by Weston Solutions. Source: Table 4-1, First Semi-Annual Groundwater Sampling Report 2004.
Shaded concentrations exceed the 2L Standards.

TABLE 14
Summary of Non-Chlorinated Volatile Organic Compounds in Site-Wide Monitoring Wells
(Former) Tarheel Army Missile Plant
Burlington, North Carolina

Well Identification	Sample Date	Days Since Start of EOS[a] (Days)	Months Since End of EOS[a] Injection (Months)	Fuel-Related					Other Constituents			
				Benzene (µg/L)	Di-isopropyl ether (µg/L)	p-Isopropyl toluene (µg/L)	Methyl tert-butyl ether (µg/L)	Toluene (µg/L)	Acetone (µg/L)	Acrolein (µg/L)	Carbon disulfide (µg/L)	2-Butanone (MEK) (µg/L)
2L Standard				1	70	NE	200	1,000	700	NE	700	4,200
MW-102	4/14/04*	-76	-6	<1.0	NA	<1.0	<1.0	<1.0	<1.0	NA	<1.0	<1.0
	6/22/2004	-7	-4	<1.0	NA	<1.0	<1.0	<1.0	<5	<5	<1.0	<5
	8/18/2004	50	-2	<1.0	NA	<1.0	<1.0	<1.0	<5	<5	<1.0	<5
	10/14/2004	107	0	<1.0	<1.0	<1.0	<1.0	<5.0	<25	<50	<50	<10
	11/30/2004	154	2	<1.0	<1.0	<1.0	<1.0	<5.0	<25	<50	<50	<10
	2/3/2005	219	4	<1.0	<1.0	<1.0	<1.0	<5.0	<25	<50	<50	<10
	4/13/2005	288	6	<1.0	<1.0	<1.0	<1.0	<5.0	<25	<50	<50	<10
	6/22/2005	358	8	<1.0	<1.0	<1.0	<1.0	<5.0	<25	<50	<50	<10
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	<5.0	<25	<50	<50	<10
MW-104	4/14/04*	-76	-6	<2	NA	<2	<2	<2	<2	NA	<2	<2
	4/14/2004	-76	-6	<1.0	NA	<1.0	<1.0	<1	<5	<5	<1.0	<5
	11/30/2004	154	2	<1.0	<1.0	<1.0	<1.0	<5.0	<25	<50	<50	<10
	2/2/2005	218	4	<1.0	<1.0	<1.0	<1.0	<5.0	68	<50	<50	<10
	4/13/2005	288	6	<1.0	<1.0	<1.0	<1.0	<5.0	<25	<50	<50	<10
	8/15/2005	412	10	<1.0	<1.0	<1.0	<1.0	<5.0	<25	<50	<50	<10
MW-107	4/14/04*	-76	-6	<5	NA	<5	5.6	<5.0	<5	NA	<5	<5
	4/14/2004	-76	-6	<1.0	NA	<1.0	3.6	<1.0	<5	<5	<5	<1.0
	11/30/2004	154	2	<1.0	1.5	<1.0	4.8	<5.0	<25	<50	<50	<10
	2/2/2005	218	4	<1.0	1.8	<1.0	1.6	<5.0	<25	<50	<50	<10
	4/13/2005	288	6	<1.0	2.5	<1.0	22	<5.0	<25	<50	<50	<10
	8/16/2005	413	10	<2.0	<2.0	<2.0	17	<10	<50	<100	<100	<20
MW-108	4/14/04*	-76	-6	<10	NA	<10	<10	<10	<10	NA	<10	<10
	4/14/2004	-76	-6	<1.0	NA	<1.0	5.72	<1.0	<5	<5	<1.0	<5
	6/22/2004	-7	-4	<1.0	NA	<1.0	2.77	<1.0	<5	<5	<1.0	<5
	8/18/2004	50	-2	<1.0	NA	<1.0	<1	<1.0	27.4	<5	1.63	<5
	10/14/2004	107	0	<10	<10	<10	<10	<50	<250	<500	<500	<100
	11/30/2004	154	2	<1.0	<1.0	<1.0	<1.0	<5.0	170	<50	<50	160
(Duplicate)	11/30/2004	154	2	<1.0	<1.0	<1.0	<1.0	<5.0	190	<50	<50	210
	2/2/2005	218	4	<5.0	<5.0	<5.0	<5.0	<25	170	<250	<250	80
(Duplicate)	2/2/2005	218	4	<5.0	<5.0	<5.0	<5.0	<25	160	<250	<250	67
	4/13/2005	288	6	<1.0	<1.0	<1.0	<1.0	<5.0	37	<50	<50	14
	6/22/2005	358	8	<1.0	<1.0	<1.0	1.1	<5.0	29	<50	<50	<10
(Duplicate)	6/23/2005	359	8	<1.0	<1.0	<1.0	<1.0	<5.0	27	<50	<50	13
	8/16/2005	413	10	<1.0	<1.0	<1.0	11	<5.0	41	<50	<50	<10

TABLE 14
Summary of Non-Chlorinated Volatile Organic Compounds in Site-Wide Monitoring Wells
(Former) Tarheel Army Missile Plant
Burlington, North Carolina

Well Identification	Sample Date	Days Since Start of EOS® (Days)	Months Since End of EOS® Injection (Months)	Fuel-Related					Other Constituents			
				Benzene (µg/L)	Di-isopropyl ether (µg/L)	p-Isopropyl toluene (µg/L)	Methyl tert-butyl ether (µg/L)	Toluene (µg/L)	Acetone (µg/L)	Acrolein (µg/L)	Carbon disulfide (µg/L)	2-Butanone (MEK) (µg/L)
2L Standard				1	70	NE	200	1,000	700	NE	700	4,200
MW-109	4/14/04*	-76	-6	<1.0	NA	<1.0	1.7	<1.0		NA		
	11/30/2004	154	2	1.2	<1.0	<1.0	4.5	<5.0	<25	<50	<50	<10
	2/3/2005	219	4	<1.0	<1.0	<1.0	3.8	<5.0	<25	<50	<50	<10
	4/13/2005	288	6	1	<1.0	<1.0	5.8	<5.0	<25	<50	<50	<10
	6/22/2005	358	8	1.2	<1.0	<1.0	5.2	<5.0	<25	<50	<50	<10
	8/16/2005	413	10	1.3	<1.0	<1.0	6.9	<5.0	<25	<50	<50	<10
MW-110	4/14/04*	-76	-6	<10	NA	<10	<10	<10		NA		
	4/14/2004	-76	-6	<1.0	NA	<1.0	<1.0	<1.0	<5	<5	<1.0	<5
	2/2/2005	218	4	<1.0	<1.0	<1.0	<1.0	<5.0	<25	<50	<50	<10
	4/13/2005	288	6	<1.0	<1.0	<1.0	<1.0	<5.0	<25	<50	<50	<10
	8/15/2005	412	10	<20	<20	<20	<20	<100	<500	<1000	<1000	<200
MW-111	4/14/04*	-76	-6	<5	NA	<5	<5	<5.0	<5	NA	<5	<5
	4/14/2004	-76	-6	<1.0	NA	<1.0	<1.0	<1.0	<5	<5	<1.0	<5
	11/30/2004	154	2	<1.0	<1.0	<1.0	<1.0	<5.0	<25	<50	<50	<10
	2/2/2005	218	4	<5.0	<5.0	<5.0	<5.0	<25	<120	<250	<250	<50
	4/13/2005	288	6	<50	<50	<50	<50	<250	<1200	<2500	<2500	<500
	8/15/2005	412	10	<5.0	<5.0	<5.0	<5.0	<25	<120	<250	<250	<50
MW-115	4/14/04*	-76	-6	<1.0	NA	<1.0	1.6	<1.0	<1.0	NA	<1.0	<1.0
	11/30/2004	154	2	<1.0	<1.0	<1.0	1.6	<5.0	180	<50	<50	150
	2/2/2005	218	4	<1.0	<1.0	<1.0	2	<5.0	210	84	<50	120
	4/13/2005	288	6	<1.0	<1.0	<1.0	2.2	<5.0	44	<50	<50	44
	6/22/2005	358	8	<1.0	<1.0	<1.0	1.7	<5.0	250	<50	<50	11
	8/16/2005	413	10	<1.0	<1.0	<1.0	4.6	<5.0	37	<50	<50	<10
MW-118	4/14/04*	-76	-6	<1.0	NA	<1.0	1.3	<1.0	<1.0	NA	<1.0	<1.0
	6/22/2004	-7	-4	<1.0	NA	<1.0	<1.0	<1.0	<5	<5	<1.0	<5
	8/18/2004	50	-2	<1.0	NA	<1.0	<1.0	<1.0	<5	<5	<1.0	<5
	10/14/2004	107	0	<1.0	<1.0	<1.0	<1.0	<5.0	<25	<50	<50	<10
	11/30/2004	154	2	<1.0	<1.0	<1.0	1.2	<5.0	<25	<50	<50	<10
	2/3/2005	219	4	<1.0	<1.0	<1.0	1.6	<5.0	<25	<50	<50	<10
	4/14/2005	289	6	<1.0	<1.0	<1.0	1.8	<5.0	<25	<50	<50	<10
	6/22/2005	358	8	<1.0	<1.0	<1.0	1.8	<5.0	<25	<50	<50	<10
	8/16/2005	413	10	<1.0	<1.0	<1.0	3	<5.0	<25	<50	<50	<10

Notes:
NE denotes not established. NA denotes not analyzed.
* - Results provided by Weston Solutions. Source: Table 4-1, First Semi-Annual Groundwater Sampling Report 2004.
Shaded concentrations exceed the 2L Standards.

TABLE 15
Summary of Biogeochemical Groundwater Parameters in Site-Wide Monitoring Wells
(Former) Tarheel Army Missile Plant
Burlington, North Carolina

Well ID	Sample Date	Dissolved Oxygen (mg/L)	ORP (mV)	pH (standard units)	Temperature (°C)	Conductivity (µS/cm)	Total Organic Carbon (mg/L)	Total Inorganic Carbon (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)	Dissolved Manganese (mg/L)	Methane (µg/L)
MW-102	6/22/2004	NA	NA	NA	NA	NA	<1.0	10	2.77	1.69	9.64	NA	NA	<200
	8/5/2004	5.76	140.2	5.73	22.5	195.3	<1.0	NA	NA	NA	NA	NA	NA	NA
	8/18/2004	7.19	58.6	6.05	24.1	67.8	NA	NA	3.13	1.78	10.7	NA	NA	<200
	10/14/2004	6.96	105.4	5.90	23.8	131.3	<1.0	NA	2.3	1.4	9.4	<0.050	NA	<0.2
	11/30/2004	M	142.0	5.55	19.9	79.6	<1.0	7	2.8	6.8	10.1	<0.050	<0.010	1.0
	2/3/2005	6.74	44.5	6.09	14.3	86.1	NA	NA	NA	NA	NA	NA	NA	NA
	4/13/2005	7.76	135.8	6.51	15.4	178.3	NA	NA	NA	NA	NA	NA	NA	NA
	6/22/2005	5.42	29.7	5.84	20.6	73.4	NA	NA	NA	NA	NA	NA	NA	NA
	8/16/2005	5.87	272.0	6.61	23	71.1	<1.0	5.9	2.6	6.5	9.6	<0.10	<0.010	4.3
MW-104	4/14/2004	9.67	117.4	6.28	15.5	97	<1.0	NA	9.75	1.19	NA	NA	NA	NA
	11/30/2004	8.34	116.3	4.96	15.2	95.6	<1.0	5.9	10.0	8.7	3.0	<0.050	<0.010	1.5
	8/16/2005	7.33	-172.3	6.07	29.6	853	NA	NA	NA	NA	NA	NA	NA	NA
MW-106	8/5/2004	2.19	-75.3	6.69	22.0	618	NA	NA	NA	NA	NA	NA	NA	NA
MW-107	4/14/2004	7.00	160.6	6.36	14.3	277	2.26	NA	17.3	4.51	NA	NA	NA	NA
	8/5/2004	7.88	-14.8	7.27	20.7	421	NA	NA	NA	NA	NA	NA	NA	NA
	11/30/2004	NM	-33.8	7.33	20.2	192	2.7	6.1	19.0	15.2	24.0	<0.050	0.011	18.4
	2/2/2005	2.21	-46.1	7.04	17.5	243	NA	NA	NA	NA	NA	NA	NA	NA
	4/13/2005	NM	85.7	7.31	16.2	286	NA	NA	NA	NA	NA	NA	NA	NA
	8/16/2005	2.45	3.5	6.91	19.8	192.6	NA	NA	NA	NA	NA	NA	NA	NA
MW-108	4/14/2004	5.71	96.9	6.77	13.5	355	NA	NA	16.8	1.94	NA	NA	NA	NA
	6/22/2004	2.67	171.0	6.10	19.3	689	2.2	17	16.4	4.43	61.2	NA	NA	0.5
	8/18/2004	0.13	-178.5	6.31	26	539	NA	NA	9.99	<0.11	4.75	NA	NA	121.0
	10/14/2004	0.46	-80.4	5.61	23.4	1,324	170	NA	9.7	<0.10	8.2	32	NA	4,583.0
	11/30/2004	NM	-91.4	6.10	18.0	602	91	110	44.5	<0.5	<0.5	52	1.9	3,751.6
	2/2/2005	0.11	-88.0	6.21	16.5	900	65	210	NA	NA	NA	54	6.6	1,259.5
	4/13/2005	0.30	90.2	6.18	14.8	903	37	190	9.3	<0.5	11.9	30	5	6,998.0
	6/23/2005	0.22	-246.7	6.56	19.4	974	84	220	7.1	<0.5	1.7	NA	NA	6,104.6
	8/16/2005	0.24	-173.0	6.47	23.5	778	<1.0	300	13.5	<0.5	0.7	6.5	21	4,740.2

TABLE 15
Summary of Biogeochemical Groundwater Parameters in Site-Wide Monitoring Wells
(Former) Tarheel Army Missile Plant
Burlington, North Carolina

Well ID	Sample Date	Dissolved Oxygen (mg/L)	ORP (mV)	pH (standard units)	Temperature (°C)	Conductivity (µS/cm)	Total Organic Carbon (mg/L)	Total Inorganic Carbon (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)	Dissolved Manganese (mg/L)	Methane (µg/L)
MW-109	4/14/2004	11.28	117.0	5.34	16.3	171.7	NA	NA	NA	NA	NA	NA	NA	NA
	8/5/2004	0.67	-43.3	7.08	24.7	631	NA	NA	NA	NA	NA	NA	NA	NA
	11/30/2004	NM	-142.7	6.76	20.1	545	15	79	4.2	<0.5	<0.5	<0.050	5.6	6,517.1
	2/3/2005	0.14	-122.2	6.89	12	569	NA	NA	NA	NA	NA	NA	NA	NA
	4/13/2005	0.42	97.7	6.66	17.6	683	NA	NA	NA	NA	NA	NA	NA	NA
	6/23/2005	0.58	-251.8	6.89	22.4	554	NA	NA	NA	NA	NA	NA	NA	NA
	8/16/2005	0.24	-250.0	6.6	21.7	518	4.7	100	5.0	<0.5	1.9	<0.10	4.7	7,427.5
MW-110	4/14/2004	10.80	117.1	6.16	16.3	160.2	<1	NA	NA	NA	NA	NA	NA	NA
	4/13/2005	8.54	35.5	6.23	24.1	127.2	NA	NA	NA	NA	NA	NA	NA	NA
	8/16/2005	9.22	35.5	6.23	24.1	127.2	NA	NA	NA	NA	NA	NA	NA	NA
MW-111	4/14/2004	11.28	117	5.34	16.3	171.7	<1.0	NA	11	0.82	NA	NA	NA	NA
	11/30/2004	7.00	141.2	5.44	16.9	161.0	<1.0	9.8	10.8	7.0	11.7	<0.050	<0.010	3.2
	8/16/2005	9.62	0	6.05	22.4	108.8	NA	NA	NA	NA	NA	NA	NA	NA
MW-113	8/5/2004	0.21	-50.4.	6.62	21.9	451.	NA	NA	NA	NA	NA	NA	NA	NA
MW-115	11/30/2004	NM	38.9	4.76	20.5	1090	2200	68	4.1	<0.5	4.5	80	4.8	5,208.8
	2/2/2005	0.33	18.3	4.95	14.6	1088	1200	70	NA	NA	NA	74	4.1	3,959.1
	4/13/2005	0.12	96.8	6.23	15.8	1081	220	170	4.4	<0.5	<0.5	3.1	5.1	2,514.1
	6/23/2005	0.04	-162.2	6.41	21.1	1,040	160	250	4.3	<0.5	<0.5	NA	NA	5,989.9
	8/16/2005	0.21	-108.0	6.08	20.6	701	<1.0	170	5.4	<0.5	<0.5	22	7.4	4,400.9
MW-117	8/5/2004	0.72	-112.5	7.41	21.7	515	NA	NA	NA	NA	NA	NA	NA	NA
MW-118	6/22/2004	2.67	171.0	6.10	19.3	689	1.4	16	6.1	1.26	30.5	NA	NA	16.8
	8/5/2004	0.19	109.9	6.41	19.6	442	1.16	NA	NA	NA	NA	NA	NA	NA
	8/18/2004	0.15	64.6	6.43	21.7	140.9	NA	NA	6.87	1.32	31.6	NA	NA	4.9
	10/14/2004	0.06	81.9	6.1	21.0	206	<1.0	NA	5.4	0.23	28	<0.050	NA	34.6
	11/30/2004	NM	6.25	6.42	19.3	226	6.6	17	6.4	<0.5	23.8	0.16	1	46.4
	2/3/2005	0.66	-104.6	6.47	17.4	247	NA	NA	NA	NA	NA	NA	NA	NA
	4/14/2005	0.49	133.6	6.97	17.3	282	<1.0	36	6.3	<0.5	21.2	0.44	0.5	239.2
	6/22/2005	0.58	-63.20	6.64	18.2	339	1.6	50	7.2	<0.5	22.3	NA	NA	671.2
	8/16/2005	0.25	14.0	6.3	20.6	332	1.2	52	7.9	<0.5	20.8	<0.10	1	2,130.9

Note:
NA denotes not analyzed.

Federal Remediation Branch

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INTERIM PROGRESS REPORT FOR GROUNDWATER REMEDIATION AND BIOAUGMENTATION ACTIVITIES AT THE FORMER TARHEEL ARMY MISSILE PLANT

Prepared for:

U.S. Army Environmental Center
Aberdeen Proving Ground, Maryland 21010-5401
Contract DACA65-03-C-0083

AUG 1 4 2006

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Solutions-IES Project No.: 1931.03A3.DOTA

July 2006

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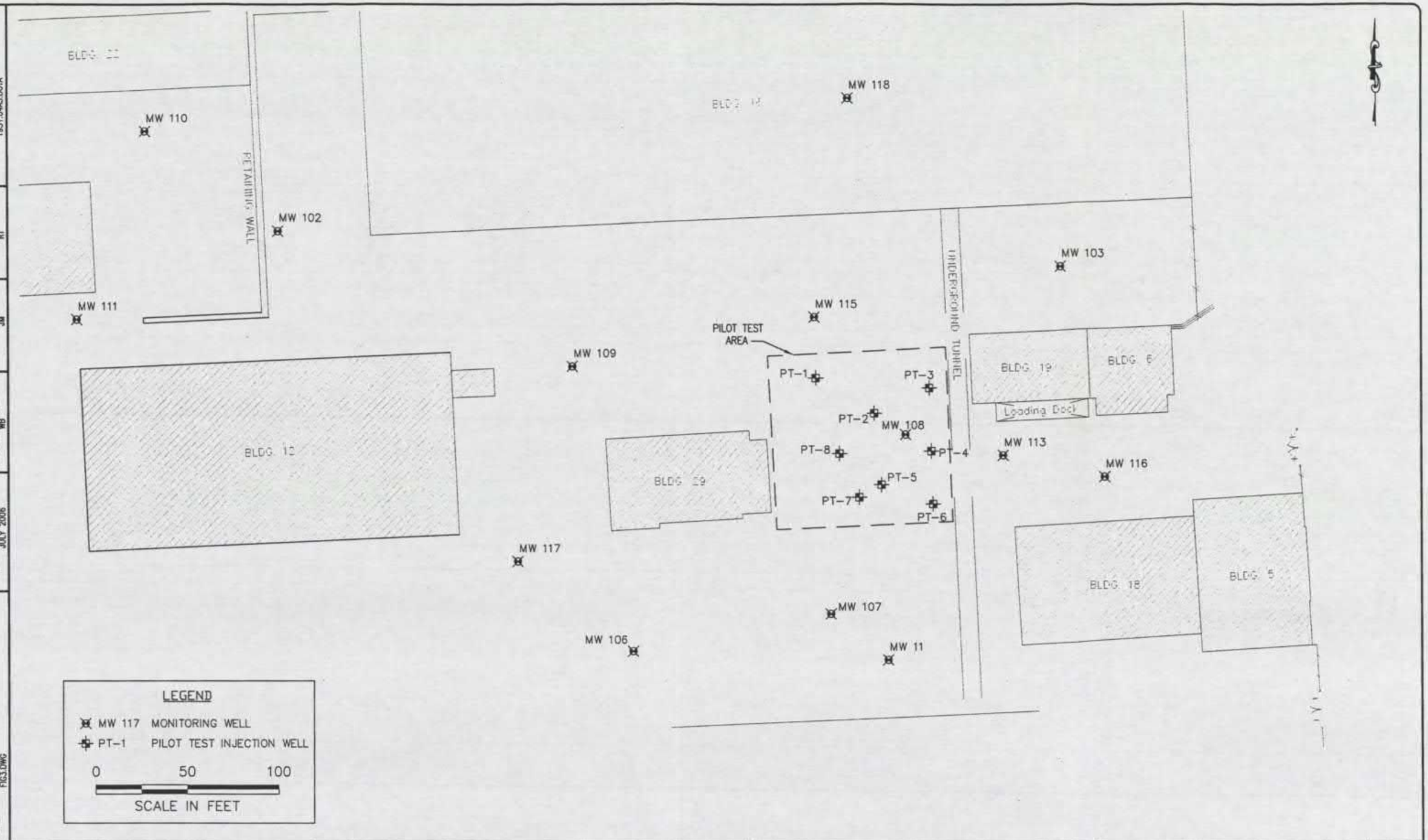
Industrial & Environmental Services



PROJECT NUMBER 1931.0443.DOTA | DRAFTER RT | CHECKED BY JM | PROJECT MANAGER WB | DATE JULY 2006 | FILE FIG3.DWG

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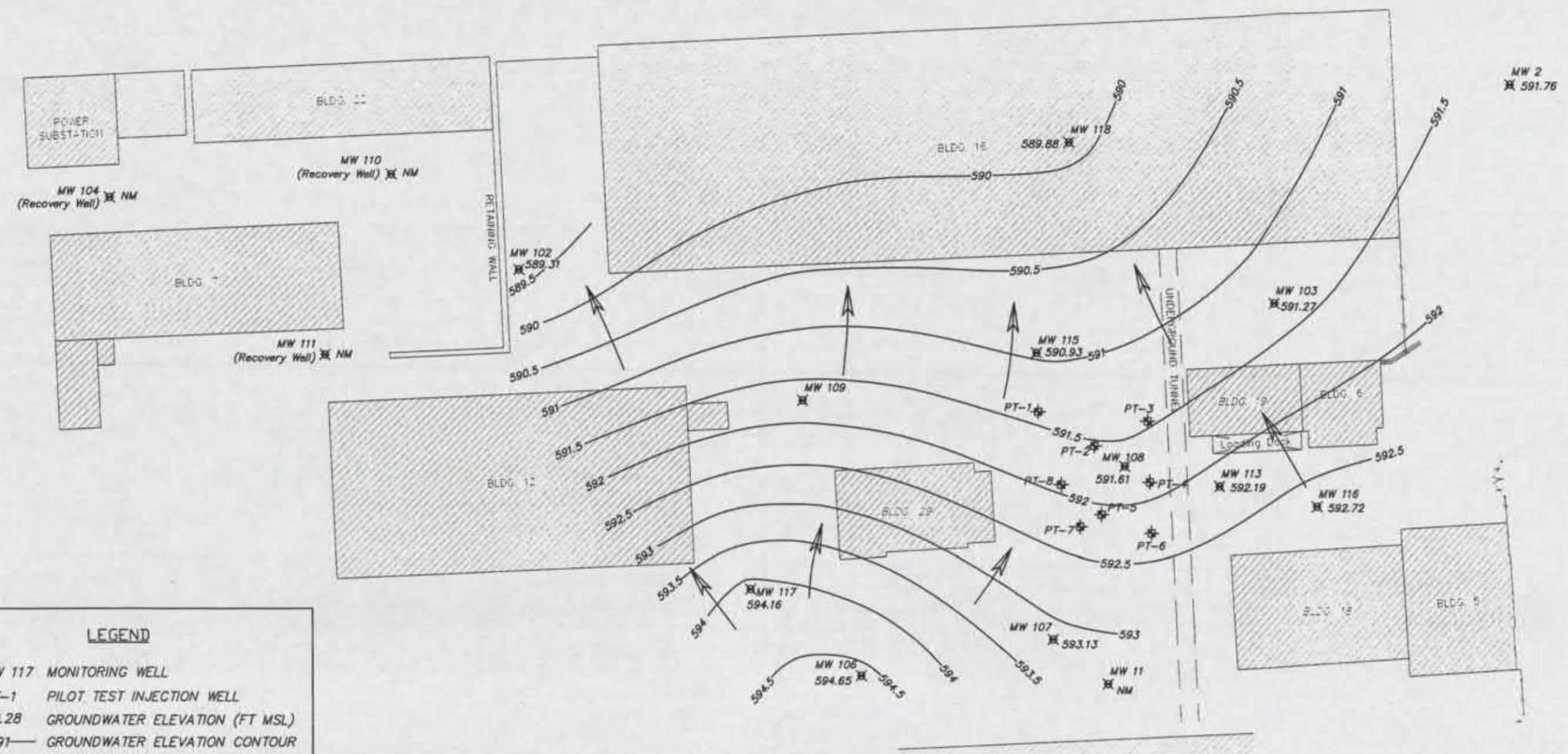
NOTES:

(FORMER) TARHEEL ARMY MISSILE PLANT
GRAHAM-HOPEDALE ROAD
BURLINGTON, NORTH CAROLINA

PILOT TEST AREA

FIGURE: 3



LEGEND

MW 117	MONITORING WELL
PT-1	PILOT TEST INJECTION WELL
590.28	GROUNDWATER ELEVATION (FT MSL)
—591—	GROUNDWATER ELEVATION CONTOUR
NM	NOT MEASURED
←	FLOW DIRECTION (IMPLIED)

0 100 200

SCALE IN FEET

PROJECT NUMBER 1931.03A3.D01A | DRAFTER RT | CHECKED BY JM | PROJECT MANAGER WB | DATE JULY 2006 | FILE FIG4.DWG

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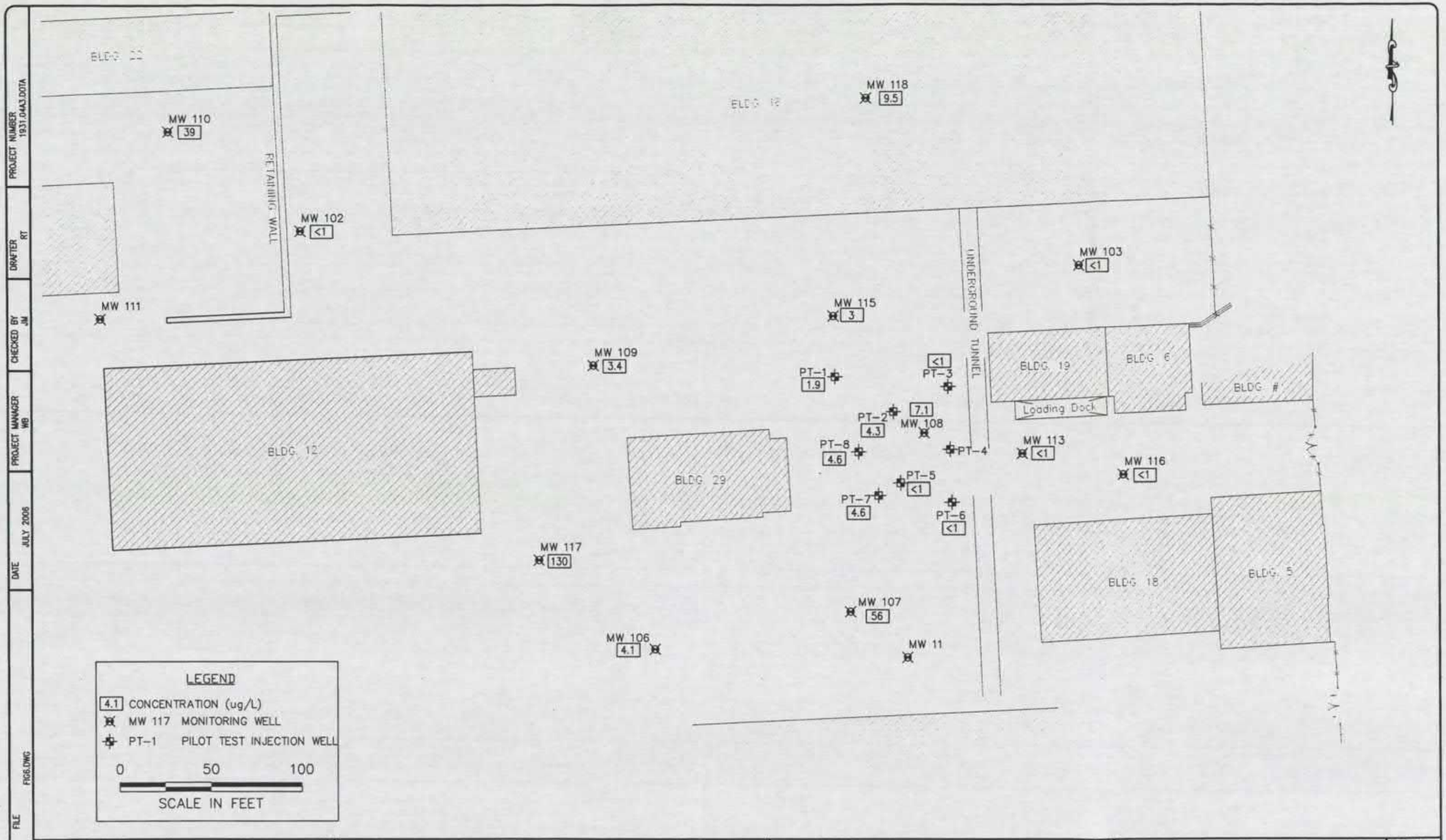
GRAHAM-HOPEDALE ROAD
BURLINGTON, NORTH CAROLINA

GROUNDWATER POTENTIOMETRIC SURFACE MAP
APRIL 19, 2006

FIGURE: 4



PROJECT NUMBER 1931.0443.00TA | DRAFTER RT | CHECKED BY JM | PROJECT MANAGER WB | DATE JULY 2006 | FILE FIG6.DWG

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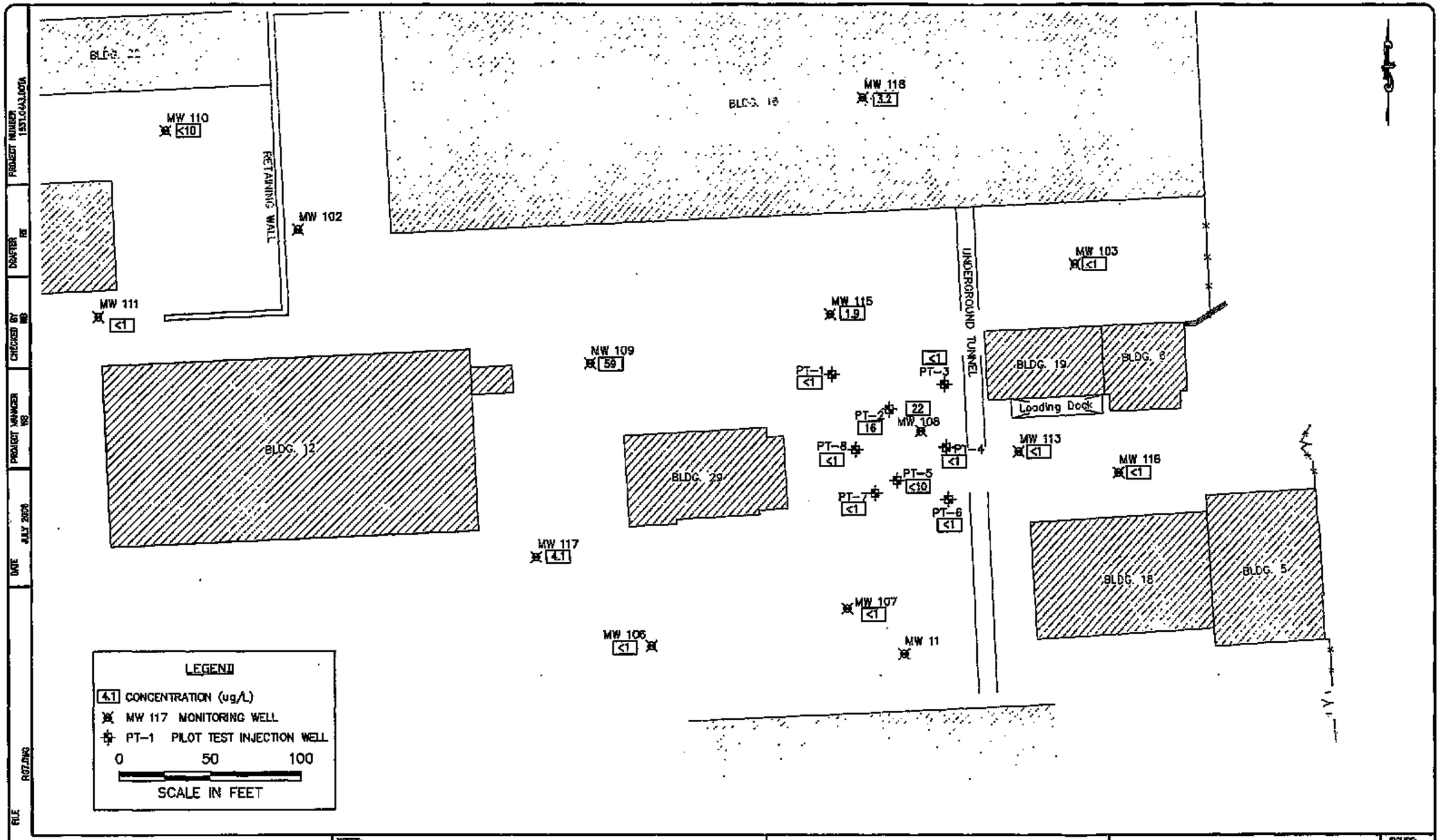
NOTES:

(FORMER) TARHEEL ARMY MISSILE PLANT
GRAHAM-HOPEDALE ROAD
BURLINGTON, NORTH CAROLINA

CIS-1,2-DICHLOROETHENE IN GROUNDWATER
APRIL 19, 2006

FIGURE: 5



PROJECT NUMBER 1531.04A3.DOTA
DRAFTER RS
CHECKED BY WB
PROJECT MANAGER WB
DATE JULY 2006
FILE R07.DWG

Solutions-IES
Industrial & Environmental Services
1101 NOWELL ROAD
RALEIGH, NORTH CAROLINA 27607
TEL.: (919) 873-1080 FAX.: (919) 873-1074

NOTES:

(FORMER) TARHEEL ARMY MISSILE PLANT
GRAHAM-HOPEDALE ROAD
BURLINGTON, NORTH CAROLINA

VINYL CHLORIDE IN GROUNDWATER
APRIL 19, 2006

FIGURE 6

TABLE 2
Summary of Field Measured Groundwater Parameters
EOS® Pilot Test Area
(Former) Tarheel Army Missile Plant
Burlington, North Carolina

Well ID	Sample Date	Days Since Start of EOS® (Days)	Months Since End of EOS® Injection (Months)	Dissolved Oxygen (mg/L)	ORP (mV)	pH (Standard Units)	Temperature (°C)	Conductivity (µS/cm)
PILOT TEST WELLS								
PT-1	12/1/2004	155	2	NM	-94.2	6.00	18.7	1290
	2/2/2005	218	4	0.05	-127.6	6.32	15.1	1129
	4/14/2005	289	6	0.09	92.5	6.96	15.2	1429
	6/23/2005	359	8	0.15	-184.4	6.63	18.4	1058
	8/16/2005	413	10	0.23	-220.3	6.38	20.6	948
	3/8/2006	617	17	1.24	-74.0	7.07	18.1	938
	4/20/2006	660	19	0.69	-53.8	5.00	16	1110
PT-2	12/1/2004	155	2	NM	-71.3	6.68	18.8	876
	2/2/2005	218	4	0.06	-95.7	6.35	15.6	514
	4/14/2005	289	6	0.22	24.9	6.98	14.8	390
	6/23/2005	359	8	0.26	-212.7	6.39	18.2	511
	8/16/2005	413	10	0.22	-16.9	6.41	22.1	700
	3/8/2006	617	17	0.21	-28	7.35	17.3	736
	4/19/2006	659	18	0.18	-5.5	4.12	16.2	1433
PT-3	6/22/2004	-7	-4	6.78	139	6.78	19.3	732
	8/5/2004	37	-2	1.48	-46.3	5.53	22.1	1261
	8/18/2004	50	-2	0.14	-209	7.09	26.2	1400
	10/14/2004	107	0	0.39	-65	7.02	23.5	510
	12/1/2004	155	2	NM	-2.0	6.84	20.8	341
	2/2/2005	218	4	0.49	-45.2	6.30	17.2	154
	4/14/2005	289	6	0.41	21.9	7.65	16.8	179
	6/23/2005	359	8	0.37	-123.1	6.46	19.4	150
	8/16/2005	413	10	0.23	-37.8	6.48	20.7	161
	3/8/2006	617	17	0.19	36.0	6.65	19.2	269
	4/19/2006	659	18	0.23	109.4	5.58	16.5	144
PT-4	12/1/2004	155	2	NM	-106.5	6.94	20.0	296
	2/2/2005	218	4	0.64	-135.5	6.25	17.6	183
	4/14/2005	289	6	0.77	22.9	6.57	17.3	209
	6/23/2005	359	8	0.89	-226.9	6.32	19.0	193
	8/16/2005	413	10	0.21	1.7	6.10	20.7	178
	3/8/2006	617	17	0.15	45	6.43	19.3	300
	4/19/2006	659	18	0.10	107.8	4.00	18.0	361
PT-5	11/30/2004	154	2	NM	-100.1	6.07	20.6	696
	2/2/2005	218	4	0.10	-70.3	6.06	17.1	511
	4/14/2005	289	6	0.56	36.2	6.56	18.0	681
	6/23/2005	359	8	0.41	-88.5	6.48	18.9	691
	8/16/2005	413	10	0.21	19.9	6.32	21.0	407
	3/8/2006	617	17	0.25	34	6.98	18.6	621
	4/19/2006	659	18	0.67	5.2	4.30	17.5	1418
PT-6	6/22/2004	-7	-4	6.05	495	5.00	22.2	495
	8/5/2004	37	-2	0.37	-180	5.99	21.2	528
	8/18/2004	50	-2	0.43	-181.5	7.06	26.5	167
	10/14/2004	107	0	5.61	56.3	7.66	22	368
	12/1/2004	155	2	NM	26.5	6.20	19.7	272

TABLE 2
Summary of Field Measured Groundwater Parameters
EOS® Pilot Test Area
(Former) Tarheel Army Missile Plant
Burlington, North Carolina

Well ID	Sample Date	Days Since Start of EOS® (Days)	Months Since End of EOS® Injection (Months)	Dissolved Oxygen (mg/L)	ORP (mV)	pH (Standard Units)	Temperature (°C)	Conductivity (µS/cm)
	2/2/2005	218	4	5.02	-112.2	7.23	16.1	129
	4/14/2005	289	6	1.09	11.4	7.92	17.8	134
	6/23/2005	359	8	1.31	-294.9	6.54	19.2	154
	8/16/2005	413	10	0.23	7.6	6.91	21.4	173
	3/8/2006	617	17	0.13	64	7.78	19.3	201
	4/19/2006	659	18	0.51	-102.3	6.42	18.1	179
PT-7	8/5/2004	37	-2	0.32	-194.1	6.09	20.6	1397
	11/30/2004	154	2	NM	-146.1	6.61	19.6	1410
	2/2/2005	218	4	0.11	-101.3	6.49	16.7	662
	4/14/2005	289	6	0.36	8.6	7.44	17.6	717
	6/23/2005	359	8	0.19	-238.6	6.92	18.3	1013
	8/16/2005	413	10	0.25	-91.1	6.61	20.6	1238
	3/8/2006	617	17	0.22	-32	7.56	18.6	917
	4/20/2006	660	19	0.39	10.4	4.15	17.5	1551
PT-8	6/22/2004	-7	-4	0.16	135	1.82	18.1	705
	8/18/2004	50	-2	0.14	-213	6.61	24.9	525
	10/14/2004	107	0	0.51	-111.3	6.20	21.7	923
	12/1/2004	155	2	NM	-106.5	6.03	18.6	1085
	2/2/2005	218	4	0.08	-109	6.29	15.7	983
	4/14/2005	289	6	0.10	28.1	7.12	15.7	1344
	6/23/2005	359	8	0.08	-200.5	6.67	18.0	1142
	8/16/2005	413	10	0.19	-223.1	6.48	20.3	909
	3/8/2006	617	17	0.28	-100	7.07	17.8	1154
	4/20/2006	660	19	0.22	-14.1	4.25	16	1320
PILOT TEST AREA MONITORING WELL								
MW-108	4/14/2004	-76	-6	5.71	96.9	6.77	13.5	355
	6/22/2004	-7	-4	2.67	171.0	6.10	19.3	689
	8/18/2004	50	-2	0.13	-178.5	6.31	26.0	539
	10/14/2004	107	0	0.46	-80.4	5.61	23.4	1324
	11/30/2004	154	2	NM	-91.4	6.10	18.0	602
	2/2/2005	218	4	0.11	-88.0	6.21	16.5	900
	4/13/2005	288	6	0.30	90.2	6.18	14.8	903
	6/22/2005	358	8	0.22	-246.7	6.56	19.4	974
	8/16/2005	413	10	0.24	-173.0	6.47	23.5	778
	3/8/2006	617	17	0.21	-112.0	7.23	18.1	1221
	4/19/2005	294	6	0.19	-97.2	5.65	17.2	1535
DOWNGRADIENT MONITORING WELLS								
MW-2	4/20/2006	660	19	1.9	45.8	6.2	17.4	231.0
MW-102	8/5/2004	37	-2	5.76	140.2	5.73	22.5	195
	8/18/2004	50	-2	7.19	58.6	6.05	24.1	68
	10/14/2004	107	0	6.96	105.4	5.90	23.8	131
	11/30/2004	154	2	NM	142.0	5.55	19.9	80
	2/3/2005	219	4	6.74	44.5	6.09	14.3	86
	4/13/2005	288	6	7.76	135.8	6.51	15.4	178
	6/22/2005	358	8	5.42	29.7	5.84	20.6	73

TABLE 2
Summary of Field Measured Groundwater Parameters
EOS® Pilot Test Area
(Former) Tarheel Army Missile Plant
Burlington, North Carolina

Well ID	Sample Date	Days Since Start of EOS® (Days)	Months Since End of EOS® Injection (Months)	Dissolved Oxygen (mg/L)	ORP (mV)	pH (Standard Units)	Temperature (°C)	Conductivity (µS/cm)
	8/16/2005	413	10	5.87	272.0	6.61	23	71
	4/20/2006	660	19	3.85	-27.1	5.72	17.4	87
MW-103	4/20/2006	660	19	3.06	-20.1	6.43	16.8	227
MW-104	4/19/2006	659	18	NM	123.7	5.75	20.5	97
MW-106	4/20/2006	660	19	0.28	-40.4	6.34	16.5	258
MW-107	4/20/2006	660	19	0.49	-22.1	6.40	18.9	231
MW-108	4/19/2006	659	18	0.19	-97.2	5.65	17.2	1535
MW-109	4/20/2006	660	19	0.30	-52.1	6.12	18	389
MW-110	4/19/2006	659	18	NM	119.1	6.14	19	153
MW-111	4/19/2006	659	18	NM	113.3	6.04	19.5	130
MW-112	4/19/2006	659	18	NM	144.7	5.25	18.9	136
MW-113	4/20/2006	660	19	2.86	57.8	5.89	18.6	168
MW-114	4/20/2006	660	19	0.53	41.9	6.38	17.3	334
MW-115	11/30/2004	154	2	NM	38.9	4.76	20.5	1090
	2/2/2005	218	4	0.33	18.3	4.95	14.6	1088
	4/13/2005	288	6	0.12	96.8	6.23	15.8	1081
	6/22/2005	358	8	0.04	-162.2	6.41	21.1	1040
	8/16/2005	413	10	0.21	-108.0	6.08	20.6	701
	3/8/2006	617	17	0.19	-96.0	7.09	17.3	718
	4/19/2006	659	18	0.09	-18.8	4.55	16.5	870
MW-116	4/20/2006	660	19	3.21	1.8	6.13	18.2	168
MW-117	4/20/2006	660	19	0.26	-11.2	6.47	18.4	290
MW-118	8/5/2004	37	-2	0.19	109.9	6.41	19.6	442
	8/18/2004	50	-2	0.15	64.6	6.43	21.7	141
	10/14/2004	107	0	0.06	81.9	6.10	21.0	206
	11/30/2004	154	2	NM	6.25	6.42	19.3	226
	2/3/2005	219	4	0.66	-104.6	6.47	17.4	247
	4/14/2005	289	6	0.49	133.6	6.97	17.3	282
	6/22/2005	358	8	0.58	-63.2	6.64	18.2	339
	8/16/2005	413	10	0.25	14.0	6.30	20.6	332
	3/9/2006	618	17	0.32	143.0	6.67	18.4	451
	4/19/2006	659	18	0.30	-61.4	6.64	18.7	819

Note:
lenotes not measured.

TABLE 3
Microbial Assays of Dehalococcoides spp.[1]
EOS® Pilot Test Area
(Former) Tarheel Army Missile Plant
Burlington, North Carolina

Well ID	Sample Date	Days Since Start of EOS® Injection (Days)	Months Since End of EOS® Injection (Months)	Dehalococcoides spp. 16S rRNA genomes /ml
PT-8	8/18/2004	50	-2	ND
	10/14/2004	107	0	ND
	8/16/2005	413	10	2.09E+02
	3/8/2006	617	17	1.00E+02
MW-108	6/22/2004	-7	-4	ND
	8/18/2004	50	-2	5.35E+02
	10/14/2004	107	0	3.22E+01
	8/16/2005	413	10	2.33E+02
	3/8/2006	617	17	3.00E+02

[1] Assuming *Dehalococcoides ethenogenes* contains one 16S ribosomal ribonucleic acid (rRNA) gene copy per organism.
The value given also may represent the number of cells per ml or gram of sample for bacteria in this phylogenetic group.

ND - Not Detected

TABLE 4
Summary of CVOCs, Ethane, Ethene and Other Constituents in Groundwater
(Former) Tarheel Army Missile Plant
Burlington, North Carolina

Well ID	Sample Date	Days Since Start of EOS® Injection (Days)	Months Since End of EOS® Injection (Months)	Chlorinated Ethanes					Chlorinated Ethenes						Halomethanes			Light HC Gases	
				1,1,1-TCA (µg/L)	1,2-DCA (µg/L)	1,1-DCA (µg/L)	CT (µg/L)	CA (µg/L)	PCE (µg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	1,1-DCE (µg/L)	Vinyl Chloride (µg/L)	Chloro-form (µg/L)	Methylene Chloride (µg/L)	Trichloro-fluoromethane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
North Carolina Groundwater Standard				200	0.38	70.0	0.269	2,800	0.7	2.8	70	100	7.0	0.015	70	4.6	2,100	NE	NE
PILOT TEST WELLS																			
PT-1	12/1/2004	155	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	140	<1.0	<1.0	3.2	<5.0	<5.0	<1.0	0.05	0.10
	2/2/2005	218	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	80	<1.0	<1.0	5.1	<5.0	<5.0	<1.0	<0.01	0.10
	4/14/2005	289	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.6	22	<1.0	<1.0	7.1	<5.0	<5.0	<1.0	<0.01	0.17
	6/23/2005	359	8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.5	<1.0	<1.0	4.0	<5.0	<5.0	<1.0	NA	NA
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	0.13
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	0.13
	4/20/2006	660	18	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	NA	NA
PT-2	12/1/2004	155	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.5	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	0.07
	4/14/2005	289	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.6	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	0.03
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.4	<1.0	<1.0	4.0	<5.0	<5.0	<1.0	0.01	0.42
	4/20/2006	660	18	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	4.3	<1.0	<1.0	16.0	<5.0	5.30	<1.0	NA	NA
PT-3	6/22/2004	-7	-4	<1.0	<1.0	1.2	<1.0	<1.0	6.77	176.0	39.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.01	0.04
	8/18/2004	50	-2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.8	6.9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.03	0.15
	10/14/2004	107	0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	12.0	<1.0	<1.0	<1.0	<5.0	520	<1.0	0.02	0.23
	12/1/2004	155	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.3	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	0.03
	4/14/2005	289	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	<0.01
	6/23/2005	359	8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7.9	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	0.04
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.5	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	0.07
	4/20/2006	660	18	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	NA	NA
PT-4	12/1/2004	155	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.2	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	0.06
	4/14/2005	289	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	<0.01
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	0.05
	4/20/2006	660	18	<1.0	<1.0	<1.0	<1.0	<1.0	1.20	<1.0	1.90	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	NA	NA
PT-5	11/30/2004	154	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	46	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	0.25
	4/14/2005	289	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	44	<1.0	<1.0	3.6	<5.0	<5.0	<1.0	<0.01	0.09
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.3	<1.0	<1.0	5.2	<5.0	<5.0	<1.0	0.02	0.03
	4/20/2006	660	18	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	NA	NA
PT-6	6/22/2004	-7	-4	<1.0	<1.0	<1.0	<1.0	<1.0	1.17	30.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	0.02
	8/18/2004	50	-2	<1.0	<1.0	<1.0	<1.0	<1.0	1.26	94.6	9.49	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	0.03
	10/14/2004	107	0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.8	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	0.01
	12/1/2004	155	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	<0.01
	4/14/2005	289	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	<0.01
	6/23/2005	359	8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	0.03	0.03
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	0.02
	4/20/2006	660	18	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	NA	NA

TABLE 4
Summary of CVOCs, Ethane, Ethene and Other Constituents in Groundwater
(Former) Tarheel Army Missile Plant
Burlington, North Carolina

Well ID	Sample Date	Days Since Start of EOS® Injection (Days)	Months Since End of EOS® Injection (Months)	Chlorinated Ethanes					Chlorinated Ethenes						Halomethanes			Light HC Gases	
				1,1,1-TCA (µg/L)	1,2-DCA (µg/L)	1,1-DCA (µg/L)	CT (µg/L)	CA (µg/L)	PCE (µg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	1,1-DCE (µg/L)	Vinyl Chloride (µg/L)	Chloro-form (µg/L)	Methylene Chloride (µg/L)	Trichloro-fluoromethane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
North Carolina Groundwater Standard				200	0.38	70.0	0.269	2,800	0.7	2.8	70	100	7.0	0.015	70	4.6	2,100	NE	NE
PILOT TEST WELLS (CONTINUED)																			
PT-7	11/30/2004	154	2	<10	<10	<10	<1.0	<10	<10	<10	490	<10	<10	12.0	<50	<50	<10	0.03	0.25
	2/2/2005	218	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	130	5.7	<1.0	200.0	<5.0	<5.0	<1.0	<0.01	0.69
	4/14/2005	289	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.2	2.8	<1.0	200.0	<5.0	<5.0	<1.0	<0.01	3.13
	6/23/2005	359	8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.2	1.8	<1.0	200.0	<5.0	<5.0	<1.0	NA	NA
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	2.1	<1.0	<1.0	6.2	1.0	<1.0	190.0	<5.0	<5.0	<1.0	<0.01	3.66
	4/20/2006	660	18	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.6	<5.0	<5.0	<1.0	<5.0	<5.0	<1.0	NA	NA
PT-8	6/22/2004	-7	-4	<1.0	3.33	1.8	<1.0	<1.0	49.8	240.0	161	2.61	<1.0	17.9	<1.0	<1.0	3.38	0.15	0.25
	8/18/2004	50	-2	<1.0	2.16	8.0	<1.0	<1.0	<1.0	47.1	2102	88.2	5.0	<1.0	<1.0	2.12	<1.0	0.16	0.56
	10/14/2004	107	0	<1.0	1.3	<1.0	<1.0	<1.0	<1.0	1.2	300	1.6	1.3	<1.0	<5.0	<5.0	<1.0	0.17	0.50
	12/1/2004	155	2	<5.0	<5.0	<5.0	<1.0	<5.0	<5.0	<5.0	430	<5.0	<5.0	20.0	<25	<25	<5.0	0.04	0.58
	2/2/2005	218	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	190	3.4	<1.0	110.0	<5.0	<5.0	<1.0	<0.01	0.35
	4/14/2005	289	6	<1.0	<1.0	<1.0	<1.0	1.4	<1.0	<1.0	1.9	3.4	<1.0	130.0	<5.0	<5.0	<1.0	<0.01	0.45
	6/23/2005	359	8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	2.0	<1.0	68.0	<5.0	<5.0	<1.0	<0.01	0.55
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	1.3	<1.0	<1.0	1.2	1.8	<1.0	80.0	<5.0	<5.0	<1.0	<0.01	0.72
	4/20/2006	660	18	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.6	<5.0	<5.0	<1.0	<5.0	<5.0	<1.0	NA	NA
PILOT TEST AREA MONITORING WELL																			
MW-108	4/14/04*	-76	-6	<10	<10	5.6 J	<10	<10	150	1600.0	310	<10	<10	<10	8.3 J	<10	<10	NA	NA
	4/14/2004	-76	-6	<1.0	1.57	4.0	<1.0	<1.0	93.4	1300.0	189	1.01	2.1	<1	6.03	<1	2.83	NA	NA
	6/22/2004	-7	-4	<1.0	1.88	4.3	<1.0	<1.0	39.4	1690.0	252	1.21	1.7	<1	7.65	<1	1.29	0.02	<10
	8/18/2004	50	-2	<1.0	<1.0	1.7	<1.0	<1.0	1.32	13.9	232	13.20	<1.0	<1	<1	<1	<1	0.14	0.32
	10/14/2004	107	0	<10	<10	<10	<10	<10	<10	<10	77	<10	<10	<10	<50	2100	<10	0.16	0.32
	11/30/2004	154	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	12.0	82	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	0.01	0.15
Duplicate	11/30/2004	154	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	14.0	71	<1.0	<1.0	<1	<5	<5	<1	NA	NA
	2/2/2005	218	4	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	120	<5.0	<5.0	86.0	<25	<25	<5.0	<0.01	0.07
Duplicate	2/2/2005	218	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	130	<1.0	<1.0	96.0	<5	<5	<1	NA	NA
	4/13/2005	288	6	<1.0	<1.0	<1.0	<1.0	<1.0	3.8	1.6	42	<1.0	<1.0	60.0	<5.0	<5.0	<1.0	NA	0.25
	6/22/2005	358	8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	16	<1.0	<1.0	53.0	<5.0	<5.0	<1.0	<0.01	0.14
Duplicate	6/23/2005	359	8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	20	<1.0	<1.0	89.0	<5	<5	<1	NA	NA
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.5	<1.0	<1.0	78.0	<5.0	<5.0	<1.0	<0.01	0.18
	4/20/2006	660	18	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.4	6.8	<1.0	<1.0	21.0	<5	<5	<1	<10	<10
Duplicate	4/20/2006	660	18	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.5	7.1	<1.0	<1.0	22.0	<5.0	<5.0	<1	NA	NA

TABLE 4
Summary of CVOCs, Ethane, Ethene and Other Constituents in Groundwater
(Former) Tarheel Army Missile Plant
Burlington, North Carolina

Well ID	Sample Date	Days Since Start of EOS® Injection (Days)	Months Since End of EOS® Injection (Months)	Chlorinated Ethanes					Chlorinated Ethenes						Halomethanes			Light HC Gases	
				1,1,1-TCA (µg/L)	1,2-DCA (µg/L)	1,1-DCA (µg/L)	CT (µg/L)	CA (µg/L)	PCE (µg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	1,1-DCE (µg/L)	Vinyl Chloride (µg/L)	Chloro-form (µg/L)	Methylene Chloride (µg/L)	Trichloro-fluoromethane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
North Carolina Groundwater Standard				200	0.38	70.0	0.269	2,800	0.7	2.8	70	100	7.0	0.015	70	4.6	2,100	NE	NE
DOWNGRADIENT MONITOR WELLS																			
MW-102	4/14/04*	-76	-6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	NA	NA
	6/22/2004	-7	-4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.5**	<1.0	<1.0	<1.0	<1	<1	<1	<1	<10	<10
	8/18/2004	50	-2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<10	<10
	10/14/2004	107	0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	<0.01
	11/30/2004	154	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	<0.01
	2/3/2005	219	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	NA	NA
	4/13/2005	288	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	NA	NA
	6/22/2005	358	8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	NA	NA
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.7**	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	**0.01**	**0.02**
	4/20/2006	660	18	<1.0	<1.0	<1.0	<1.0	<1.0	**1.8**	**6.5**	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0		NA	NA
MW-115	4/14/04*	-76	-6	<1.0	<1.0	<1.0	<1.0	<1.0	**14**	**92.0**	**12**	<1.0	<1.0	<1.0	<1	<1	<1	NA	NA
	11/30/2004	154	2	<1.0	<1.0	<1.0	<1.0	<1.0	**1.5**	**9.2**	**33**	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<0.01	**0.06**
	2/2/2005	218	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**2.0**	**14**	<1.0	<1.0	**2.2**	<5.0	<5.0	<1.0	<0.01	<0.01
	4/13/2005	288	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.0**	**3.8**	<1.0	<1.0	**12.0**	<5.0	<5.0	<1.0	**0.19**	**0.11**
	6/22/2005	358	8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.3**	**2.6**	<1.0	<1.0	**4.3**	<5.0	<5.0	<1.0	**0.02**	**0.03**
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**5.4**	<5.0	<5.0	<1.0	**0.11**	**0.11**
	4/19/2006	559	18	1.70	<1.0	<1.0	<1.0	<1.0	<1.0	**2.1**	**3**	<1.0	<1.0	**1.9**	<5.0	<5.0	<1.0	NA	NA
MW-118	4/14/04*	-76	-6	<1.0	<1.0	**0.59 J**	<1.0	<1.0	**32**	**14.0**	**8.3**	<1.0	**2.0**	<1.0	<1	<1	<1	NA	NA
	6/22/2004	-7	-4	<1.0	<1.0	**1.3**	<1.0	<1.0	**12.8**	**15.1**	**6.54**	<1.0	**2.3**	<1.0	<1	<1	<1	**0.04**	**0.03**
	8/18/2004	50	-2	<1.0	<1.0	**1.9**	<1.0	<1.0	**27.3**	**10.7**	**7.1**	<1.0	**2.5**	<1.0	<1	<1	<1	**0.02**	<10
	10/14/2004	107	0	<1.0	<1.0	<1.0	<1.0	<1.0	**26.0**	**12.0**	**7.9**	<1.0	**1.3**	<1.0	<5.0	<5.0	<1.0	**0.04**	**0.02**
	11/30/2004	154	2	<1.0	<1.0	<1.0	<1.0	<1.0	**26**	**14.0**	**12**	**1**	**1.4**	<1.0	<5.0	<5.0	<1.0	**0.09**	**0.06**
	2/3/2005	219	4	<1.0	<1.0	<1.0	<1.0	<1.0	**19**	**10.0**	**18**	<1.0	**1.4**	<1.0	<5.0	<5.0	<1.0	NA	NA
	4/14/2005	289	6	<1.0	<1.0	<1.0	<1.0	<1.0	**18**	**11.0**	**19**	<1.0	**1.1**	<1.0	<5.0	<5.0	<1.0	<0.01	<0.01
	6/22/2005	358	8	<1.0	<1.0	<1.0	<1.0	<1.0	**16**	**9.6**	**19**	**1.1**	<1.0	**2.5**	<5.0	<5.0	<1.0	**0.17**	**0.05**
	8/16/2005	413	10	<1.0	<1.0	<1.0	<1.0	<1.0	**12**	**6.1**	**25**	<1.0	<1.0	**14.0**	<5.0	<5.0	<1.0	**0.21**	**0.15**
	4/20/2006	660	19	<1.0	<1.0	<1.0	<1.0	<1.0	**5.9**	**6.0**	**9.5**	1.0	<1.0	**3.2**	<5.0	<5.0	<1.0	NA	NA

TABLE 4
Summary of CVOCs, Ethane, Ethene and Other Constituents in Groundwater
(Former) Tarheel Army Missile Plant
Burlington, North Carolina

Well ID	Sample Date	Days Since Start of EOS* Injection (Days)	Months Since End of EOS* Injection (Months)	Chlorinated Ethanes: 1,1,1-TCA (µg/L)	1,2-DCA (µg/L)	1,1-DCA (µg/L)	CT (µg/L)	CA (µg/L)	Chlorinated Ethenes: PCE (µg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	1,1-DCE (µg/L)	Vinyl Chloride (µg/L)	Halomethanes: Chloroform (µg/L)	Methylene Chloride (µg/L)	Trichlorofluoromethane (µg/L)	Light HC Gases: Ethane (µg/L)	Ethene (µg/L)
North Carolina Groundwater Standard				200	0.38	70.0	0.269	2,800	0.7	2.8	70	100	7.0	0.015	70	4.6	2,100	NE	NE
OTHER SITE MONITORING WELLS																			
MW-2	4/20/2006	660	19	16.00	16.50	25.0	<1.0	<1.0	<1.0	1.8	<1.0	<1.0	73.0	<1.0	<5.0	<5.0	<1.0	NA	NA
MW-103	4/20/2006	660	19	4.60	<1.0	6.3	<1.0	<1.0	<1.0	1.6	<1.0	<1.0	6.9	<1.0	<5.0	<5.0	<1.0	NA	NA
MW-106	4/20/2006	660	19	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	6.2	4.1	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	NA	NA
MW-107	4/20/2006	660	19	<1.0	<1.0	<1.0	<1.0	<1.0	58	49.0	56	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	NA	NA
MW-109	4/20/2006	660	19	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	3.4	<1.0	<1.0	590	<5.0	<5.0	<1.0	NA	NA
MW-113	4/20/2006	660	19	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	NA	NA
MW-114	4/20/2006	660	19	1.70	6.10	7.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	15.0	<1.0	<5.0	<5.0	<1.0	NA	NA
MW-116	4/20/2006	660	19	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	NA	NA
MW-117	4/20/2006	660	19	<1.0	<1.0	<1.0	<1.0	<1.0	56	68.0	150	1.0	<1.0	6.4	<5.0	<5.0	<1.0	NA	NA
GROUNDWATER RECOVERY WELLS																			
MW-104	4/19/2006	659	19	<1.0	<1.0	<1.0	<1.0	<1.0	12	23.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	NA	NA
MW-110	4/20/2006	660	19	<10	<10	<10	<10	<10	130	1600.0	39	<10	150	<10	<50	<50	<10	NA	NA
MW-111	4/20/2006	660	19	<1.0	<1.0	<1.0	<1.0	<1.0	97	160.0	<1.0	2.4	5.1	<1.0	<5.0	<5.0	<1.0	NA	NA
MW-112	4/19/2006	659	19	<1.0	<1.0	<1.0	0.78	<1.0	26.2	73.0	<1.0	<1.0	2.3	<1.0	<5.0	<5.0	<1.0	NA	NA

Notes:
NE denotes not established.
NA denotes not analyzed.
* - Results provided by Weston Solutions. Source: Table 4-1, First Semi-Annual Groundwater Sampling Report 2003.
Shaded concentrations exceed the 2L Standards.

104
107
108
110
111

MISSING
PT-1
PT-2
PT-3
-4
-5
-6

TABLE 5
Summary of TCE Concentrations in Compliance Monitoring Wells
(Former) Tarheel Army Missile Plant
Burlington, North Carolina

Sample Date	4/1/2001*	10/1/2001*	4/14/2004*	4/14/2004	2/2/2005	4/13/2005	8/15/2005	4/20/2006
Days Since Start of Injection			-76	-76	218	288	412	660
Months Since End of Injection			-6	-6	4	6	10	18
Compliance Well No.	Concentrations in µg/L							
MW-104	**99**	**63**	**86**	**61**	**81**	**58**	**22**	**21**
MW-107	**410**	**350**	**750**	**427**	**160**	**95**	**50**	**49**
MW-108	**1,600**	**1,800**	**1,600**	**1,300**	<1.0	1.6	<1.0	2.4
MW-110	**2,500**	**2,700**	**200**	**1,750**	**5,100**	**1,700**	**1,500**	**1,600**
MW-111	**550**	**540**	**670**	**401**	**520**	**470**	**450**	**460**
Average TCE Concentration	**1,032**	**1,091**	**661**	**788**	**1,172**	465	404	426

Notes:

* - indicates sample results from Weston, 2003.

Negative Day and Month Values Denote Pre-injection Samples.

Bolded concentrations exceed the 2L Standard for TCE of 2.8 µg/L.

Consent Agreement Objective for Average Interim Target Concentration is 536 µg/L.

MW-108 is located within pilot test area.

Appendix F

Standard Operating Procedures

E.0018

BASIC RECORDKEEPING AND FIELD DOCUMENTATION

LAST REVIEW: July 2019

GUIDANCE:

- U.S. Environmental Protection Agency, Region 4, 2017. *Logbooks, ID: SESDPROC-1002-R0*. October 1.

1. OBJECTIVE

This document defines standard operating procedures for providing a basic level and quality of documentation throughout Terracon projects that complements and supports other data collection forms in the course of conducting field activities during environmental assessments, sampling, or remediation. The intent is not to place into writing an extensively detailed "diary" of every activity, but rather to log and record significant information that is useful as a measure of field activities during report writing and discussions with clients and agencies. The information should be legible and readily understood by other than the author; later being used as a reference by managers, other project staff and quality assurance reviewers.

2. EQUIPMENT AND DOCUMENTATION

- Field logbook;
- Project-specific Health and Safety Plan
- Terracon chain-of-custody record(s) or laboratory-specific chain-of-custody forms (typically supplied with sample containers),
- Pen, marker, or other indelible writing utensil
- Camera

3. PERSONAL PROTECTIVE EQUIPMENT

Every environmental project should be accompanied by a formal project-specific Health and Safety Plan (HASP or HSP). The on-site copy of the HSP will be incorporated into field documentation for on-site use, reference and field notations of required safety measurements and tailgate safety meetings. Any pre-task planning should be included.

a) Wear and maintain Terracon-approved PPE at project sites and in laboratories as required by project, task, and/or work environment, except when in a PPE-Free Zone. This includes use of the Core PPE Kit.

b) Don't try to account for unusual or special health and safety situations. Unusual or special health and safety situations should be addressed by the Health and Safety Plan and the Project Manager.

4. PROCEDURES

Appropriate documentation will be maintained to track project activities and document quality control. The following sections describe the specific records that will be maintained through the duration of the project.

Individual SOPs, agency- or client-approved sampling plans or other referenced guidance may prescribe specific additional documentation that staff will complete specific to field tasks. These forms will be fully completed unless otherwise approved by the Project Manager. Errors in all documents shall be deleted with one line through the erroneous text, and initialed by the author. At the start and end of work day on the site, the time shall be noted and each initialed or signed by the author.

Common and routine field documentation includes, but is not limited to the following:

Entries in the field notebook and chain-of-custody form will be made in ink. Documentation of each sample must be completed at the time of sampling.

- **Safety -** Every environmental project should be accompanied by a formal project-specific Health and Safety Plan (HASP or HSP). The on-site copy of the HSP will be incorporated into field documentation for on-site use, reference and field notations of required safety measurements and tailgate safety meetings. Any pre-task planning should be included.
- **Copies of Work Scope -** The on-site copy of the final site-specific Sampling and Analysis Plan (SAP) will be incorporated into field documentation for reference and field notations relative to field-dictated changes in sample collection, field screening, and laboratory analysis procedures. The field copy of the sampling plans will include drawings and maps that illustrate property location, property features, and proposed sampling locations relative to these features. The rationale behind each proposed location and laboratory analysis will be provided in text and/or tables of the sampling plan for reference by field staff. If a formal sampling and analysis plan is not required for the sampling activity or if the plan is field-derived (i.e., Triad approach), a field copy of the final proposal with scope of work will be incorporated into field documentation for reference and field notations relative to field-dictated changes in sample collection.
- **Field Logbook** - Field site managers will document activities on daily log forms. The site manager will maintain the daily log forms. Between field mobilizations, the Terracon Project Manager or Field Site Manager will make scanned electronic copies of field documentation for storage in the project file and will maintain the daily log forms

in a project file that will be placed at a central file location following completion of the project. The daily log forms will include documentation relative to observed site conditions, sample collection information, problems encountered, sampling plan deviations, photograph logs, and other relevant information.

- **Custody Records** - Field Site Managers will maintain a copy of completed chain-of-custody records for collected laboratory samples. The Field Site Manager will provide the Terracon Project Manager copies of the completed chain-of-custody forms following completion of field activities. The Project Manager will subsequently maintain these records at the central office file location.
- **Photographic Documentation** - A photographic log will be maintained to document project activities and site conditions. Photographs will be taken during each day of major field activity. Photographs will be stored electronically with the project file. Logs will be maintained to document photograph details such as date, direction, photographer, and photo descriptions.

  In taking photographs to document site conditions, field staff should keep in mind the following general rules;

  - Include objects of scale in the photographs. Preferably items of known dimension in close- up pictures (e.g., rulers, tape measures, survey rods) and common objects for wider view documentation of the property (e.g., car, street sign).
  - Keep in mind how the documentation will be used and presented in the final report. If unsure, ask the Project Manager.
  - To the extent practical, document the site from a distance and from different directions so that other users have a perspective of the “total” site.
  - Take and document more pictures than you will need for the final report.

E.0026

Chain of Custody Documentation

LAST REVIEW: July 2019

GUIDANCE:

- ASTM D4840-99 *Standard Guide for Sampling Chain-of-Custody Procedures*
- U.S. Environmental Protection Agency, Region 4, 2016. *Sample and Evidence Management, ID: SESDPROC-005-R3.* May 25.

1. OBJECTIVE

This document defines standard operating procedures for documenting sample collection using proper chain-of-custody techniques. The purpose of proper chain-of-custody techniques is to provide accountability for and documentation of sample integrity from the time samples are collected until sample disposal.

This procedure is intended to document sample possession during each stage of a sample's life cycle, that is, during collection, shipment, storage, and the process of analysis.

2. EQUIPMENT

- Terracon chain-of-custody record(s) or laboratory-specific chain-of-custody forms (typically supplied with sample containers),
- If samples are being shipped via courier, custody seals for coolers,
- Indelible ink marker, and
- Zip top plastic bag.

3. PERSONAL PROTECTIVE EQUIPMENT

a) Wear and maintain Terracon-approved PPE at project sites and in laboratories as required by project, task, and/or work environment, except when in a PPE-Free Zone. This includes use of the Core PPE Kit.

b) Don't try to account for unusual or special health and safety situations. Unusual or special health and safety situations should be addressed by the Health and Safety Plan and the Project Manager.

c) Also note sample container preservatives and cautions (e.g., "Caution: the 40-milliliter vials contain acid").

4. PROCEDURES

Sample containers will be labeled in advance of sampling with the sample date, location (monitor well identifier), sampler's initials, and project name. Written sample custody procedures will be followed whenever samples are collected, transferred, stored, analyzed, or destroyed, to trace possession and handling of a sample from collection to disposal.

Accountability for a sample begins when the sample is collected. Each sample will be accounted for with the use of sample labels, chain-of-custody forms, a record of sample collection, and field data notebooks.

The following chain-of-custody procedures will be implemented by the field staff:

- Entries in the field notebook and chain-of-custody form will be made in ink. Documentation of each sample must be completed at the time of sampling.
- The chain-of-custody should include at a minimum:
    - Project name and/or number
    - Name and contact information for the sampler collector
    - Collector's signature
    - Sample designation
    - Date sampled
    - Time sampled
    - Sample media
    - Number and size of containers for each sample
    - Types of sample preservatives used
    - Analyses requested
- The original chain-of-custody must accompany the samples at all times after collection, until relinquished to the analytical laboratory. A copy of the chain-of-custody form will be kept by the field staff for filing in the project folder at the office.
- The original chain-of-custody form should be sealed in a Ziplock bag if shipping samples on ice via courier. The sealed Zip top bag will protect the document from moisture that may be present due to sample preservation. The chain-of-custody should be the last item packed in a sample cooler, so that it is easily accessible if the cooler is misplaced by the courier or shipped to an incorrect address.
- If shipping samples, a chain-of-custody specific to the contents of each cooler will be packaged with the respective samples. Chain-of-custody forms should not be shipped in separate containers than the samples they document. At least one custody seal should be completed by the collector and applied to each cooler sent to the laboratory. The custody seal should be affixed to the cooler in such a manner as to ensure breakage of the seal upon opening of the cooler (e.g., across the cooler lid opening).
- When the possession of samples is transferred, the individuals relinquishing and receiving the samples will sign, date, and note the time on the chain-of-custody form.

5. REFERENCES

- ASTM D4840-99 *Standard Guide for Sampling Chain-of-Custody Procedures*
- U.S. Environmental Protection Agency, Region 4, 2016. *Sample and Evidence Management, ID: SESDPROC-005-R3.* May 25.

E.0320

Hollow-Stem Auger Drilling

LAST REVIEW: August 2019

GUIDANCE:

- **ASTM D5784/D5784M - 18** Standard Guide for Use of Hollow-Stem Augers for Geoenvironmental Exploration and the Installation of Subsurface Water Quality Monitoring Devices.
- **ASTM D1452/D1452M – 16** Standard Practice for Soil Investigation and Sampling by Auger Borings.
- **ASTM D4700 - 91(2006)** Standard Guide for Soil Sampling from the Vadose Zone
- U.S. Environmental Protection Agency, Region 4, 2018. *Design and Installation of Monitoring Wells, ID: SESDGUID-101-R2*. January 16.

1. OBJECTIVE AND BACKGROUND

To provide standard procedure to maintain the integrity of the borehole during drilling operations in soils or fills whereby the side walls of the boring cannot do so naturally, sufficient to prevent sloughing or caving of materials to depth. The use of hollow-stem augers allows the sampling of soils and access for well construction through their hollow centers.

The hollow stem auger procedure can be used in lieu of driven casing in conjunction with joint seals for fluid drilling. This procedure is applicable to drilling and sampling unconsolidated soils and highly weathered bedrock.

2. EQUIPMENT

Drilling equipment will be commercially-made hollow stem augers with drill flights sufficient to the needs of the project. Supporting tools and accessories will be as specified by the manufacturer or a generic equivalent approved by the Drilling Coordinator or Equipment Manager.

Four and one-quarter (4.25)-inch or eight and one-quarter (8.25)-inch nominal inside diameter hollow stem augers may be used for standard split spoon and Shelby tube sampling, special coring or rotary wash boring operations and for the construction of monitoring wells. Nominal outside diameter of flights will be 9 to 11 inches, depending on manufacturer's construction and wear. Commercially manufactured connecting bolts will be used to connect drill sections.

Joint seals will be of rubber or neoprene as recommended by individual manufacturer. For environmental sites with high solvent concentrations, special Teflon® seals may be required by the Project Manager and will be specified prior to mobilization.

Disposable end plugs will be of materials suitable to the task and as specified by Project manager or Equipment Manager. Environmental sites will use Teflon, steel or stainless-steel end plugs depending upon contaminants being investigated.

Decontamination of equipment and handling and storage of hazardous waste is required. Reference SOP E. 2235, E.2410, E.2420 for specific equipment and procedures.

3. DOCUMENTATION

a) A lithologic/boring log classifying soil and/or rock type observed should be completed for each boring.

b) A GW-1 form should be completed and submitted to the North Carolina Department of Environmental Quality Division of Water Resources for each monitoring well installed in a boring in accordance with 15A North Carolina Administrative Code Subchapter 02C.

4. PERSONAL PROTECTIVE EQUIPMENT

a) Wear and maintain Terracon-approved PPE at project sites and in laboratories as required by project, task, and/or work environment, except when in a PPE-Free Zone. This includes use of the Core PPE Kit.

b) Wear chemical resistant gloves when handling investigative derived waste.

c) Don't try to account for unusual or special health and safety situations. Unusual or special health and safety situations should be addressed by the Health and Safety Plan and the Project Manager.

5. PROCEDURES

The field procedures for operating the drilling equipment will be as specified by the manufacturer for the equipment.

The application of the procedure for design will be by the Project Manager using as guidance ASTM D5784. Consistent with Section 1.5 of the standard the guidance is not intended to replace education or experience and will be used in conjunction with professional judgment.

Monitoring wells should be constructed in accordance with 15A North Carolina Administrative Code Subchapter 02C. Outer casing should be installed if borings are advanced into bedrock to avoid contamination from overlying unconsolidated material entering the bedrock aquifer.

6. TRAINING AND CERTIFICATION

The drill operator and drill helper will have entered and be current in the following;

- Industry drilling experience no less than 3 years for operator, 1 year for helper.
- Enrolled in Terracon's medical monitoring program for environmental operations (if employed by Terracon).
- Completed 40-Hour OSHA 1910.120 HAZWOPER training, inclusive of respiratory protection.
- Current certificate of annual 8-Hour OSHA 1910.120 HAZWOPER Refresher Training
- Knowledge and experience in drilling both vadose and saturated soils.
- Completed Terracon's internal Drilling Education classes (if employed by Terracon):
    - Driller Ergonomics Part 1 & 2
    - Exploration Team Safety Process
    - Exploration: An IIF Testimonial
    - PPE for Exploration
    - Project Execution and Situational Awareness
    - Utility Locates
    - Terracon Life Savings Absolutes
- Be licensed as applicable by state and/or local licensing agency.
- Knowledge and experience in the operation and maintenance of the specified equipment.
- If the drill operator and drill helper(s) are subcontractor employees, equivalent training and medical monitoring will be required.

E.0340

Air Rotary Drilling

LAST REVIEW: August 2019

GUIDANCE:

- **ASTM D5782 - 18** Standard Guide for Use of Direct Air-Rotary Drilling for Geoenvironmental Exploration and the Installation of Subsurface Water-Quality Monitoring Devices
- U.S. Environmental Protection Agency, Region 4, 2018. *Design and Installation of Monitoring Wells, ID: SESDGUID-101-R2*. January 16.

1. OBJECTIVE AND BACKGROUND

To provide standard procedure for drilling and soil sampling collection using equipment and techniques of the current industry. This procedure is applicable to drilling into consolidated bedrock. During this type of drilling, high pressure air is forced into the borehole during advancement. The high-pressure air returns bedrock chips to the surface.

2. EQUIPMENT

Drilling equipment will be commercially-made and sufficient to the needs of the project. Supporting tools and accessories will be as specified by the manufacturer or a generic equivalent approved by the Drilling Coordinator or Equipment Manager.

Decontamination of equipment and handling and storage of hazardous waste is required. Reference SOP E. 2235, E.2410, E.2420 for specific equipment and procedures.

3. DOCUMENTATION

a) A lithologic/boring log classifying soil and/or rock type observed should be completed for each boring.

b) A GW-1 form should be completed and submitted to the North Carolina Department of Environmental Quality Division of Water Resources for each monitoring well installed in a boring in accordance with 15A North Carolina Administrative Code Subchapter 02C.

4. PERSONAL PROTECTIVE EQUIPMENT

a) Wear and maintain Terracon-approved PPE at project sites and in laboratories as required by project, task, and/or work environment, except when in a PPE-Free Zone. This includes use of the Core PPE Kit.

b) Wear chemical resistant gloves when handling investigative derived waste.

c) Don't try to account for unusual or special health and safety situations. Unusual or special health and safety situations should be addressed by the Health and Safety Plan and the Project Manager.

5. PROCEDURES

The field procedures for operating the drilling equipment will be as specified by the manufacturer for the equipment.

The application of the procedure for design will be by the Project Manager using as guidance ASTM D5782. Consistent with Section 1.7 of the standard the guidance is not intended to replace education or experience and will be used in conjunction with professional judgment.

Monitoring wells should be constructed in accordance with 15A North Carolina Administrative Code Subchapter 02C. Outer casing should be installed if borings are advanced into bedrock to avoid contamination from overlying unconsolidated material entering the bedrock aquifer.

6. TRAINING AND CERTIFICATION

The drill operator and drill helper will have entered and be current in the following;

- Industry drilling experience no less than 3 years for operator, 1 year for helper.
- Enrolled in Terracon's medical monitoring program for environmental operations (if employed by Terracon).
- Completed 40-Hour OSHA 1910.120 HAZWOPER training, inclusive of respiratory protection.
- Current certificate of annual 8-Hour OSHA 1910.120 HAZWOPER Refresher Training
- Knowledge and experience in drilling both vadose and saturated soils.
- Completed Terracon's internal Drilling Education classes (if employed by Terracon):

- Driller Ergonomics Part 1 & 2
- Exploration Team Safety Process
- Exploration: An IIF Testimonial
- PPE for Exploration
- Project Execution and Situational Awareness
- Utility Locates
- Terracon Life Savings Absolutes

- Be licensed as applicable by state and/or local licensing agency.

- Knowledge and experience in the operation and maintenance of the specified equipment.

- If the drill operator and drill helper(s) are subcontractor employees, equivalent training and medical monitoring will be required.

E.0410

Subsurface Sampling – General Push-Probe Technology

LAST REVIEW: August 2019

GUIDANCE:

- **ASTM D6282/D6282M - 14** Standard Guide for Direct Push Soil Sampling for Environmental Site Characterizations
- U.S. Environmental Protection Agency, Region 4, 2018. *Design and Installation of Monitoring Wells, ID: SESDGUID-101-R2*. January 16.

1. OBJECTIVE AND BACKGROUND

Geoprobe© equipment is a proprietary system capable of performing both sampling and onsite analysis functions. The proprietary name Geoprobe© has become synonymous with push probe technology, where the samplers or monitoring technology are advanced to depth by hydraulic push. The push may be assisted by inducing a vibration to the sampler.

Generally, sampling is accomplished using hydraulically pushed probes and analysis is accomplished using a gas chromatograph (GC). This equipment was originally developed to screen for the subsurface presence of volatile organic compounds (VOCs) in unsaturated zone soil gas. It may also be used to obtain soil and ground water samples and to screen such samples for VOCs or semivolatile organic compounds (SVOCs). However, the analytes of primary interest in Geoprobe work are generally VOCs.

Geoprobe equipment offers a relatively high degree of mobility for sampling and the ability to produce screening level analytical results while still mobilized to a site. The cost-effectiveness of this approach is reduced when soil or ground water samples are of interest, the analytes involved are SVOCs, or a higher degree of analytical quality is necessary.

The purpose of this document is to provide Geoprobe© operators with a standard field procedure for general application. It may be supplemented by the generation of written site-specific sampling and analysis plans (SAPs) prepared prior to field work. Project Managers are generally responsible for providing Geoprobe© operators with a SAP sufficiently in advance of proposed site work to allow for proper mobilization (including procurement of any necessary sampling equipment, sample containers, analytical standards, reagents, personal protective equipment, or other necessary equipment) and are required to consult with Geoprobe operators in the development of such SAPs.

2. EQUIPMENT

Drilling equipment will consist of commercially-made Macro-core® rods and plastic liners sufficient to the needs of the project. Supporting tools and accessories will be as specified by the manufacturer or a generic equivalent approved by the Drilling Coordinator or Equipment Manager.

Decontamination of equipment and handling and storage of hazardous waste is required. Reference SOP E. 2235, E.2410, E.2420 for specific equipment and procedures.

3. DOCUMENTATION

a) A lithologic/boring log classifying soil and/or rock type observed should be completed for each boring.

b) A GW-1 form should be completed and submitted to the North Carolina Department of Environmental Quality Division of Water Resources for each monitoring well installed in a boring in accordance with 15A North Carolina Administrative Code Subchapter 02C.

4. PERSONAL PROTECTIVE EQUIPMENT

a) Wear and maintain Terracon-approved PPE at project sites and in laboratories as required by project, task, and/or work environment, except when in a PPE-Free Zone. This includes use of the Core PPE Kit.

a) Wear chemical resistant gloves when handling investigative derived waste.

b) Don't try to account for unusual or special health and safety situations. Unusual or special health and safety situations should be addressed by the Health and Safety Plan and the Project Manager.

5. PROCEDURES

The field procedures for operating the drilling equipment will be as specified by the manufacturer for the equipment.

The application of the procedure for design will be by the Project Manager using as guidance ASTM D6282. Consistent with Section 1.10 of the standard the guidance is not intended to replace education or experience and will be used in conjunction with professional judgment.

6. TRAINING AND CERTIFICATION

The drill operator and drill helper will have entered and be current in the following;

- Industry drilling experience no less than 3 years for operator, 1 year for helper.
- Enrolled in Terracon's medical monitoring program for environmental operations (if employed by Terracon).
- Completed 40-Hour OSHA 1910.120 HAZWOPER training, inclusive of respiratory protection.
- Current certificate of annual 8-Hour OSHA 1910.120 HAZWOPER Refresher Training
- Knowledge and experience in drilling both vadose and saturated soils.
- Completed Terracon's internal Drilling Education classes (if employed by Terracon):
    - Driller Ergonomics Part 1 & 2
    - Exploration Team Safety Process
    - Exploration: An IIF Testimonial
    - PPE for Exploration
    - Project Execution and Situational Awareness
    - Utility Locates
    - Terracon Life Savings Absolutes
- Be licensed as applicable by state and/or local licensing agency.
- Knowledge and experience in the operation and maintenance of the specified equipment.
- If the drill operator and drill helper(s) are subcontractor employees, equivalent training and medical monitoring will be required.

E.0468

Sample Handling – Soil (Safety Level D)

LAST REVIEW: July 2019

GUIDANCE:

- Laboratory- or program-specific requirements for handling, preservation, and transport of samples for chemical analyses.
- U.S. Environmental Protection Agency, Region 4, 2020. *Soil Sampling, ID: LSASDPROC-300-R4.* June 11.

1. OBJECTIVE

To obtain a representative soil or sediment sample for chemical analysis. This includes the documentation of sampling methods, and protocols used for sample collection, processing, handling and shipment.

2. BACKGROUND AND REFERENCE

Soil sampling is performed for environmental-related projects to determine the type, concentrations, and extent of chemical contamination at sites where contaminated is suspected to originate on the site. Soil samples can aid in identification of contamination source areas.

3. EQUIPMENT

- Monitoring equipment (Photo Ionization Detector [PID], Flame Ionization Detector [FID], multi-gas meters, colormetric detector tubes) as specified by Project Manager;
- Sampling device (split barrel sampler, hand auger, hand trowel, shovel, push probe sampler, or other appropriate sampling device);
- Decontamination equipment;
- Laboratory prepared sample containers;
- Forms including soil boring form, chain-of-custody, etc;
- Indelible ink pen;
- Stainless steel bowl for composite sampling;
- Plastic sheeting;
- Site map;
- Measuring wheel;
- Engineers tape marked in units of feet, tenths of a foot (0.1 ft.), and hundredths of a foot (0.01 ft.);
- Disposable chemical-resistant gloves; and
- Chem-wipes.

4. DOCUMENTATION

Lithological logging

The lithology of the sample along with any other pertinent information shall be logged by an environmental consultant. Particular consideration should be given to grain-size distribution (relative percentages of different size materials), presence of lamination or layering and soil consistency, and presence of contamination (PID measurements, odor, and staining). Estimate the mineralogy for coarser grained material. Classify soil samples and enter onto the boring log using the Unified Soil Classification System (USCS), following methods outlined in ASTM standard D 2488 (American Society for Testing and Materials, 1984b). Prepare the final boring log using observations of the driller and on-site Geologist/Engineer/Environmental Scientist and from laboratory analysis.

Sample Documentation

Collected soil samples should be documented in the lithologic log, field logbook, and laboratory chain-of-custody form in accordance with SOP E.0018 and E.0026. Specifically, sample depth, collection time, and requested analyses should be recorded.

5. PERSONAL PROTECTIVE EQUIPMENT

a) Wear and maintain Terracon-approved PPE at project sites and in laboratories as required by project, task, and/or work environment, except when in a PPE-Free Zone. This includes use of the Core PPE Kit.

b) Wear disposable nitrile or other chemical resistant gloves at all times.

c) Monitor volatile organic concentrations in work vicinity with a PID.

d) Don't try to account for unusual or special health and safety situations. Unusual or special health and safety situations should be addressed by the Health and Safety Plan and the Project Manager.

e) Also note sample container preservative and cautions (e.g., "Caution: the 40-milliliter vials contain acid").

6. PROCEDURES

a) Surficial soil/sampling

- Determine sample location (set grid, if necessary)
- Determine the proper sampling device based on soil type, depth, sample type, etc.
- Collect each sample at the specified depth consistently for each sample.

b) Direct Sampling

- Transfer sample directly from the sampling device to the sample container.

- If evaluating for organic vapors, transfer the sample to plastic bag (zip top) for field screening. When appropriate, the sample should be split so as to obtain a sample for screening that is representative of the sample for testing. This can be accomplished by slicing the sample (if cohesive) lengthwise or by using other mechanical means. Care should be taken so as not to over-agitate the sample, especially if volatile organic compound testing is required.
- Document visual and physical characteristics

c) Composite sampling (non-volatile only)

- Transfer equal volume/weight of sample from each location/depth to a stainless-steel mixing bowl
- Use a hand trowel or spoon to mix the soil sample
- If the sample size is very large, composite on a large sheet of clean plastic or stainless-steel sheet pan or mix equal volumes from numerous composite samples.
- If soils are cohesive, break up clumps.
- Spread soil uniformly on plastic sheet or in bottom of stainless-steel bowl or stainless-steel tray and divide into quarters (quartering procedure).
    - Two quarters should then be mixed to form halves.
    - The two halves should be mixed to form a homogenous matrix.
    - Repeat the quartering procedure several times until the sample is adequately mixed.
- Obtain equal quantity of soil from each sample for transfer to sample container (without mixing or break up).

d) Decontamination

- Decontamination procedures should be specified by the project manager.
- Decontamination procedures for UST sites includes an Alconox® detergent scrub followed by a clean water rinse.
- Decontamination fluids are to be collected and replenished between sample locations (each boring) to reduce the potential for cross contamination.

e) Sample preservation - store in cooler with ice. Use preservative as appropriate for the analytes tested.

f) Sample documentation

- Complete field documentation and chain-of-custody form (see SOPs E.0018 and E.0026). Data to be recorded includes sampling location, methodology, depth, visual and physical characteristics, time and date.

7. TRAINING AND CERTIFICATION

- Completed 40-Hour OSHA 1910.120 HAZWOPER training, inclusive of respiratory protection, and a current certificate of annual 8-Hour OSHA 1910.120 HAZWOPER Refresher Training is required for all personnel handling media contaminated by hazardous substances.

E.0470

Groundwater Sampling – Safety Level D

LAST REVIEW: August 2019

GUIDANCE:

- **ASTM D4448-85a** *Standard Guide for Sampling Groundwater Monitoring Wells*.
- U.S. Environmental Protection Agency, Region 4, 2017. *Groundwater Sampling, ID: SESDPROC-301-R4*. April 26.

1. OBJECTIVE

To collect a representative groundwater sample from the sampling point for chemical analysis. This includes the documentation of sampling methods and supplies, and protocol to reduce potential for inaccurate representative sampling and or cross-contamination during the sampling event.

2. EQUIPMENT

- Monitoring equipment specified by project manager;
- Electronic water level indicator, phase level indicator, etc.;
- Decontamination equipment;
- Proper forms, labels and indelible ink pen;
- pH, temperature, and specific conductance meters;
- Sample containers and packing material, tape, and labels;
- Filtration device and filters (and fixing agents as appropriate);
- Cooler with ice pack and packing media;
- Bucket (calibrated in gallons or liters);
- Sampling device;
- Polyethylene tubing (appropriate size for pump being used);
- Silicone tubing (for peristaltic pumps);
- Bailers, pumps, etc.;
- Keys for locking cap on well;
- Rope - steel, nylon, teflon, or polypropylene;
- De-ionized (DI) water;
- Chemical-resistant gloves; and
- Site map.

3. DOCUMENTATION

- Record all pertinent sampling information on the sampling container label, sampling information form, chain-of-custody, and shipping form.

- Pertinent data will vary based on the parameter and the form; however, the following data must be recorded - time, date, job number, project name, sampling location, samplers name, sampling methodology, parameters to be analyzed, stabilization data, and general observations.
- Make appropriate entries in the chain-of-custody form at time of sample collection. Ensure that the chain-of-custody protocol required for the project is maintained.

4. PERSONAL PROTECTIVE EQUIPMENT

a) Wear and maintain Terracon-approved PPE at project sites and in laboratories as required by project, task, and/or work environment, except when in a PPE-Free Zone. This includes use of the Core PPE Kit.

b) Wear disposable nitrile or other chemical resistant gloves at all times.

c) Don't try to account for unusual or special health and safety situations. Unusual or special health and safety situations should be addressed by the Health and Safety Plan and the Project Manager.

d) Also note sample container preservatives and cautions (e.g., "Caution: the 40-milliliter vials contain acid").

5. PROCEDURES

a) Preparation

- Meet with Project Manager;
- Obtain the bottles and forms from analytical laboratory, and equipment necessary to complete the sampling event;
- Calibrate all field equipment i.e., pH and conductivity meters;
- Establish sampling well sequence (generally least impacted to most impacted).

b) Field Activities

- Water levels – collect and record water levels
- Well depth – measure and document
- Groundwater geochemical parameters – measure and document

c) Contamination minimization

- Use plastic sheet to prevent spillage onto existing ground surface

- Use proper bailing techniques (hand over hand) to prevent rope from touching the ground

d) Sample Collection

1) Preservation

- Use containers with proper preservative as prescribed by analytical laboratory.

2) Filtration

- Metals only - (Samples for VOC analyses are not be filtered).
- Field filter samples collected for dissolved metals analyses immediately after collecting the sample (if required and/or allowed by local or state regulations).
- Filter the sample prior to adding preservative or transferring to sample container containing a preservative (if required and/or allowed by local or state regulations).
- Discard the filter and tubing and dispose of in clean transfer container.

3) Collection

- Minimize disturbances that may aerate the sample (i.e., lower bailer slowly into water, pour slowly into sample container, use low flow sampling procedures, etc.).
- Pour water from the top of the bailer or insert the bottom emptying device for sample transfer.
- Transfer the groundwater sample directly to the laboratory prepared sample container or the filter cup.
- Samples collected for VOCs should always be collected from a recently filled bailer full of water as soon as it is brought to the surface.
- Collect samples for VOCs by forming a positive meniscus on the sample vial and capping immediately.
- VOC samples must be free of air bubbles.
- Do not over-fill sample containers which contain a preservative.
- Place samples in cooler with ice.

4) Filtration Procedures

- Set up filtering apparatus according to the manufacturer's directions.
- Use a 0.45-micron membrane filter (may need a pre-filter to prevent clogging if the sample is turbid).

- Flush a minimum of 250 ml of D.I. water (or larger volume if recommended by manufacturer specifications) through the filtering apparatus and filter prior to filtering the sample.
- Pump the sample through the filter and discard the initial 100-200 ml (if you have sufficient volume).
- Collect and transfer the remaining sample volume to the sample container.

5) Data Documentation

- Record all pertinent sampling information on the sampling container label, sampling information form, chain-of-custody, and shipping form.
- Pertinent data will vary based on the parameter and the form; however, the following data must be recorded. Time, date, job number, project name, sampling location, samplers name, sampling methodology, parameters to be analyzed, stabilization data, and general observations.
- Make all entries in the chain-of-custody form prior to leaving the site. Ensure that the chain-of-custody protocol required for the project is maintained.
- If samples must be shipped, the chain-of-custody form must be enclosed with the samples and the container sealed with Terracon security labels. Obtain a post office receipt, bill of lading or similar document from the shipper to be included as part of the chain-of-custody documentation. Return one copy of the chain-of-custody documentation to the project manager.

6) Equipment Cleaning

- Clean all equipment used as specified by the Project Manager and according to cleaning procedures prior to collecting a sample from the next sample location.

7) Sample Packaging and Shipment

- Carefully package the samples in a cooler with ice. Take care to wrap the sample containers in packing materials and place in sealed Zip top bags.
- Ship the samples via overnight courier as specified by the Project Manager. Be sure to secure all address labels with clear packing tape.

6. TRAINING AND CERTIFICATION

- Completed 40-Hour OSHA 1910.120 HAZWOPER training, inclusive of respiratory protection, and a current certificate of annual 8-Hour OSHA 1910.120

HAZWOPER Refresher Training is required for all personnel handling media contaminated by hazardous substances.

E.0480

Surface Water Sampling

LAST REVIEW: October 2019

GUIDANCE:

- **ASTM D5358-93** *Standard Practice for Sampling with a Dipper or Pond Sampler*.
- U.S. Environmental Protection Agency, Region 4, 2016. *Surface Water Sampling, ID: SESPROC-201-R4*. December 16.

1. OBJECTIVE

To collect a representative surface water sample from the sampling point for chemical analysis. This includes the documentation of sampling methods, sampling supplies, and protocol to reduce potential for alteration and or cross-contamination during the sampling event.

2. BACKGROUND AND REFERENCE

This TSOP describes the procedure and equipment for collecting surface samples of water or other liquids using a dipper or equivalent. A pond sampler or dipper with extension handle allows the operator to sample streams, ponds, waste pits, and lagoons as far as 15 ft from the bank or other secure footing. The dipper is useful in filling a sample bottle without contaminating the outside of the bottle. This TSOP can be used to describe the sampling procedures to be used from a boat or from within the stream using hip-waders, however specific safety precautions should be implemented in these situations. See the project manager if sampling will not be conducted from the shore or other stable surface (boat dock, etc.).

3. EQUIPMENT

- Sampling and monitoring equipment specified by project manager;
- Disposable chemical-resistant gloves;
- Cleaning equipment;
- Proper forms, labels and indelible ink pen;
- Sample containers and packing material, tape, and labels;
- Cooler with ice pack and packing media;
- Dipper or equivalent sampling device; and
- Site map.

4. DOCUMENTATION

- Record all pertinent sampling information on the sampling container label, sampling information form, chain-of-custody, and shipping form.
- Pertinent data will vary based on the parameter and the form; however, the following data must be recorded - time, date, job number, project name, sampling location, samplers name, sampling methodology, parameters to be analyzed, stabilization data, and general observations.
- Make appropriate entries in the chain-of-custody form at time of sample collection. Ensure that the chain-of-custody protocol required for the project is maintained.

5. PERSONAL PROTECTIVE EQUIPMENT

a) Wear and maintain Terracon-approved PPE at project sites and in laboratories as required by project, task, and/or work environment, except when in a PPE-Free Zone. This includes use of the Core PPE Kit.

b) Wear disposable nitrile or other chemical resistant gloves at all times.

c) Don't try to account for unusual or special health and safety situations. Unusual or special health and safety situations should be addressed by the Health and Safety Plan and the Project Manager.

d) Also note sample container preservatives and cautions (e.g., "Caution: the 40-milliliter vials contain acid").

6. PROCEDURES

1. Clean sampling equipment in accordance with E.2410.
2. Locate sampling site at the designated point in the stream.
3. Attach extensions to the dipper as required to reach the distance from the shore specified by the project manager.
4. Submerge the container end of the dipper at sampling point such that mouth of dipper is at the depth specified by the project manager. If no depth has been specified, submerge the dipper about 2 to 3 inches below the water surface, if possible.
5. Allow the dipper to fill; rinse the dipper by shaking and discharging this water. Repeat this procedure three times.
6. Collect sample and transfer into a holding container or directly to the laboratory sample container. If a holding container is used for ease of transfer or to create a composite sample from multiple sampling locations, transfer water from the holding container into sampling bottles.

7. Fill out appropriate field form(s) documenting sample location, time, and other pertinent information before leaving sampling site.

7. TRAINING AND CERTIFICATION

- Completed 40-Hour OSHA 1910.120 HAZWOPER training, inclusive of respiratory protection, and a current certificate of annual 8-Hour OSHA 1910.120 HAZWOPER Refresher Training is required for all personnel handling media contaminated by hazardous substances.

E.0552

Field Headspace Screening – Soil / Photoionization Detector

LAST REVIEW: August 2019

GUIDANCE:

- Operation Manual for Equipment Being Used

1. OBJECTIVE

To provide a qualitative and limited quantitative field screening of soil samples to aid in the evaluation of soil for the presence of volatile or semi-volatile organic chemicals.

2. BACKGROUND AND REFERENCE

The procedure is premised on the physical property of volatile compounds to move from the soil matrix to the airborne state as vapor. The amount of airborne material as vapor will be a relative concentration between samples if the volume of sample, volume of air, temperature and period of testing remain reasonably constant. The measurement is semi-quantitative for qualitative decision-making.

The photoionization detector (PID) ionizes molecules using ultraviolet (UV) radiation and can be used with a variety of electron voltage lamps best matched to the compound(s) of concern at a site. The UV radiation strips electrons from the molecules, producing ions that produce a current proportional to the number of ions generated. The PID is nonspecific for gas and vapor detection for organic and some inorganic compounds.

Sensitivity is related to the ionization potential of the compound being monitored. PIDs will only detect compounds that have ionization energies similar to the energy of the photons the detector uses. Gases with ionization potential values below the electron volt (eV) output of the lamp will be detected. The most common PID lamp used is the 10.6 eV lamp because it detects most volatile organic compounds. It is recommended that the ionization potential of the chemicals of concern be known in order to select the most appropriate lamp for a specific project.

The PID is used to detect total concentrations of many organic and some inorganic gases and vapors. The PID is not designed to detect airborne concentrations below 1 part per million (ppm). Some chemicals may cause interference and false readings.

Measurements cannot be used as the sole indicator of soil contamination or in lieu of prescribed laboratory chemical testing for purposes of regulatory compliance. This procedure is only to be used for sites involving volatile organic compounds. This procedure <u>is not</u> to be used for purposes of health and safety monitoring.

3. EQUIPMENT

- Calibration gas from manufacturer
- Photoionization detector (PID) equipped with 10.0 eV lamp or greater (depending on contaminant to be screened).
- Charger unit and source of 110v power when needed, not in the form of a generator.
- Ziploc® bags or other sealable container of at least 500 cubic centimeters to provide a fixed headspace volume for constancy between tests
- Forms and indelible ink pen
- Disposable chemical-resistant gloves
- Cooler with ice

4. DOCUMENTATION

Record the highest reading in calibration gas equivalents on forms provided by the Project Manager or in the field log book. Pertinent data will vary based on the parameter and the form; however, the following data must be recorded; date, job number, project name, sampling location, sample interval (if appropriate), sample identification, samplers name, and general observations.

5. PERSONAL PROTECTIVE EQUIPMENT

a) Wear and maintain Terracon-approved PPE at project sites and in laboratories as required by project, task, and/or work environment, except when in a PPE-Free Zone. This includes use of the Core PPE Kit.

b) Wear disposable nitrile or other chemical resistant gloves at all times.

c) Don't try to account for unusual or special health and safety situations. Unusual or special health and safety situations should be addressed by the Health and Safety Plan and the Project Manager.

6. PROCEDURES

On a daily basis, the PID should be gas calibrated to a manufacturer's gas standard and the results recorded in the field logbook. If the unit does not calibrate, return it to the local Terracon equipment manager for evaluation and, if necessary, repair.

Immediately prior to making a field measurement the unit should be operated for approximately 1 minute and any background concentrations noted or "zero-ed out" relative to measurements.

Prior to site testing an empty, unused test chamber should be sealed containing nothing but ambient air and allowed to stabilize for 1 minute. Test the chamber headspace to identify background contaminants contributed by the chamber itself. If anything is

detected, change to another type of chamber which is inert relative to contributing ionizable materials to the headspace.

The following protocol will be followed:

- Transfer soil sample representative of the condition to be measured from the sampling device to Ziploc® bag, or other sealable container.
- Sample material should be representative of the vertical and horizontal cross-section of the sampled interval.
- The volume of soil should remain as constant as is practical for all site tests.
- The soil volume should not exceed 25% of the total volume of the Ziplock bag.
- Immediately seal the bag after transfer and allow the sample to equilibrate for a minimum of 15 minutes at ambient temperatures above 50° F.
- Insert probe into sealed bag for reading for 1 minute for volatile compounds of concern and 3 minutes for semi-volatile compounds of concern to account for varied response times.
- Record highest reading obtained as parts per million (ppm) calibration gas.

SAMPLE DISPOSAL

Soil samples should not leave the site and should be included with other soil for proper disposal in accordance with project-specific disposal guidelines.

7. TRAINING AND CERTIFICATION

- Completed 40-Hour OSHA 1910.120 HAZWOPER training, inclusive of respiratory protection, and a current certificate of annual 8-Hour OSHA 1910.120 HAZWOPER Refresher Training is required for all personnel handling media contaminated by hazardous substances.

E.0554

Field Screening – Air / Photoionization Detector

LAST REVIEW: August 2019

GUIDANCE:

- Operations Manual for Equipment Being Used

1. OBJECTIVE

To provide a qualitative and limited quantitative field screening of ambient air to aid in the evaluation of air quality relative to monitoring health and safety of workers involved in environmental field activities involving known or potential volatile chemicals of concern.

2. BACKGROUND AND REFERENCE

The procedure is premised on the physical property of volatile compounds to move to the airborne state as vapor. The amount of airborne material as vapor will be a relative concentration dependent on air currents and dilution. The measurement is semi-quantitative for qualitative decision-making.

The intent is to monitor airborne concentrations of chemicals of concern in the breathing zone of workers. Unless otherwise specified by the health and safety plan, the breathing zone will be considered the height above ground surface generally corresponding from knees-to-chin to provide for upright, squatting and bending during field activity by workers.

The photoionization detector (PID) ionizes molecules using ultraviolet (UV) radiation and can be used with a variety of electron voltage lamps best matched to the compound(s) of concern at a site. The UV radiation strips electrons from the molecules, producing ions that produce a current proportional to the number of ions generated. The PID is nonspecific for gas and vapor detection for organic and some inorganic compounds.

Sensitivity is related to the ionization potential of the compound being monitored. PIDs will only detect compounds that have ionization energies similar to the energy of the photons the detector uses. Gases with ionization potential values below the electron volt (eV) output of the lamp will be detected. The most common PID lamp used is the 10.6 eV lamp because it detects most volatile organic compounds. It is recommended that the ionization potential of the chemicals of concern be known in order to select the most appropriate lamp for a specific project.

The PID is used to detect total concentrations of many organic and some inorganic gases and vapors. The PID is not designed to detect airborne concentrations below 1 part per million (ppm). Some chemicals may cause interference and false readings.

This procedure is to be used primarily for purposes of health and safety monitoring. These readings are not a representative screening indication of the levels of chemicals of concern in soils or other media.

This procedure, though it may be used in combination with, does not replace similar methods and equipment used for confined space entry procedures. Use of this procedure as part of confined space entry testing must be discussed with the Corporate Health and Safety Manager and approved prior to such use.

3. EQUIPMENT

- Calibration gas, tubing, and regulators, from manufacturer.
- Photoionization detector equipped with 10.0 eV lamp, or lamp specific for the contaminant to be screened.
- Charger unit and source of 110v power when needed, not in the form of a generator.
- Forms and indelible ink pen
- Disposable chemical-resistant gloves

4. DOCUMENTATION

Record readings in calibration gas equivalents on the on forms provided by the Project Manager or in the field log book. Pertinent data will vary based on the parameter and the form; however, the following data must be recorded; date, job number, project name, sampling location, sample height (if appropriate), sample identification, samplers name, and general observations. Copies of these records will be attached to and filed with the health and safety plan.

Readings will clearly be recorded and labeled as separate from readings made for the purpose of field screening soils for environmental impacts.

5. PERSONAL PROTECTIVE EQUIPMENT

a) Wear and maintain Terracon-approved PPE at project sites and in laboratories as required by project, task, and/or work environment, except when in a PPE-Free Zone. This includes use of the Core PPE Kit.

b) Wear disposable nitrile or other chemical resistant gloves at all times.

c) Don't try to account for unusual or special health and safety situations. Unusual or special health and safety situations should be addressed by the Health and Safety Plan and the Project Manager.

6. PROCEDURES

- On a daily basis, the unit should be gas calibrated to a manufacturer's gas standard and the results recorded in the field logbook every time it is performed. Repeat calibration every 4 hours of operation, and at the end of operation. If the unit does not calibrate, return it to the local Terracon equipment evaluation for evaluation and, if necessary, repair.
- Immediately prior to making a field measurement the unit should be operated for approximately 1-minute remote from activities engaged in sampling or disturbing contaminants. Any background concentrations should be noted or zeroed out relative to test measurements and recorded in the field book.
- Approach the sampling location from the upwind direction.
- Readings will be taken in the breathing zone. Measurements can be taken continuously unattended (i.e., attached to the drill rig or excavator during equipment operations) or on an attended periodic basis specified by the project manager.
- For continuous unattended readings the unit will placed secure from damage or interference from machinery exhausts at an elevation consistent with the breathing zone and in close proximity to workers. The unit will be operated in a mode which will record the maximum reading without having to continuously view the readout. The unit will be operated in alarm mode set at the first response level specified in the project health and safety plan. The maximum will be checked periodically by the operator, but on intervals never exceeding 30 minutes.
- For periodic attended readings the unit will be handheld. The operator will hold the unit probe in the breathing zone, moving slowly through the zone in close proximity to workers without interfering with their activity. The reading will be made for no less than 3 minutes to account for response times of ionizable semi-volatile compounds of concern to account for varied response times.
- Record readings obtained as parts per million (ppm) calibration gas equivalents (i.e., TEI580 calibrated to isobutylene would be expressed as ppmi).

7. TRAINING AND CERTIFICATION

- Completed 40-Hour OSHA 1910.120 HAZWOPER training, inclusive of respiratory protection, and a current certificate of annual 8-Hour OSHA 1910.120 HAZWOPER Refresher Training is required for all personnel handling media contaminated by hazardous substances.

E.1400

Well Development - Parametric

LAST REVIEW: August 2019

GUIDANCE:

- **ASTM D4448-85a** *Standard Guide for Sampling Groundwater Monitoring Wells*.
- U.S. Environmental Protection Agency, Region 4, 2017. *Groundwater Sampling, ID: SESDPROC-301-R4*. April 26.

1. OBJECTIVE AND BACKGROUND

The objective of monitoring well development is to remove adulterated water in the well, sand pack, and surrounding saturated formations which formed during drilling and well installation. Development should be considered the final step in completing a groundwater monitoring well.

Initially, well development should purge any drilling fluids or other foreign materials from the monitoring well. Development should be performed as soon as practical after the well installation, but no sooner than 48 hours after the grouting is complete.

2. EQUIPMENT

Development should be accomplished with the use of a pump, bottom filling bailer, or nitrogen lift device. Measuring equipment should be consistent with that specified by the project Manager or Equipment Manager at mobilization and consistent with TSOP E.1820.

Protective safety equipment will be utilized as specified in the program of assessment and as directed by the Terracon Site Health & Safety Plan consistent with materials and concentrations

3. DOCUMENTATION

- Pertinent data will vary based on the parameter and the form; however, the following data must be recorded - time, date, job number, project name, sampling location, samplers name, sampling methodology, volume purged, parameters to be analyzed, stabilization data, and general observations.

4. PERSONAL PROTECTIVE EQUIPMENT

a) Wear and maintain Terracon-approved PPE at project sites and in laboratories as required by project, task, and/or work environment, except when in a PPE-Free Zone. This includes use of the Core PPE Kit.

b) Wear disposable nitrile or other chemical resistant gloves at all times.

c) Don't try to account for unusual or special health and safety situations. Unusual or special health and safety situations should be addressed by the Health and Safety Plan and the Project Manager.

d) Also note sample container preservatives and cautions (e.g., "Caution: the 40-milliliter vials contain acid").

5. PROCEDURES

- Determine the geometry of the monitoring well (i.e., measure static water level, depth of monitoring well, determine volume of fluid lost while drilling.)
- Determine the volume of one "standing volume" of water in the well, defined as the volume of standing water within the well casing plus the volume within the gravel pack (assuming 30% porosity).
- Sample and record a baseline series of measurements for water in the well casing for;
    - Temperature; degrees Fahrenheit (F)
    - pH; standard units
    - Specific Conductance; micromhos (μmhos)
    - Turbidity; nephelometric turbidity units (NTUs)
- Remove three (3) additional standing volumes from the well, recording a measurement series at the end of each volume.
- If each of the parameters have demonstrated repeatability for three (3) consecutive readings the well will be considered developed comparable to formation water conditions;
    - pH; ± 0.1 standard units
    - Specific Conductance; ± 5%
    - Turbidity; stabilized (± 10%) or < 10 NTUs
- If parameters for each have not stabilized, continue to remove and measure non-stabilized parameters each additional standing volume, up to a total of five times the initial standing well volume. At this point the monitoring well will be considered reasonably comparable in condition to conditions of the surrounding formation water.
- For those wells where the boring was advanced using drilling fluids, remove the volume of water lost during drilling plus the one standing volume prior to taking the baseline measurement series.

If low permeability materials prevent the well from yielding adequate volumes of water, alternative development procedures will be implemented at the request of the Project Manager.

- Store or discharge the development waters consistent with direction of the Project Manager, TSOP E.22230, and as allowed by law.

6. TRAINING AND CERTIFICATION

- Completed 40-Hour OSHA 1910.120 HAZWOPER training, inclusive of respiratory protection, and a current certificate of annual 8-Hour OSHA 1910.120 HAZWOPER Refresher Training is required for all personnel handling media contaminated by hazardous substances.

E.1820

Physical Field Measurement - Groundwater

LAST REVIEW: October 2019

GUIDANCE:

- Equipment manuals specific to unit prescribed by the Equipment Manager or project Manager.
- "Interface Probe User Guide & Manual", ORS Environmental Equipment, 1991.
- ASTM D4750-87 (Reapproved 1993) "Standard Test method for Determining Subsurface Liquid levels in a Borehole or Monitoring Well (Observation Well)".
- U.S. Environmental Protection Agency, 2020. *Groundwater Level and Well Depth Measurement, ID: LSASDPROC-105-R4*. May 15.

1. OBJECTIVE AND BACKGROUND

To obtain accurate and precise groundwater measurements from monitoring points including monitoring wells, piezometers, observation wells and pumping wells. The groundwater levels may represent static water levels, non-static levels undergoing recovery, or pumping water levels based on site-specific conditions. Obtaining groundwater measurements aids in data analyses and interpretation of groundwater flow and contaminant transport.

2. EQUIPMENT

- Monitoring equipment specified by the project manager;
- Decontamination equipment (Alconox detergent, buckets, brushes and water);
- Proper forms as specified by project manager - Take copy of most recent data form to use as a field check for representative values. Make sure you have referenced benchmark elevation for each well.
- Measuring devices: electronic water level indicator or interface probe;
- Steel Tape (100' minimum) marked off in units as described above;
- Fuel and water indicating paste;
- Tool Box; and
- Site Map

3. DOCUMENTATION

- Record all pertinent sampling information on the groundwater measurement form and/or field logbook. Pertinent data will vary based on the parameter and the form; however, the following data must be recorded - time, date, job number, project name, measurement location, measurers name, measuring methodology, and general observations.

4. PERSONAL PROTECTIVE EQUIPMENT

a) Wear and maintain Terracon-approved PPE at project sites and in laboratories as required by project, task, and/or work environment, except when in a PPE-Free Zone. This includes use of the Core PPE Kit.

b) Wear disposable nitrile or other chemical resistant gloves at all times.

c) Don't try to account for unusual or special health and safety situations. Unusual or special health and safety situations should be addressed by the Health and Safety Plan and the Project Manager.

d) Also note sample container preservatives and cautions (e.g., "Caution: the 40-milliliter vials contain acid").

5. PROCEDURES

1. Meet with project manager to discuss project;
2. Select the measuring device based on site specific conditions and regulatory requirements. Note: some state regulatory agencies may not allow the use of plumber's chalk or water detection paste. Familiarize yourself with the measurement equipment. Check equipment conditions prior to mobilization and consider possibility of field break down. Be prepared to use back up equipment.
3. Maintain a similar reference point which should be the top of the riser pipe for the monitoring well itself <u>DO NOT USE THE TOP OF THE PROTECTIVE CASING DUE TO POSSIBLE SEASONAL FROST HEAVE OF THE OUTER CASING(S).</u>
4. Use the marked point on the riser pipe or the highest point on the riser pipe as the specific reference point unless the riser pipe terminus is level. In this case, use the side of the riser pipe terminus which is closest to the lock clasp on the protective casing.
5. Measure the depth to water level by lowering the measuring device down into the well until the water level is encountered. With the electronic devices, an audible or visual signal will be broadcast. This method may be of limited use in steel cased wells.
6. Once contact with the groundwater has been established, observe the measurement on the tape at the reference point to the nearest 0.01 foot. Record this measurement to the nearest 0.01 foot.
7. If collecting a pumping water level from a well which contains a pump, take care to ensure that the tape/probe is not in contact with the pump intake.
8. Collection of water levels from a potable well will require stringent decontamination procedures for organic, inorganic and microbiological concerns. Consult with the project manager for specific procedures.

9. Record the water level and well depth measurements on the water level data sheet. Write legibly and check the form for accuracy and completeness prior to departing the well location.
10. Perform proper decontamination procedures between each well.

6. TRAINING AND CERTIFICATION

- Completed 40-Hour OSHA 1910.120 HAZWOPER training, inclusive of respiratory protection, and a current certificate of annual 8-Hour OSHA 1910.120 HAZWOPER Refresher Training is required for all personnel handling media contaminated by hazardous substances.

E.1830

Physical Field Measurement - Free-Phase Product

LAST REVIEW: October 2019

GUIDANCE:

- Equipment manuals specific to unit prescribed by the Equipment Manager or project Manager.
- "Interface Probe User Guide & Manual", ORS Environmental Equipment, 1991.
- ASTM D4750-87 (Reapproved 1993) "Standard Test method for Determining Subsurface Liquid levels in a Borehole or Monitoring Well (Observation Well)".

1. OBJECTIVE AND BACKGROUND

To accurately and precisely determine the thickness of product floating on the groundwater (assuming it is a density of less than 1.0 – light non-aqueous phase liquid - LNAPL) or at the bottom of the well (assuming density of greater than 1.0 – dense non-aqueous phase liquid - DNAPL). Obtaining free-product phase measurements aids in understanding contaminant source areas, concentrations, and transport.

2. EQUIPMENT

- Monitoring equipment specified by the project manager.
- Decontamination equipment - (scrub buckets with distilled water, Alconox, brushes,clean paper towels and ispopropyl alcohol or other solvent, as required.)
- Proper forms (monitoring well gauging, purging, and sampling data form) and indelible pen.
- Measuring device: Interface Probe.
- Toolbox with the appropriate tools for well access;
- Site Map; and
- Other tools or equipment specific to the project as identified by the project manager

3. DOCUMENTATION

- Record all pertinent sampling information on the groundwater measurement form and/or field logbook. Pertinent data will vary based on the parameter and the form; however, the following data must be recorded - time, date, job number, project name, measurement location, measurers name, measuring methodology, and general observations.

4. PERSONAL PROTECTIVE EQUIPMENT

a) Wear and maintain Terracon-approved PPE at project sites and in laboratories as required by project, task, and/or work environment, except when in a PPE-Free Zone. This includes use of the Core PPE Kit.

b) Wear disposable nitrile or other chemical resistant gloves at all times.

c) Don't try to account for unusual or special health and safety situations. Unusual or special health and safety situations should be addressed by the Health and Safety Plan and the Project Manager.

d) Also note sample container preservatives and cautions (e.g., "Caution: the 40-milliliter vials contain acid").

5. PROCEDURES

PROCEDURE FOR USING INTERFACE PROBE - LNAPL

1. Meet with project manager to discuss the project. Review previous data form(s) to use as a filed check for representative values. Plan the order to collect measurements starting with wells that are least likely to have product and ending with wells that are suspected to have product.
2. Familiarize yourself with the measurement equipment. Performance test of each device prior to leaving the office. Electronic devices such as the interface probe will signal contact with product and groundwater. These instruments should be used based on manufacturer's recommendations. Perform battery test. Thoroughly decontaminate the interface probe prior to leaving the office.
3. Before opening the monitoring wells, take measures to prevent debris from falling into the well. This includes standing water which may be present in a flush-mount well vault.
4. Upon opening wells secured with expansion caps, fluid levels will adjust to atmospheric conditions. In the proper field form, record the condition of the well and if pressure was released from the well or if a vacuum caused air to enter the well upon removing the expansion cap. Take the necessary precautions to avoid injury when loosening the well cap.
5. Turn on the measuring device and test the functionality of the device similar to the steps taken prior to leaving the office.
6. Note the reference mark or surveyed point for each well.

7. Carefully lower the sensor probe out of protective housing and into the well. Avoid sliding the tape over protective pipe casing edge or monitoring well casing as it may scrape or kink conductor edge measuring tape.
8. As probe encounters LNAPL an audible or visual signal will be broadcast. Note the depth to LNAPL from the reference point. Slowly raise the interface probe up and out of the LNAPL. Re-check the measurement to confirm. Report the depth to LNAPL reading to nearest 0.01 feet.
9. For the depth to water measurement (and/or the bottom of the LNAPL), slowly lower the probe through the LNAPL layer until a different (i.e., water level indicator) audible or visual signal is broadcast. Note the depth to water from the reference point. After noting the depth, continue to slowly lower the tape into the water layer and then slowly raise the tape to confirm/replicate the depth to water measurement. It is ideal to report the depth to water reading to the nearest 0.01 feet; however, LNAPL viscosity and equipment sensitivity may make this difficult. ASTM Standard E2856-13 (Standard Guide for Estimation of LNAPL Transmissivity) suggests that the precision of measuring the LNAPL-water interface may be 0.05 feet.
10. Retrieve tape slowly, carefully cleaning the tape and probe as it is withdrawn from the well. (Never store a contaminated probe or tape in the protective housing or carrying case.)
11. Write legibly and check the written measurement data for accuracy and completeness. Record the time of the measurements. Review previous records to evaluate if the observed measurements appear reasonable. If the measurements seem askew, discuss the measurement with the project manager. It is important to understand if the measurement was recorded under equilibrium conditions and to further understand the hydrogeologic conditions of the formation and the estimated mobile LNAPL interval.
12. Close and lock the wells after removing the interface probe and recording the water levels, unless other well tasks will be conducted (such as purging and sampling).

PROCEDURE FOR USING INTERFACE PROBE - DNAPL

1. Meet with project manager to discuss the project. Review previous data form(s) to use as a filed check for representative values. Plan the order to collect measurements starting with wells that are least likely to have product and ending with wells that are suspected to have product.
2. Familiarize yourself with the measurement equipment. Performance test of each device prior to leaving the office. Electronic devices such as the interface probe will signal contact with product and groundwater. These instruments should be used based on manufacturer's recommendations. Perform battery test. Thoroughly decontaminate the interface probe prior to leaving the office.

3. Before opening the monitoring wells, take measures to prevent debris from falling into the well. This includes standing water which may be present in a flush-mount well vault.
4. Upon opening wells secured with expansion caps, fluid levels will adjust to atmospheric conditions. In the proper field form, record the condition of the well and if pressure was released from the well or if a vacuum caused air to enter the well upon removing the expansion cap. Take the necessary precautions to avoid injury when loosening the well cap.
5. Turn on the measuring device and test the functionality of the device similar to the steps taken prior to leaving the office.
6. Note the reference mark or surveyed point for each well.
7. Carefully lower the sensor probe out of protective housing and into the well. Avoid sliding the tape over protective pipe casing edge or monitoring well casing as it may scrape or kink conductor edge measuring tape.
8. An audible or visual signal will be broadcast when the interface probe encounters the water. Note the depth to water from the reference point. Slowly raise the interface probe up and out of the water. Re-check the measurement to confirm. Report the depth to water reading to nearest 0.01 feet.
9. Lower the interface probe through the water layer slowly and stop when the water-DNAPL interface is encountered (this will be signified by a different audible or visual signal). Note the depth to DNAPL from the reference point. After noting the depth, raise the interface probe back up into the water layer and then slowly lower the interface probe to re-check the water-DNAPL interface measurement. Record the confirmed water-DNAPL interface measurement to the nearest 0.01 feet.
10. Retrieve tape slowly, carefully cleaning the tape and probe as it is withdrawn from the well. (Never store a contaminated probe or tape in the protective housing or carrying case.)
11. Write legibly and check the written measurement data for accuracy and completeness. Record the time of the measurements. Review previous records to evaluate if the observed measurements appear reasonable. If the measurements seem askew, discuss the measurement with the project manager.
12. Close and lock the wells after removing the interface probe and recording the water levels, unless other well tasks will be conducted (such as purging and sampling).

6. TRAINING AND CERTIFICATION

- Completed 40-Hour OSHA 1910.120 HAZWOPER training, inclusive of respiratory protection, and a current certificate of annual 8-Hour OSHA 1910.120

E.2000

Groundwater Sampling – Low Flow Pumping

LAST REVIEW: August 2019

GUIDANCE:

- **ASTM D4448-85a** *Standard Guide for Sampling Groundwater Monitoring Wells*.
- U.S. Environmental Protection Agency, Region 4, 2017. *Groundwater Sampling, ID: SESDPROC-301-R4*. April 26.

1. OBJECTIVE

To collect a representative groundwater sample from the sampling point for chemical analysis. This procedure should be used when attempting to minimize stress to the aquifer due to monitoring well sampling. This procedure includes the documentation of sampling methods, supplies and protocol to reduce potential for inaccurate representative samples and or cross-contamination during the sampling event.

2. EQUIPMENT

- Site Map;
- groundwater Elevation Data form;
- laboratory Chain-of-Custody form;
- laboratory sample labels;
- field logbook;
- indelible ink pen;
- pH, temperature, and specific conductance meter;
- turbidity meter;
- sample containers and packing material;
- cooler with ice pack and packing media;
- well purging equipment – disposable bailers and string;
- sampling device – low-flow peristaltic pump;
- mobile, secure shed to protect equipment during sampling (insulated during colder weather);
- graduated container to measure amount of water removed;
- keys for locking cap on well and secure shed;
- deionized (DI) water;
- Drums or other containers if purge water cannot be discharged to the ground surface; and
- PPE.

3. DOCUMENTATION

- Record all pertinent sampling information on the sampling container label, sampling information form, chain-of-custody, and shipping form.
- Pertinent data will vary based on the parameter and the form; however, the following data must be recorded - time, date, job number, project name, sampling location, samplers name, sampling methodology, parameters to be analyzed, stabilization data, and general observations.
- Make appropriate entries in the chain-of-custody form at time of sample collection. Ensure that the chain-of-custody protocol required for the project is maintained

4. PERSONAL PROTECTIVE EQUIPMENT

a) Wear and maintain Terracon-approved PPE at project sites and in laboratories as required by project, task, and/or work environment, except when in a PPE-Free Zone. This includes use of the Core PPE Kit.

b) Wear disposable nitrile or other chemical resistant gloves at all times.

c) Don't try to account for unusual or special health and safety situations. Unusual or special health and safety situations should be addressed by the Health and Safety Plan and the Project Manager.

d) Also note sample container preservatives and cautions (e.g., "Caution: the 40-milliliter vials contain acid").

5. PROCEDURES

Preparation

- Obtain the sample containers, forms, and equipment necessary to complete the sampling event;
- Calibrate all field equipment i.e., temperature, pH, specific conductance meter and turbidity meter in accordance with the manufacturer's guidelines;
- Document equipment calibration in field logbook; and
- Establish sampling sequence.

Monitoring Well Purging and Sampling

1. Don appropriate PPE.
2. Measure the depth to water and total well depth, if not known, to the nearest 0.01 foot. Calculate volume of one "standing volume" of water in the well, defined as

the volume of standing water within the well casing plus the volume within the gravel pack (assuming 30% porosity).

3. Lower the purging device to the screened interval and begin removal/pumping of water. During purging, the water level will be checked, and the purging rate adjusted to maintain a minimal drawdown with a preferred range of less than four inches. Depending on equipment capabilities and groundwater yield, the pump rate will be the lowest possible rate and maintained between 0.1 liter per minute (L/min) and 0.5 L/min.

4. Purging shall continue until field parameter stabilization is acquired as outlined below. If the monitoring wells have a significant amount (i.e. more than 2 feet) of draw-down, the parameters fail to stabilize, or the well purges dry with water levels of less than one foot, an alternative purging method may be pursued as discussed below.

5. When field stabilization is used to determine purge volumes, Water levels and field parameters will be measured and recorded during the groundwater purging. Groundwater samples will not be collected prior to three consecutive field readings generally within the following ranges:

   - pH ± 0.1
   - Temperature ± 1°Celsius (C) or 1.8°Fahrenheit (F)
   - Oxidation/reduction potential (ORP) ± 5% millivolts (mV)
   - Specific conductivity ± 5% milliSiemens per centimeter (mS/cm)
   - Dissolved oxygen (DO) ± 10%
   - Turbidity ± 10%

   The parameters will be monitored by a flow-thru cell. A YSI or equivalent equipment and/or a turbidity meter will be used. Measurements will be taken every 3 to 5 minutes or after removal of each well volume until parameters stabilize (three consecutive measurements) indicating the well is sufficiently purged. The measurements will be recorded on field sample sheets. Additionally, the well drawdown and calculated purge volumes will be recorded on the sheets.

6. If the well has a significant drawdown (i.e., greater than 2 feet), the flow rate will be reduced. If significant drawdown persists, the pump intake will be will be repositioned in the well. In shallow wells (i.e., less than 30 feet deep), the pump intake will be positioned 3 feet from the bottom of the well. In wells greater than 30 feet deep, the pump intake will be positioned about 27 feet below ground surface. If there is an insufficient water column (i.e. less than 2 feet of water over the pump intake), a groundwater sample will be collected without additional purging; this will be documented within the field log and on data summary tables.

   Once the pump intake is adjusted, the wells will be purged at a rate of approximately 100 ml/min using a bladder pump. The bladder pump settings will be set to have a refill rate of 50 seconds and a discharge rate of 10 seconds. Well purging will

continue even if draw-down is greater than 2 feet to achieve stabilized parameters as long as at least 2 feet of water is maintained above the pump intake.

7. Following purging, groundwater samples will be immediately collected directly into laboratory prepared sample container. The sample containers will be filled by allow pumped water to flow gently down the side of the container with minimal disturbance. Do not over-fill sample containers which contain a preservative.
8. Place collected sample immediately in a cooler with ice.

6. TRAINING AND CERTIFICATION

- Completed 40-Hour OSHA 1910.120 HAZWOPER training, inclusive of respiratory protection, and a current certificate of annual 8-Hour OSHA 1910.120 HAZWOPER Refresher Training is required for all personnel handling media contaminated by hazardous substances.

HAZWOPER Refresher Training is required for all personnel handling media contaminated by hazardous substances.

E.2110

Soil Gas Sampling – Boring Implant Method

LAST REVIEW: February 2021

GUIDANCE:

- North Carolina Department of Environmental Quality, Division of Waste Management, 2018. *Vapor Intrusion Guidance, Version 2*. March.
- Terracon Consultants, Inc., 2013. *Soil Gas Investigation Guidance Document, Version 1.0.* August 7.
- U.S. Environmental Protection Agency, Region 4, 2020. *Soil Gas Sampling, ID: LSASDPROC-307-R4*. February 7.

1. OBJECTIVE

The objective of soil gas/vapor sampling is to provide a measurement of the concentration of vapors in the subsurface that may be released by subsurface impacted soil, free product and/or groundwater into pathways that could result in exposures to impacted ambient surface air or air in adjacent structures.

2. BACKGROUND AND REFERENCE

The purpose of this document is to provide guidance and recommended standard practices for conducting soil gas sampling to Terracon personnel. Many states have vapor encroachment, vapor intrusion and/or soil gas sampling guidance documents with specific requirements or recommended procedures for soil gas sampling. State-specific requirements and guidance supersede this guidance document and Terracon personnel should adhere to the most current state-specific guidance when conducting soil gas investigations. If state-specific requirements are less stringent than the procedures recommended in this guidance, it is recommended that the procedures in this guidance be utilized.

For states where specific vapor encroachment, vapor intrusion and/or soil gas sampling regulations or guidance are not in place, Terracon personnel should consult this guidance document and the recommended standard practices herein.

3. EQUIPMENT

- Level D PPE.
- Filter pack sand (No. 2) to surround soil gas implant.
- Granular bentonite to create air-tight seal in soil gas point.

- Distilled water.
- Stainless steel or polyethylene soil gas implant.
- New inert sample tubing [¼-inch outside diameter (OD)] to connect to sampling canister: Teflon, Teflon-lined, Nyalflow or similar. The use of polyethylene tubing commonly used for groundwater sampling or vinyl tubing is discouraged.
- Laboratory-provided vacuum sampling canister with vacuum gauge and flow regulator (e.g., 200 milliliters per minute).
- 1/4-inch Swagelock nut.
- 1/4-inch Ferrule.
- 1/4-inch Spacer nut.
- Moisture filter.
- Fittings/valves (to be used with 1/4-inch OD inert tubing): Stainless steel or plastic ball or 3-way valves, tee connectors and/or couplers. Set up will vary based on user preference and sampling train. Connections between tubing and fittings should be airtight. Fittings and valves should be properly decontaminated between sampling locations. Brass is not recommended, because of the potential for residual cutting oils to be present.
- Graduated syringe, peristaltic pump, or similar for purging.
- Vacuum gauge and pump or hand pump with gauge, <u>if conducting vacuum shut-in testing on sampling train</u>*.
- Shroud, tracer gas (e.g., helium) and portable tracer gas detector, <u>if conducting tracer gas leak testing</u>*.
- Field screening device (PID, FID, etc.).
- Field Notebook/Soil Vapor Field Data Form.
- Chain of Custody.
- Decontamination supplies.

It is recommended that some form of leak detection be used during sub-slab vapor sampling events. The degree of the leak testing will depend on the project objectives. Vacuum shut in testing is used to detect leaks in the connections in the sampling train, while both a water dam and tracer gas leak testing is used to detect potential short circuiting between the sub-slab and ambient air. Therefore, choosing either a water dam or trace gas leak testing rather than conducting both is generally appropriate.

4. DOCUMENTATION

Field Data Form: Sub-Slab Soil Gas Sampling (attached)

5. PERSONAL PROTECTIVE EQUIPMENT

a) Wear and maintain Terracon-approved PPE at project sites and in laboratories as required by project, task, and/or work environment, except when in a PPE-Free Zone. This includes use of the Core PPE Kit.

b) Wear disposable nitrile or other chemical resistant gloves at all times.

c) Don't try to account for unusual or special health and safety situations. Unusual or special health and safety situations should be addressed by the Health and Safety Plan and the Project Manager.

6. PROCEDURES

Implementation

The following section provides basic guidelines and field procedures for conducting soil gas sampling using soil gas implants or post-run tubing (PRT) methods. Soil gas implants generally consist of a sampling point set at a specific depth within a borehole. This sampling point is connected to tubing that leads to a permanent or semi-permanent completion at the surface for collecting the sample.

Procedures

Since 2013, Terracon addresses all soil gas and sub-slab soil vapor sampling through special guidance. Staff should use Terracon's *Soil Gas Investigation Guidance Document (Version 1.0, August 7, 2013)*, or most current version. This document is available on the Environmental Services Terranet webpage.

Procedures for implant installation and soil gas sampling are outlined in *3.0 SOIL GAS SAMPLING PROTOCOL* of the *Guidance Document*.

Quality assurance and quality control procedures should be incorporated into property-specific sampling and analysis plans from *5.0 LEAK DETECTION AND QA/QC* of the *Guidance Document*.

7. TRAINING AND CERTIFICATION

- Completed 40-Hour OSHA 1910.120 HAZWOPER training, inclusive of respiratory protection, and a current certificate of annual 8-Hour OSHA 1910.120

HAZWOPER Refresher Training is required for all personnel handling media contaminated by hazardous substances.

Attachments:

1. Field Data Form: Sub-Slab Soil Gas Sampling
2. Soil Vapor Sampling Guide

Terracon
Consulting Engineers & Scientists

FIELD DATA FORM: SUB-SLAB SOIL GAS SAMPLING

PROJECT NAME: _____ Sample ID : _____

PROJECT NO.: _____ Sample Date : _____

Outside Temperature: _____ °F / °C Indoor Temperature: _____ °F / °C _____

Building Type/Use: _____ Occupant: _____

Description of Room/Sample Area: _____

HVAC Unit Operating? Term Prior to Sampling? _____ (48 hours recommended)

Floor Materials / Covering: _____

Subslab Utilities and Distance from Probe: _____

Potential VOC sources in the vicinity: _____ Distance from probe: _____ ft.

Drill/Corehole Details

Slab Coring/Drilling Equipment Used: _____

Outer Hole Thickness: _____ in. (Typical 1 inch, max recommended 1.5 inches)

Slab Thickness: _____ in. (Drilled as 3/8-inch pilot hole through slab)

Base Material Beneath Slab (circle one): sand gravel clay crushed rock other: _____

Apparent Moisture Content (circle one): dry moist wet (do not sample if saturated)

Gas Probe Details

Sample Tubing Length (in.): _____ Sample Tubing Diameter (in.): _____

Tubing Depth from Top of Slab (in.): _____ (Tubing should 'float' approx. 1/4-inch above hole bottom)

Anchoring Cement Type / Name: _____

Surface Completion / Protection: _____

IF VaporPin™ Used, Circle Type: brass stainless-steel Pressure Reading: _____

Sample Purging

Equlibration time between probe installation and purging: _____ hours / days (24 hours recommended)

Tubing Type: _____ Tubing Length: _____ ft. Tubing Diameter: _____ inch

Purging Method: _____ Pump Rate: _____ ml / min. Purging Duration: _____ min.

Volume Purged: _____ ml (Refer to Table 2 on page 13 of guidance for assistance with calculating volume purged)

PID / FID at Initial Purge: _____ ppm PID / FID at Sample Collection: _____ ppm

Leak Test Prior to Sample Collection? Yes No Method _____

Vacuum Shut-in Test

Pre: Start Time:_____ Vacuum: _____ "Hg Stop Time:_____ Vacuum: _____ "Hg

Post: Start Time:_____ Vacuum: _____ "Hg Stop Time:_____ Vacuum: _____ "Hg

Sample Collection

Sample Container (circle one): 1L 6L Cannister#: _____

Flow Controller (circle one): 100 ml/min 200 ml/min Flow Controller#: _____

Start Time:_____ Vacuum: _____ "Hg Stop Time:_____ Vacuum: _____ "Hg

LEL _____% O2 _____% H2S _____ppm CO_____ppm CO2_____% CH4 _____ppm

Sample Point In-Situ Pressure Reading _____pa

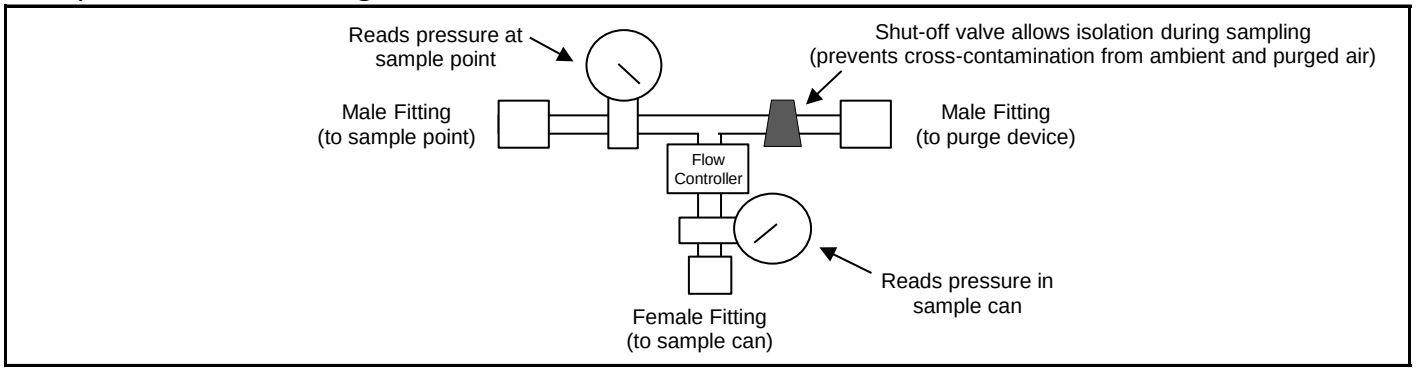
Split Sample? Yes No Describe Split Method: _____

Comments: _____

Form Completed By: _____ Date: _____

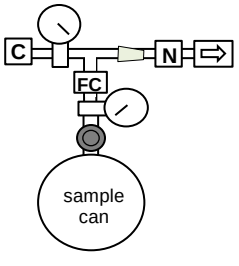
Soil Vapor Sampling Guide

Sample Manifold Configuration

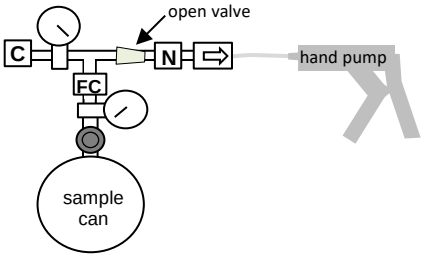


A. Deadhead/Shut-In Test

1. Connect manifold to sample can



2. Make sure fittings and caps are tight, then use hand pump to generate vacuum >15 in Hg. Watch gauges.



Holds vacuum?

yes -> proceed to helium tracer test

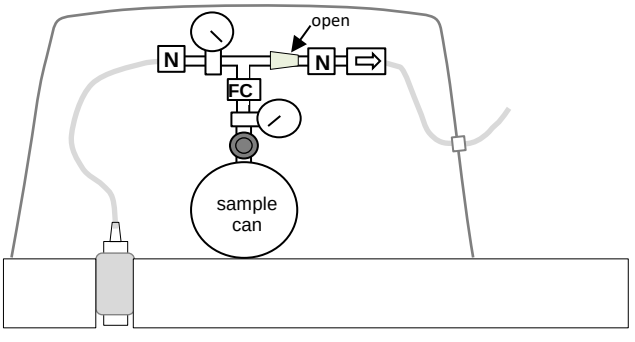
no -> tighten fittings and try again

Legend

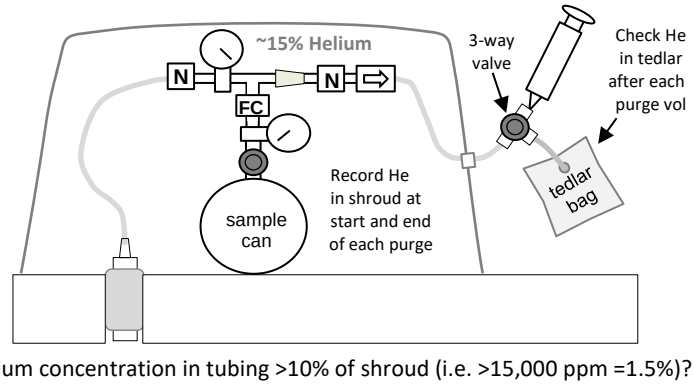
- backflow preventer
- FC flow controller
- C cap
- N nut and ferrule (Swagelok or equivalent)
- summa canister shut-off valve (closed/open)
- sampling train shut-off valve (closed/open)
- pressure gauge

B. Helium Tracer Test

1. Connect to soil vapor point and place shroud over.



2. Enrich shroud with ~15% helium (He). Record He concentration and begin purging with syringe or hand pump
3. Purge a total of three volumes. At end of each volume, purge into tedlar bag. Record He concentration in shroud.
4. Record He concentration in shroud and in tedlar bag.



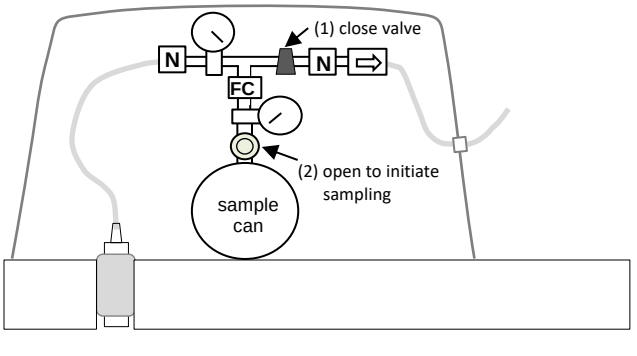
Helium concentration in tubing >10% of shroud (i.e. >15,000 ppm =1.5%)?

no -> proceed to sampling

yes -> leak test failed - tighten connection to sample & try again

C. Sample Collection

1. Close sampling train shut-off valve
2. Open sample can and note time and vacuum at start. Note vacuum at regular intervals -
   Do not let vacuum go to zero
3. Shut off can when vacuum at -5 in Hg.
4. Sampling is complete. Remove and cap sample can. Abandon & patch sampling point (if temporary).



Soil Gas Investigation Guidance Document

Version 1.0

August 7, 2013

Prepared by:

Vapor Encroachment/Intrusion Committee

Offices Nationwide
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terracon.com

Geotechnical ■ Environmental ■ Construction Materials ■ Facilities

Terracon Soil Gas Investigation Guidance

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Appendix B – Post-Run Tubing Method: Equipment/Materials List, Procedures, and Field Data Form

Appendix C – Subslab Soil Gas: Equipment/Materials List, Procedures, and Field Data Form

Appendix D – Available Soil Gas Analytical Methods

Appendix E – References

1.0 INTRODUCTION AND PURPOSE

Vapor encroachment is defined as vapor-phase migration of volatile organic compounds (VOCs) onto a property from underlying contaminated groundwater, soil, non-aqueous phase liquid (NAPL), and/or soil gas. Vapor intrusion is defined as vapor-phase migration of VOCs into occupied buildings from underlying contaminated groundwater, soil, NAPL, and/or soil gas.

Soil gas surveys provide information on the soil atmosphere that can aid in assessing the presence, composition, source, and distribution of contaminants. Soil gas and subslab soil gas data are important components of vapor encroachment and vapor intrusion investigations and are central to the evaluation of the potential for vapor intrusion, as outlined in U.S. EPA guidance and various state guidance documents.

1.1 Purpose and Intent

The purpose of this document is to provide general guidance and recommended standard practices for conducting soil gas sampling to Terracon personnel. Many states have vapor encroachment, vapor intrusion and/or soil gas sampling guidance documents with specific requirements or recommended procedures for soil gas sampling. State-specific requirements and guidance supersede this guidance document and Terracon personnel should adhere to the most current state-specific guidance when conducting soil gas investigations. If state-specific requirements are less stringent than the procedures recommended in this guidance, it is recommended that the procedures in this guidance be utilized.

For states where specific vapor encroachment, vapor intrusion and/or soil gas sampling regulations or guidance are not in place, Terracon personnel should consult this guidance document and the recommended standard practices herein.

1.2 Limitations

Limitations and topics excluded from this guidance are as follows.

- This guidance does not include the collection of indoor air samples for vapor intrusion assessments. If indoor air sample collection is warranted on your project, please contact one of the members of the Vapor Encroachment/Intrusion Committee (refer to Section 1.3) and consult with a Terracon Certified Industrial Hygienist (CIH) that has the requisite indoor air sampling experience.
- An Authorized Project Reviewer (APR) with vapor encroachment and/or vapor intrusion experience must be assigned to and participate in the project from proposal preparation through completion.

- This guidance only includes active soil gas sample collection methods. Passive soil gas sampling methods do not yield truly quantitative results; however, they can be useful as a screening tool or to delineate affected zones. If you are considering the use of passive soil gas methods, please contact one of the members of the Vapor Encroachment/Intrusion Committee.
- As noted above, state-specific requirements and guidance supersede this guidance document.
- This guidance document only covers soil gas investigation and sampling and does not address the evaluation of soil gas sampling data for vapor intrusion evaluations. Due to the various data evaluation approaches currently being utilized in the industry, contact one of the members of the Vapor Encroachment/Intrusion Committee for assistance with data evaluation if there are no specific risk-based levels or criteria established for your state.

This guidance is not intended to be an all-inclusive guide to soil gas sampling, but rather to provide standard guidelines and recommended practices. There are various resources and guidance documents that cover vapor intrusion and soil gas sampling in depth. Refer to Appendix E for a list of useful references.

1.3 Vapor Encroachment/Intrusion Contacts

Questions concerning soil gas investigations, data evaluation, indoor air sampling, vapor intrusion assessments, or vapor mitigation, can be directed to one of the below-listed Terracon employees.

- Mike Hagemeister: Omaha NE, mehagemeister@terracon.com (Investigation and Mitigation)
- Matt Hall: Nashville TN, mbhall@terracon.com (Investigation and Mitigation)
- Michael Hudgins: Columbia SC, pmhudgins@terracon.com (Investigation and Mitigation)
- Scott Kolodziej: Dallas TX, smkolodziej@terracon.com (Investigation and Due Diligence)
- John Sallman: Corporate, jbsallman@terracon.com (Investigation and Due Diligence)
- Craig Eaton: Salt Lake City UT, cdeaton@terracon.com (Investigation and Due Diligence)
- David Wolfgram: White Bear Lake MN, djwolfgram@terracon.com (Investigation)
- Michael Crandall: Tempe AZ, mscrandall@terracon.com (CIH, Indoor Air Sampling)

A list of additional Vapor Encroachment/Intrusion Committee members and vapor encroachment/intrusion guidance resources are available on the SharePoint site on TerraNet (http://sp.terracon.com/ServiceLines/Env_New/VI/Pages/default.aspx).

2.0 SOIL GAS INVESTIGATION SCOPE DEVELOPMENT

2.1 Evaluation of Existing Data and Conceptual Site Model

The preparation of a conceptual site model (CSM) is part of all site investigations and begins in the proposal stage. The purpose of a CSM is to provide a conceptual understanding of the potential for exposure to hazardous contaminants at a site based on the sources of contamination, the release mechanisms, the transport media, the exposure pathways, and the potential receptors. The CSM relates the source of contamination to human and ecological receptors and identifies potential sources of contamination, the potentially contaminated media, and exposure pathways.

The level of detail in the CSM will depend upon the project and client objectives, and the requirements of the APR. In all circumstances, the CSM must contain sufficient detail so that field staff, the project manager, and the APR have a clear understanding of site conditions and how they relate to meeting the project objectives.

The following items should be included in a CSM for the vapor encroachment and/or intrusion pathway. In the early stages of investigation, each of the components listed may not be necessary. These may be added as applicable.

- Primary Sources of Contamination – For each potential contaminant source, describe what potentially caused the contamination and provide a list of chemicals released (either known or suspected) into the environment.
- Primary Release Mechanism – For each potential contaminant source, describe the means by which the release, or suspected release, is thought to have occurred.
- Secondary Sources of Contamination – Include the environmental media potentially contaminated or known to be contaminated by the primary sources, such as surface soil, subsurface soil, and groundwater.
- Contaminant Transport Mechanisms – For each potentially-contaminated medium, describe the transport mechanism (usually advection and diffusion through the vadose zone) for contaminant vapors to enter the property (vapor encroachment) or for contaminant vapors to enter the indoor air (vapor intrusion), and describe the characteristics of the subsurface including the site geology and depth to shallow groundwater. *Also consider whether any preferential contaminant migration pathways, such as sewer or utility lines, are present.*
- Exposure Routes – Describe current buildings, potential future building scenarios, as appropriate, and areas where vapors may accumulate. Discuss each potential preferential contaminant migration pathway associated with the buildings, such as foundation cracks, voids, utility ports, pipes, elevator shafts, sumps, and drain holes.

- Building Effects – For in-depth vapor intrusion investigations, evaluate the effects of the overlying building on vapor intrusion and associated dynamics. This evaluation may include measurements of differential pressures across the floor slab, determination of air exchange rates, and evaluation of temporal effects due to changes in the building HVAC system operation. (Note: This level of evaluation is not expected for limited, presence/absence vapor intrusion investigations conducted during property due diligence.)
- Potential Receptors – List each of the current and potential future receptors, as appropriate, that could potentially contact affected soil gas and/or indoor air.

To document current site conditions, a CSM may be supported by maps, subsurface cross-sections, site diagrams, and any other property/site specific details that may be pertinent. The narrative description should clearly describe known site conditions and state what assumptions were made to generate the CSM. As additional data are collected and analyzed through the evaluation of the vapor encroachment and/or intrusion pathways, the CSM should be updated.

Additional information on the development of a CSM can be found in guidance published by U.S. EPA, Risk Assessment Guidance for Superfund (RAGS, Part A, 1989), Standard Guide for Developing Conceptual Site Models for Contaminated Sites, ASTM E1689 - 95(2008), and/or U.S. EPA Data Quality Objective guidance.

2.2 Preparing a Soil Gas Sampling Plan/Proposal

A soil gas sampling plan/proposal should be site-specific and designed to meet the project objectives. The soil gas sampling plan/proposal should be prepared after evaluation of existing site information and analytical data. Also utilize the CSM to assist in developing a soil gas sampling strategy. The following items should be considered when developing a soil gas sampling plan/proposal:

- Selection of an appropriate Terracon APR
- Objectives of the study.
- Chemicals of concern (COCs) including parent and breakdown products. Note that the list of soil gas COCs should be consistent with the list of COCs analyzed in groundwater and/or soil if the assessment is being conducted as part of an LSI. This is an important consideration because "full VOC scan" lists can include different chemicals depending on the laboratory used, media analyzed, and analytical methods. A target COC list should be developed based on the type of source (e.g., dry cleaner or gas station) and the COCs detected in on-site soils or groundwater.
- Physical site characteristics (*e.g.*, soil type, depth to groundwater, water table fluctuations, building construction, etc.)

- Possible preferential pathways, including subsurface utilities and lithology (e.g., coarse-grained soils, shrink/swell clays with cracks, and fractured bedrock).
- Land use, building characteristics, and potential receptor population.
- Need for vertical profiles to assess potential biodegradation/attenuation.
- Appropriate soil gas probe installation and sampling protocols.
- Number, location and analytical method for soil gas samples to satisfy the project objectives.
- Appropriate QA/QC protocols, such as leak testing, sample duplicates, detection limits and limitations, and equipment blanks based on the project objectives and sensitivity.

Soil gas sampling proposal and work plan templates are available for reference on the vapor intrusion page on SharePoint/TerraNet.

http://sp.terracon.com/ServiceLines/Env_New/VI/Pages/default.aspx

2.3 Selection of Sample Locations

Proper sample locations will vary based on site-specific conditions and project objectives. For this reason, soil gas sampling plans and proposals are to be reviewed by an Authorized Project Reviewer (APR) with vapor encroachment and/or vapor intrusion expertise. For assistance with selecting the proper sampling locations for your site, contact one of the vapor encroachment/intrusion contacts in Section 1.3 of this guidance. General guidelines are presented below.

Buildings Present

For commercial properties with buildings above or in close proximity to impacted soils or groundwater, soil gas samples should be taken under the building (i.e., subslab sampling) due to the potential for vapor accumulation under the foundation and/or lowest level floor slab. Though plans are often not available, the building construction should be evaluated for potential non-uniform distribution of vapor accumulation (e.g., grade beam construction or multiple additions that may affect the distribution of vapors under various parts of the building). Subslab soil gas is also considered to best represent soil gas that has the potential to enter the overlying building and create a vapor intrusion condition, and is less susceptible to seasonal variations. If it is not practical to collect soil gas samples under the building, then the samples should be collected as close to the building as possible, while also taking into account: 1) proximity to the source of contamination; 2) depth of the foundation, lowest level floor slab, or basement; and 3) the areas with the highest potential for elevated soil gas concentrations based on the existing data and CSM.

Vacant Properties

For vacant properties where a building is proposed, soil gas samples should generally be collected within the proposed building footprint at locations that have the highest potential for soil gas impacts based on review of the existing data, the proposed building construction (e.g., slab penetration points, areas where vapors could accumulate, etc.) and the CSM. For vacant properties without a proposed development, soil gas samples should be collected from the locations with the highest potential for soil gas impacts based on review of the existing data and the CSM. Since the effects of the future overlying building on soil vapor COC distribution and dynamics are unknown when evaluating vacant properties, the sample depths should be located near the VOC source to represent reasonable worst-case conditions.

2.4 Selection of Sample Depths

Proper sample depths will vary based on site-specific conditions and project objectives. For this reason, soil gas sampling plans and proposals are to be reviewed by an Authorized Project Reviewer (APR) with vapor encroachment and/or vapor intrusion expertise. For assistance with selecting the proper sampling depths for your site, contact one of the vapor encroachment/intrusion contacts in Section 1.3 of this guidance. General guidelines are presented below.

Shallow Soil Gas Sampling Depth

Shallow soil gas is defined by the EPA OSWER SVIG Guidance as soil gas within 5 feet below grade surface (bgs). It is recommended that shallow soil gas samples be collected from depths ranging from 3 to 5 feet bgs. Collection of exterior shallow soil gas samples at depths less than 3 feet bgs increases the potential for "short-circuiting" with atmospheric air and also increases the potential for spatial and temporal variability (See Section 2.6). If exterior shallow soil gas samples are collected, then the leak detection protocols outlined in Section 5 of this guidance should be followed.

Research has shown that shallow soil gas samples collected along the perimeters of buildings often do not represent the concentrations of VOCs in the sub-slab soil gas due to effects of the overlying building on soil vapor COC distribution. In these cases, exterior soil gas samples collected near the source of subsurface contamination better represented sub-slab VOC concentrations. If exterior soil gas sampling must be conducted in lieu of sub-slab sampling for existing buildings, the sampling depth should be positioned near the source of VOCs.

Note: PID readings collected during soil gas probe advancement can be utilized to select the worst-case depth interval for placement of the sampling tip. If the soil gas probe advancement method does not generate soil cuttings for PID readings, such readings can be collected from a co-located soil boring in the vicinity of the soil gas probe so long as the soil boring is adequately plugged with hydrated bentonite or grout and the proper soil gas probe equilibration time is utilized.

Deep Soil Gas Sampling Depth

Sampling depths for deep soil gas samples (i.e., samples collected at depths greater than 5 feet bgs) will vary based on the project objectives. To obtain worst-case scenarios for soil gas concentrations, these samples should be collected in or proximate to the source(s) of contamination. When underlying groundwater and/or NAPL are the source of vapors, soil gas samples should be collected from immediately above the capillary fringe zone or NAPL.

For sites with existing or proposed basements, the soil gas probe/sampling tip should be advanced to a depth near the source of VOCs.

Additional soil gas samples may be collected throughout the soil profile to assess vapor distribution and possible bioattenuation at the site. As noted above, PID readings from soil cuttings can be utilized to select the worst-case depth interval for placement of the sampling tip(s).

Sub-Slab Soil Gas Samples

Sub-slab soil gas samples should be collected from the gravel or sand bedding material underlying the building slab. This is typically accomplished by drilling the sample port through the slab and into the bedding material, followed by placement of sample tubing that terminates within the slab (refer to Section 4.1).

2.5 Selection of Analytical Methods and Sample Containers

The most common and widely-accepted method for the analysis of VOCs in soil gas is EPA Method TO-15; however, there are various EPA methods and modified EPA methods currently utilized in the industry. The modified methods may offer significant cost savings over EPA Method TO-15. Refer to Appendix D for a table of the available soil gas analytical methods and typical cost ranges. *When selecting analytical methods, ensure that they are compatible with state regulations and guidance.*

When selecting an analytical method, there are two important things to remember:

1) Ensure the analytical method is appropriate for use in the state or jurisdiction in which the work is being conducted; and

2) Have the laboratory provide the method detection limits to ensure that they are sensitive (low) enough to compare the resulting data to the applicable regulatory risk-based screening levels.

The most common options for soil gas sample collection are Tedlar® bags and Summa canisters. Due to limited hold times associated with Tedlar® bags and research showing possible breakthrough and/or absorption of COCs, the use of Tedlar® bags is not recommended for Terracon soil gas investigations.

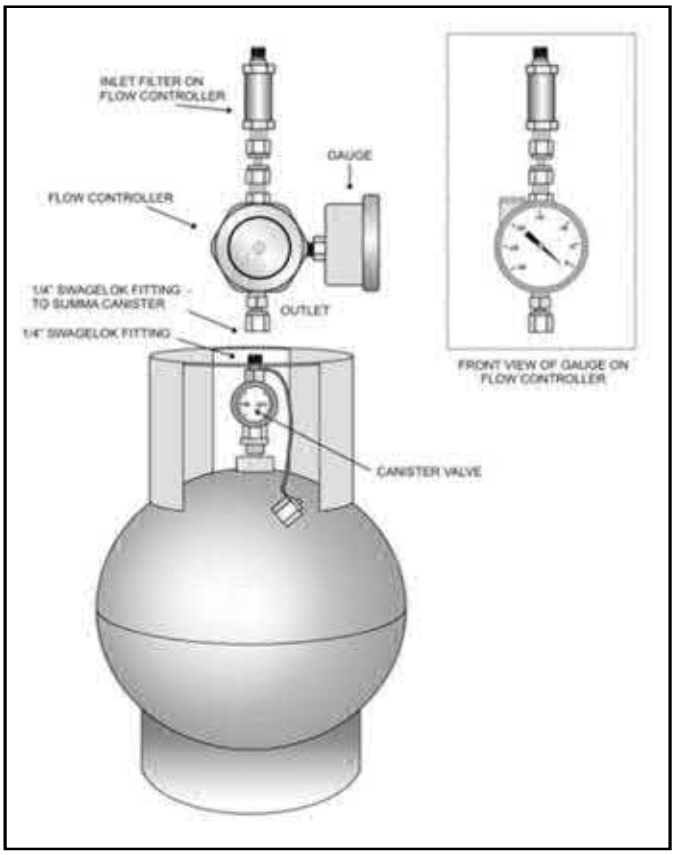

Figure 1: Typical Summa Canister Setup (Source: Ohio EPA, *Sample Collection and Evaluation of Vapor Intrusion to Indoor Air*, May 2010)

Summa canisters are recommended for use on Terracon soil gas investigations. Summa canisters are available in various sizes, with the most common sizes for soil gas sample collection being 6 liters (L) or 1 L. In many cases, 1-L Summa canisters are sufficient for the laboratory to obtain the desired detection limits for soil gas analysis. These smaller canisters are easier to use in the field and easier to package and ship. Refer to Figure 1 for a diagram of a Summa canister and associated flow regulator.

Summa canisters should always be provided by the laboratory and should at least be batch-certified as clean by the lab. The typical frequency for laboratory batch-certification of Summa canisters is one confirmatory analysis per 10 canisters. If a higher level of confidence is required based on the project objectives or sensitivity, contact the analytical laboratory about obtaining individually-certified clean Summa canisters.

When utilizing Summa canisters for sample collection, it is important that the canister vacuum be recorded: 1) immediately upon opening the canister and beginning sample collection; 2) at the end of sample collection; and 3) after receipt by the analytical laboratory. If the initial vacuum reading after opening a Summa canister does not indicate the canister is under full vacuum (typically 30 inches Hg of vacuum), do not utilize the container for sample collection. It is possible that vacuum was partially lost during shipment and that ambient air may have been introduced into the sample container. This is not an uncommon occurrence; therefore, it is suggested that at least one extra (i.e., back-up) Summa canister be ordered for a given sampling event. Options to handle this are further discussed in Section 3.3 of this guidance.

2.6 Consideration of Environmental Factors and Temporal Variability

Three common environmental factors can influence the results of a soil gas survey and should be considered when conducting a project. Following is a brief discussion of each:

- Temperature can have an effect on soil gas concentrations since both vapor pressure and water solubility are temperature dependent. However, temperature variations decrease with depth in the soil column and are unlikely to have a large influence on concentrations at five feet below grade or greater. In areas with large seasonal temperature variations, the most conservative values will be those collected in the summer months.
- Barometric Pressure can lead to a pressure gradient between the soil vapor and the atmosphere, resulting in the movement of soil vapors out of the vadose zone during barometric lows and the movement of atmospheric air into the vadose zone during barometric highs. The potential affects decrease with sampling depth.
- Precipitation and resulting infiltration can potentially impact soil vapor concentrations by displacing the soil vapor, diluting VOC concentrations locally, and/or creating a cap above the soil vapor. However, soil gas samples collected at depths of greater than three feet are unlikely to be significantly affected. *As a conservative measure, it is recommended to wait at least 48 hours after a significant rainfall (>1 inch) before proceeding with soil gas sampling.* The wait time prior to sampling will vary based on the soil type and associated soil drainage curves (refer to Appendix G of the California EPA *Advisory – Active Soil Gas Investigations*, dated April 2012). It is also recommended that irrigation, if applicable, be stopped at least 5 days prior to soil gas sampling.

The above environmental factors and other factors often contribute to seasonal or temporal variability in soil gas concentrations in the vadose zone. These variations are generally reduced when collecting soil gas samples from beneath existing impermeable surfaces such as garage floors, patios, parking lots, or roads, etc.

It is understood that project schedules for Terracon soil gas investigations conducted as part of due diligence may not allow for multiple sampling events to evaluate temporal variation. In these cases, the resulting data should be evaluated and qualified in the report with the understanding that fluctuations in concentrations could occur.

When the project schedule allows or when a more thorough evaluation of soil gas is warranted based on project objectives or sensitivity, two or more rounds (quarterly or semi-annual) of soil gas data should be collected. This will allow evaluation of temporal and seasonal variations at the site and other site-specific factors which may influence the migration of vapors. The maximum concentrations detected should be used to evaluate risk.

2.7 Evaluating Preferential Migration Pathways

Preferential pathways for vapor migration in the subsurface can be either natural or anthropogenic. Examples of preferential pathways include but are not limited to fractures, macropores, coarse-grained soils, gravel base for utility conduits, and subsurface drains.

A survey should be conducted to evaluate potential preferential vapor migration pathways. Underground utility lines can be important preferential migration pathways for vapors and can allow contaminants to migrate significant distances from source areas. The survey should evaluate underground utilities such as water, sewer, gas, electric, and telecommunication lines. Sources of information for the preferential pathway survey may include: site walkovers, geo-databases, construction blueprints, utility maps, Sanborn maps, historical aerial photos, interviews, utility companies, regulatory files, etc. Fill material and sand lenses or macropores in clay materials may also act as preferential pathways. Soil gas sampling locations should be scoped to assess possible preferential migration pathways.

3.0 SOIL GAS SAMPLING PROTOCOL

The following section provides basic guidelines and field procedures for conducting soil gas sampling using soil gas implants or post-run tubing (PRT) methods.

3.1 Soil Gas Implant Installation

Soil gas implants generally consist of a sampling point (stainless-steel, ceramic, or plastic) set at a specific depth within a borehole. This sampling point is connected to tubing that leads to a permanent or semi-permanent completion at the surface. The zone surrounding the sampling point is filled with sand and the remainder of the borehole is filled with hydrated bentonite with the option of grout for the surface completion. Refer to Figure 2 for a general schematic of a permanent soil gas implant. A field equipment/materials checklist, list of procedures, and field data form for this process are included in Appendix A. When installing soil gas implants in clayey soils, consider the potential for borehole smearing and utilize techniques to minimize or mitigate smearing. Contact a Vapor APR or Investigation/RBCA PRG member for advice on such techniques.

General installation procedures are as follows:

1) Advance the borehole to the desired depth using a selected standard drilling method (e.g., hand auger, direct-push, solid flight auger, or hollow stem auger);

2) Connect the sampling point to the sample tubing and lower the point to the desired sample depth;

3) Backfill the zone surrounding the sampling point (recommended 1 to 2 foot interval) with 20/40 grade silica sand;

4) Place at least 6 inches of dry, granular bentonite above the sand pack to prevent hydrated bentonite from infiltrating the sand pack;

5) Backfill the borehole with hydrated bentonite or bentonite grout (at least from near grade surface to 2-3 feet bgs recommended);

6) Construct a semi-permanent or permanent surface completion in accordance with state regulations for monitoring wells and sampling points and connect a shut-off valve to the end of the tubing; and

7) Collect soil gas samples in accordance with Section 3.3 of this guidance.

As depicted in Figure 2 (Page 13), soil gas implants can be installed at different depths within the same borehole to evaluate soil gas concentrations across the soil profile so long as hydrated bentonite seals are placed between the sanded intervals containing the sampling points. Consult with a member of the Vapor Encroachment/Intrusion Committee when using nested soil gas points/implants with multiple sampling depths.

Soil gas sampling points may also be installed using direct-push sampling equipment with expendable points and specialized tooling designed to deliver sampling points to the desired depth. Various subcontract and in-house drillers now have this tooling and are experienced with soil gas sampling point installation.

<u>Method Pros:</u>

- Can install nested points;
- Permanent or semi-permanent points allow for collection of additional samples for evaluation of temporal or seasonal variation;
- Can be done using hand auger equipment;
- Materials are relatively inexpensive; and
- Compatible with leak detection procedures (helium shroud and vacuum shut-in, see Section 5).

<u>Method Cons:</u>

- Requires longer equilibration time (48 hours is recommended) versus PRT method (2 hours recommended if project schedule allows, minimum wait time of 15 minutes); and
- IDW generated.

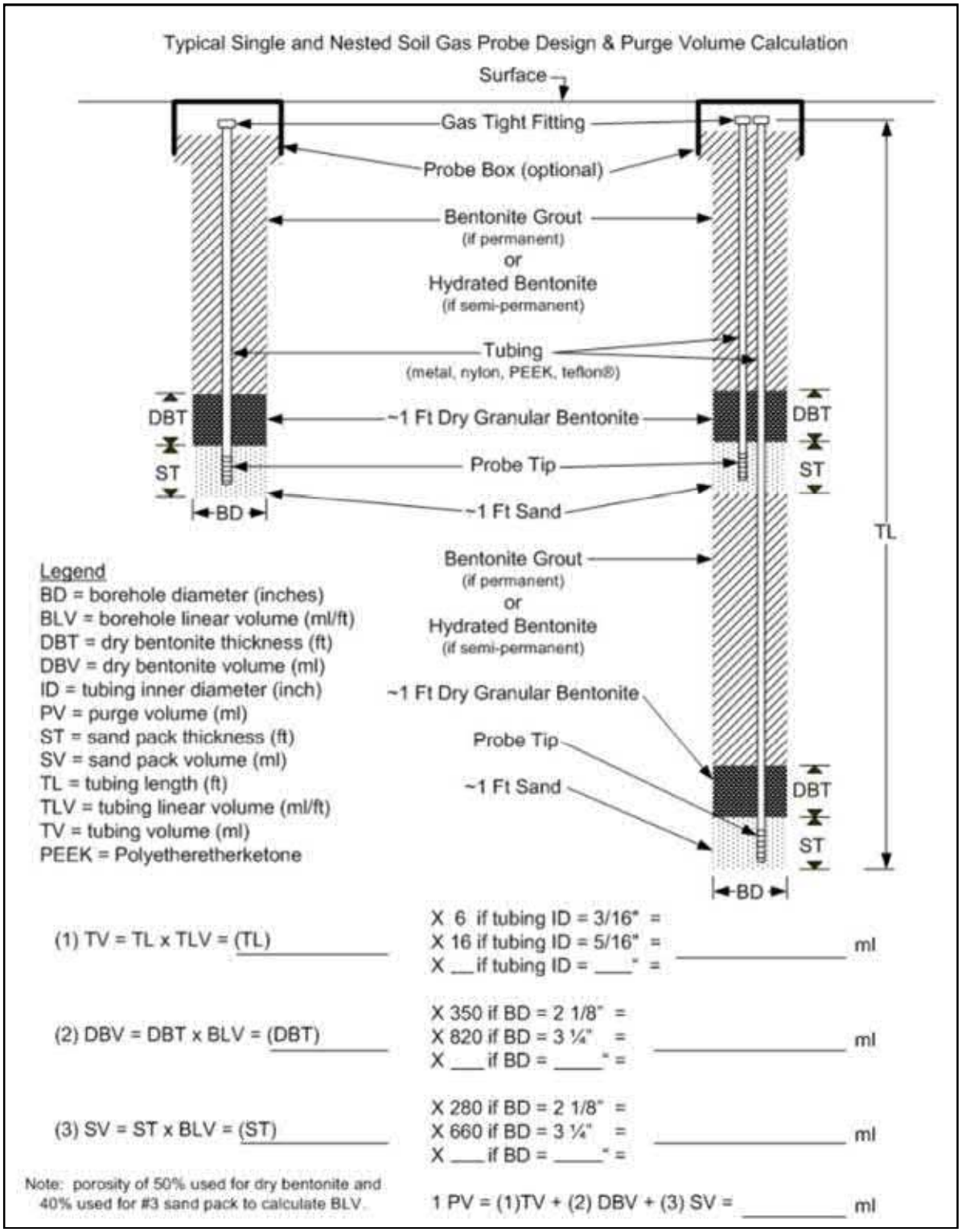

Figure 2: Typical Soil Gas Implant/Well Schematic (Source: Cal EPA, *Advisory - Active Soil Gas Investigations*, April 2012)

If the project schedule does not allow the recommended 48 hours for probe equilibration, an alternative approach is to develop the soil gas probe by purging a minimum of three dead volumes of the probe, including the sand pack and dry granular bentonite layer, and the associated sampling train (refer to Section 3.3 for details on purging and dead volumes).

3.2 Post-Run Tubing (PRT) Method

The PRT method allows for collection of soil gas samples from temporary sampling points installed using direct-push tooling while the tooling remains in the ground. Various subcontract and in-house drillers now have this tooling and are generally experienced with the PRT sampling method. A field equipment/materials checklist, list of procedures, and field data form for this process are included in Appendix B.

General installation procedures are as follows:

1) Install O-rings on the PRT expendable point holder and the PRT adapter;

2) Drive the PRT rod configuration into the ground, connecting probe rods as necessary to reach the desired depth. After desired depth has been achieved, disengage the expendable drive point;

3) Retract the rods approximately 4 to 6 inches up to create a void from which to sample the soil gas;

4) Insert the PRT adapter end of the tubing down the inside diameter of the probe rods. Feed the tubing down the rod bore until it hits bottom on the expendable point holder. Allow approximately 4 to 6 ft. of tubing to extend out of the top of the probe rods before cutting it;

5) Grasp the excess tubing end and apply some downward pressure while turning it in a counter-clockwise motion to engage the adapter threads with the expendable point holder. Continue turning until the PRT adapter O-ring bottoms out in the expendable point holder;

6) Pull up lightly on the tubing to test the engagement of the threads. Failure of the PRT adapter to thread could mean that intrusion of soil may have occurred during driving of the rods or disengagement of the expendable drive point;

7) Apply a hydrated bentonite or grout seal at the surface around the probe rod where it enters the ground;

8) Connect the end of the tubing to the sampling train and collect soil gas samples as outlined in Section 3.3 of this guidance; and

9) After sample collection, remove the direct-push drive rods and plug the borehole in accordance with applicable regulations.

It should be noted that select drillers have modified setups that allow attachment of the tubing to the terminal drive rod prior to advancement. This method is preferred if available in your area.

Method Pros:

- Relatively quick procedure, generally limited by time for actual sample collection;
- Less equilibration time required (2 hours recommended if project schedule allows, minimum wait time of 15 minutes) versus permanent soil gas implants (48 hours recommended);
- No return trips to site required for sampling or borehole plugging; and
- No soil IDW generated.

Method Cons:

- Not easily compatible with tracer-based leak detection (e.g., helium-filled shroud);
- Does not allow for return trips for re-sampling or multiple sampling events to evaluate temporal or seasonal variation;
- Does not allow for multiple sampling depths from same borehole;
- Engagement of tubing and associated PRT fitting down-hole inside the drive rods by twisting tubing to engage threads and O-rings is cumbersome, and proper evaluation of an air-tight O-ring seal is not possible; and
- Various method deficiencies are documented in the April 2012 California EPA Active Soil Gas Investigations Advisory, including incompatibility with leak testing and concerns over a proper air-tight seal of the PRT fitting.

Although the PRT method is widely-utilized in the industry, select jurisdictions (namely California) have concerns over its use. If your project includes leak detection testing or is a sensitive project requiring a high level of confidence and QA/QC, the installation of a permanent or semi-permanent soil gas sampling point with soil gas implants is recommended.

3.3 Sample Collection and Handling

The following section discusses the recommended soil gas sample collection procedures for both soil gas implants and PRT-method points. State-specific sampling requirements supersede this sampling guidance and should be utilized when applicable.

Step 1: Setting up the Sampling Train

Sampling trains can be setup in various ways but generally include the following items:

- Sample tubing (Teflon®, Teflon®-lined, PEEK, or Nylaflow® are recommended);
- Ball valves, fittings, and T-connectors;
- Purge pump (e.g., air sampling pump or peristaltic pump);
- PID to measure total VOCs; and
- Summa canister with dedicated low-flow (<200 ml/min) regulator.

The exact setup is up to the user, but it should utilize one or more of the recommended tubing options mentioned above and the tubing and fitting connections should be air-tight. The tubing and fittings utilized should also be dedicated and not re-used from one sample location to the other. If brass or machined fittings or valves are utilized, be aware that residual cutting oils from the manufacturing of these items may provide a source of cross contamination. If such fittings or valves are utilized, they should be properly decontaminated prior to use and a field/materials blank should be collected as discussed in Section 5.4 of this guidance.

T-connectors and ball valves are commonly utilized to allow access to the purge pump and/or PID meter during sample purging. These valves are then closed to isolate these instruments from the sampling train before opening the Summa canister and collecting the sample.

The use of polyethylene tubing commonly used for low-flow groundwater sample collection or vinyl tubing is discouraged because research shows this tubing can absorb and release COCs, leading to possible sample bias and/or cross-contamination.

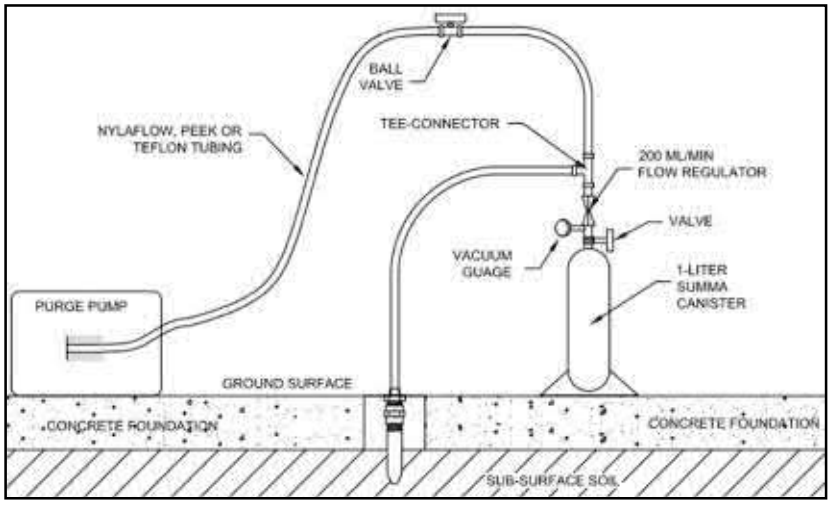

Figure 3: Example Sampling Train and Subslab Probe

Step 2: Sample Purging

Prior to sample collection, the soil gas sampling point and sampling train should be purged to remove "dead air" and ensure a representative soil gas sample is collected. This purging can be done with a standard air sampling pump, peristaltic pump, or PID meter. The purging should be conducted at a low-flow rate (<200 ml/min) and the vacuum applied should not exceed 100 inches of water. As a general rule of thumb, three sample train or system volumes (i.e., dead volumes) should be purged prior to sample collection. The dead volume equals the aggregate volume of all tubing, fittings, ports, and sanded and dry granular bentonite subsurface zones surrounding soil gas implants at a given location. If utilizing a PID to purge, check the flow rate of the model to ensure that it is <200ml/min or utilize a flow regulator to adjust to a low-flow rate.

For sensitive sites or where a higher degree of certainty is desired it is recommended to conduct a purge test (until vacuum, flow rate, and PID readings stabilize) on a representative sampling point in order to determine the optimal purge volume for the location. Purge tests should be conducted for each general soil type at the site. The resulting purge volume should then be applied consistently for all samples collected from the respective soil type in the study area. During the purge test, the vacuum and flow rate should be limited as noted above. This should limit the potential for ambient air being drawn into the sample from the ground surface and it should limit desorbing of vapors from contaminated soils.

Care should be taken to only purge the amount of soil gas necessary to appropriately remove the dead volume and obtain a representative sample when exterior shallow soil gas samples are being collected. Large purge volumes could result in atmospheric air being drawn into the vadose zone and diluting the soil gas sample.

Low permeability soils can pose challenges due to the restriction of adequate soil gas flow during purging and sample collection. Measures to aid in sample collection for low permeability soils can include reducing flow rates for sample collection, increasing sample collection times, and/or increasing the size of the sand pack surrounding the sampling tip. Refer to Appendix D of the California EPA *Advisory – Active Soil Gas Investigations*, dated April 2012, for alternative methods for low permeability soils.

Step 3: Sample Collection

After purging of three system/sampling train dead volumes or the optimal purge volume derived from the purge test, the valves leading to the pump and/or PID should be closed and the pump or PID turned off. After this, sample collection is simply initiated by opening the Summa canister already connected to the sampling train that is filled with representative soil gas. The Summa canister should be equipped with a laboratory-supplied, dedicated flow regulator set to a flow of <200 ml/min.

It is important that the canister vacuum is recorded: 1) immediately upon opening the canister and initiating sample collection; 2) at the end of sample collection prior to closing the canister; and 3) by the laboratory upon receipt of the sample at the laboratory and prior to sample analysis.

Sample collection is complete when the vacuum on the summa canister reaches near zero. It is preferred to leave some vacuum (e.g., 2 to 3 inches Hg or other as indicated by laboratory) in the Summa canister after sample collection so that a comparison with the vacuum measured prior to analysis at the laboratory can identify possible canister leaks during sample shipment. Then, the Summa canister valve should be closed prior to disassembling the sample train. If the site geology and/or time allowed for the investigation does not allow for complete filling of the Summa canister (i.e., vacuum reading near zero), contact the laboratory and report the observed vacuum reading prior to closing the Summa canister to see if they will have sufficient volume to reach the desired reporting limits to compare to applicable standards or screening values. If the reporting limits will not meet the needs of the project, consult the laboratory and APR for options on evaluating the resulting qualified data. Recording the sampling duration time is also useful in that it can be evaluated against the regulator flow rate to approximate the sample volume collected.

As previously mentioned, Summa canisters not exhibiting full vacuum when they are first opened should not be utilized since ambient air may have entered the canister during shipment. Differences in canister vacuum can also result from the shipping of canisters between locations with different elevations. If you have questions or concerns about the initial vacuum in your summa canister, contact the laboratory to discuss the vacuum that was recorded at the lab prior to canister shipment and to evaluate any discrepancies in vacuum.

The use of Tedlar® bags for soil gas sample collection is discouraged due to limited hold times and research showing the loss via breakthrough and/or absorption of COCs.

Step 4: Sample Packaging/Shipment

Soil gas samples are shipped back to the laboratory in closed Summa canisters in the originally-supplied box and packaging along with a properly-completed chain-of-custody. Soil gas samples should not be chilled or shipped in a cooler. Although sample collection in Tedlar® bags is discouraged by this guidance, if Tedlar® bags are utilized, they should be stored and shipped in a manner avoiding contact with direct sunlight.

<u>Data Collection</u>

There are various data that need to be recorded during soil gas sample collection. Refer to the field data forms in Appendices A through C for templates outlining the various data and parameters that should be collected in connection with the investigation methods discussed in this guidance.

A useful tool in the field during soil gas sample collection is a portable methane gas meter capable of measuring percent concentrations of methane, oxygen, and carbon dioxide. Readings of these parameters from a soil gas sampling point during purging can provide useful information regarding: 1) stabilization during a purge test; 2) subsurface oxygen concentrations and the potential for bioattenuation in the subsurface; and 3) whether methane is present in the subsurface at concentrations of potential concern (methane lower explosive limit equals 5% by volume).

4.0 SUBSLAB SOIL GAS SAMPLING PROTOCOL

Subslab soil gas data from samples collected under the building slab and within the advective envelope of the building-driven pressurization or depressurization indicates whether contaminants have accumulated directly under the building. This is the preferred method for soil gas evaluation for sites with existing buildings with foundations above the water table. Analytical detection limits should be low enough to effectively evaluate the indoor air risk using the industry-accepted, conservative default attenuation factor of 0.1 for subslab soil gas to indoor air (i.e., 10% of the subslab contaminant vapors assumed to enter the building via cracks or penetrations)

Subslab soil gas sampling may shorten the time needed to evaluate the vapor intrusion exposure pathway and may help reduce the overall cost of a vapor intrusion evaluation. When proceeding directly to subslab soil gas sampling, characterization of the subsurface soil gas around the building, determination of the physical character of the vadose zone, and site-specific vapor intrusion modeling may not be needed. However, the collection of subslab soil gas samples can be inconvenient to building occupants since it requires the removal of floor coverings and coring or drilling of the building slab.

<u>Important items to note:</u>

- During subslab soil gas sampling, be careful not to damage the integrity of the slab. Subslab utilities, post-tension cables, and other slab features such as radiant-heat systems should be located prior to selecting sampling locations. Blueprints and ground-penetrating radar (GPR) or x-ray studies can assist in locating these features.
- Since penetrating the slab creates a preferential pathway, proper sealing of the sampling port after sample collection is essential to avoid leaks.
- Subslab soil gas sampling should be avoided in areas where groundwater might intersect the slab.

The number, type (time-integrated or grab samples), and locations of subslab soil gas samples should be determined based on information collected during the building survey, an understanding of the building foundation, and the results from nearby soil gas sampling, if available. Sample locations should be selected taking source areas, maximum groundwater concentrations, areas with the highest likelihood of impact, and preferential pathways into account. Subslab samples collected near building edges can

show higher variability and may not represent the composition of soil gas under the interior of the slab. For this reason, it is recommended to locate subslab soil gas sampling locations away from building edges when possible and to have at least some of the samples collected from the center of the building footprint.

For foundations up to 5,000 square feet, at least three subslab soil gas samples should be collected taking into account the nearest source area and possible preferential migration pathways. The sampling frequency benchmark for buildings greater than 5,000 square feet in area is one subslab soil gas sample per additional 2,000 square feet of building area for building up to 15,000 square feet in area. If a lesser frequency of subslab soil gas samples for buildings less than 15,000 square feet is warranted based on client objectives, client budget, project objectives, or site access, contact one of the vapor intrusion contacts listed in Section 1.3 for assistance with determining the adequate number of samples and their optimal locations.

For foundations greater than 15,000 square feet, the adequate number of samples should be determined on a site-specific basis taking source areas, maximum groundwater concentrations, areas with the highest likelihood of impact, and preferential pathways into account.. Involve one of the vapor intrusion contacts listed in Section 1.3 for assistance with determining adequate sample numbers and locations.

4.1 Subslab Soil Gas Sampling Probe Installation

First, ensure that the appropriate subsurface utility locates have been conducted and that private on-site utilities within the building have been located. Also review building plans and correspond with property management to ensure that post-tension cables and other foundation features such as radiant-heat systems, if present, will not be damaged.

A field equipment/materials checklist, list of procedures, and field data form for this process are included in Appendix C.

4.1.1 Subslab Soil Gas Sampling Using Vapor Pin

Cox-Colvin & Associates, Inc.'s Vapor Pin™ technology (http://www.coxcolvin.com/VaporPin.php) are pre-assembled sub-slab probes offered in stainless-steel and brass (Figure 4), and include silicon sleeves that create a seal between the probe and the hole drilled in the concrete. They are easier to install and extract than conventional sub-slab probes and eliminate the need for grouting. Product details, installation procedures, and an installation video are located on the above-listed website. If Vapor Pins™ are utilized, leak detection using a tracer gas is recommended. Utilize the following protocol as a guide for subslab soil gas sampling installation using Vapor Pins™.

A copy of Cox-Colvin & Associates, Inc.'s Standard Operating Procedure for Installation and Extraction of the Vapor Pin is included in Appendix C.

Installation Procedure:

1) Check for buried obstacles (pipes, electrical lines, etc.) prior to proceeding.

2) Set up wet/dry vacuum to collect drill cuttings.

3) If a flush mount installation is required, drill a 1½-inch diameter hole at least 1¾-inches into the slab.

4) Drill a 5/8-inch diameter hole through the slab and approximately 1-inch into the underlying soil to form a void.

5) Remove the drill bit, brush the hole with the bottle brush, and remove the loose cuttings with the vacuum.

6) Place the lower end of Vapor Pin™ assembly into the drilled hole. Place the small hole located in the handle of the extraction/installation tool over the Vapor Pin™ to protect the barb fitting and cap, and tap the Vapor Pin™ into place using a dead blow hammer (Figure 5). Make sure the extraction/installation tool is aligned parallel to the Vapor Pin™ to avoid damaging the barb fitting.

   For flush mount installations (Figure 6), unscrew the threaded coupling from the installation/extraction handle and use the hole in the end of the tool to assist with the installation.

7) During installation, the silicone sleeve will form a slight bulge between the slab and the Vapor Pin™ shoulder. Place the protective cap on Vapor Pin™ to prevent vapor loss prior to sampling (Figure 7).

8) For flush mount installations, cover the Vapor Pin™ with a flush mount cover.

Figure 4: Assembled Vapor Pin™

Figure 5: Installing the Vapor Pin™

Figure 6: Flush-Mount Installation

Figure 7: Installed Vapor Pin™

9) Allow 20 minutes or more (consult applicable guidance for your situation) for the sub-slab soil-gas conditions to equilibrate prior to sampling.

10) Remove protective cap and connect sample tubing to the barb fitting of the Vapor Pin™ (Figure 8).

11) Conduct leak tests (e.g., real-time monitoring of oxygen levels on extracted sub-slab soil gas, placement of a water dam around the Vapor Pin™ (Figure 9), or tracer gas leak testing within a shroud). Consult your local guidance for appropriate tests.

12) Collect sub-slab soil gas sample. When finished sampling, replace the protective cap and flush mount cover until the next sampling event. If the sampling is complete, extract the Vapor Pin™.

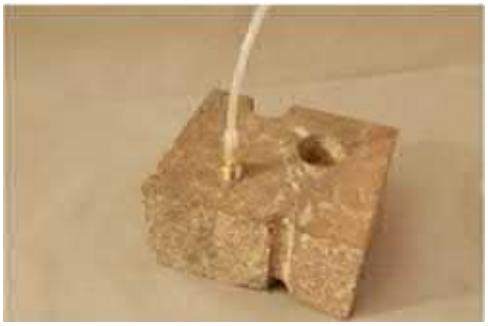

Figure 8: Vapor Pin™ Sample Connection

Figure 9: Water Dam Used for Leak Detection

Extraction Procedure:

1) Remove the protective cap, and thread the installation/extraction tool onto the barrel of the Vapor Pin™ (Figure 10). Continue turning the tool to assist in extraction, then pull the Vapor Pin™ from the hole (Figure 11).

2) Fill the void with hydraulic cement and smooth with the trowel or putty knife.

3) Prior to reuse, remove the silicone sleeve and discard. Decontaminate the Vapor Pin™ in a hot water and Alconox® wash, then heat in an oven to a temperature of 130º C.

Figure 10: Removing the Vapor Pin™

Figure 11: Extracted Vapor Pin™

The Vapor Pin™ to designed be used repeatedly; however, replacement parts and supplies will be required periodically. These parts are available on-line at www.CoxColvin.com. If Vapor Pins™ are re-used, it is recommended that the silicon seals be replaced prior to re-use.

4.1.2 Subslab Soil Gas Sampling Using Conventional Ports

Utilize the following protocol as a guide for subslab soil gas sampling port installation.

1) Drill a ⅜"-diameter pilot hole approximately 2 inches in depth.

2) Using the ⅜" pilot hole as your center, drill a 1"-diameter outer hole to a depth of approximately 1 ⅜". Vacuum any cuttings out of the hole.

3) Continue drilling the ⅜" inner or pilot hole through the slab and a few inches into the subslab material. While drilling, carefully vacuum out any cuttings from the outer hole.

4) Determine the length of stainless-steel tubing required to reach from the bottom of the outer hole, through the slab and into the open cavity below the slab. To avoid obstruction of the probe tube, ensure that it does not contact the subslab material. Using a tube cutter, cut the tubing to the desired length.

5) Attach a measured length (typically 3"-4") of ¼" OD stainless tubing to the female connector with a Swagelok® nut. Make sure that the tubing rests firmly in the fitting body and that the nut is finger tight. While holding the fitting body firmly, tighten the nut 1¼ turns.

6) Insert the ¼" hex socket plug into the female connector. If using a stainless steel socket plug, wrap one layer of Teflon® thread tape around the threads to prevent binding. If using a brass socket plug, no Teflon® tape is needed. Tighten the plug slightly. Do not over tighten. If excessive force is required to remove the plug during the sample set up phase, the probe may break loose from the anchoring cement.

7) Place the completed probe into the outer hole to check fit and to ensure that stainless steel tubing is not in contact with the subslab material. Make necessary adjustments to the hole or probe assembly.

8) In a disposable cup or other container, mix a small amount of the anchoring cement or grout. Add water sparingly to create a mixture that is fairly stiff and moldable. Place a spoonful or two of the cement/grout around the stainless steel tubing adjacent to the female connector nut. Mold the cement/grout into a mass around the connector nut and up around the main body of the probe assembly. Slide the Teflon® washer onto the stainless steel tube so that it rests next to the cement/grout mixture. The washer will prevent any anchoring cement/grout from flowing into the inner hole during the final step of probe installation.

9) Carefully place the probe assembly into the drilled hole, applying light pressure to seat the assembly. While inserting the probe assembly, work the concrete/grout mixture to fill voids. Clean up cement/grout that discharged out of the hole during placement; avoid getting any of the

concrete/grout into fittings or on fitting threads. Allow the cement/grout to cure according to manufacturer's instructions before sampling.

The bottom end of the stainless steel tubing should terminate within the slab (i.e., "float" within slab) and shall not extend into the subslab material. Refer to Figure 12 for a general schematic of a subslab soil gas sampling probe.

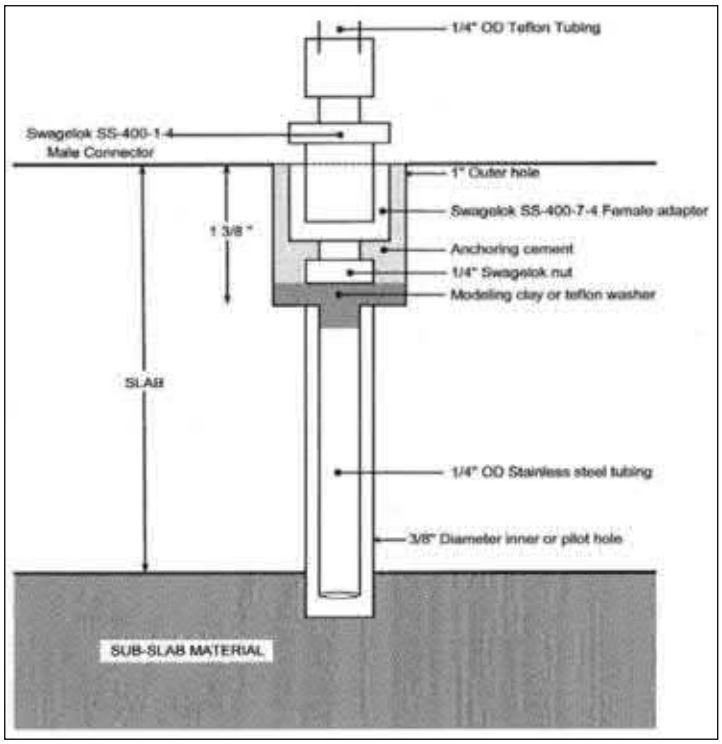

Figure 12: Subslab Sampling Probe (Source: Ohio EPA, *Sample Collection and Evaluation of Vapor Intusion to Indoor Air*, May 2010)

Ensure that a threaded, air-tight cap is placed on the soil gas sampling probe when purging/sampling is not being conducted to ensure that the probe is not serving as a preferential pathway for migration of vapors to indoor air.

The probe materials may vary depending on the user, but generally consist of stainless-steel tubing and Swagelock ® couplers and fittings. Suggested materials lists are included in Appendix C. GC-grade stainless steel tubing and fittings are recommended for use on sensitive sites. If standard stainless steel or machined brass materials are utilized, ensure that they are properly decontaminated prior to sampling and collect a materials blank as outlined in Section 5.4 of this guidance.

4.2 Subslab Soil Gas Sample Collection

It is recommended that subslab soil gas probes be allowed to equilibrate for 24 hours prior to sample collection. If the project schedule does not allow a 24-hour equilibration time, the probes should be purged at a low-flow rate to promote collection of representative samples. If this approach is required, contact one of the vapor intrusion contacts in Section 1.3 to discuss the site-specific conditions and determine an adequate purge volume. For sites with elevated VOCs in the subslab, a PID can also be utilized during purging to evaluate equilibration for representative sample collection. Subslab soil gas sample collection procedures are the same as soil gas sample collection. Refer to Section 3.3 of this guidance.

In addition to soil gas sample collection, note that subslab sampling ports can also be utilized to obtain data on air pressures in the subslab for comparison to indoor air pressures to determine the pressure gradient across the slab. These probes can also be utilized to measure vacuum and flow rate beneath the slab during diagnostic testing conducted prior to the design of a mitigation system.

5.0 LEAK DETECTION AND QA/QC

The following section discusses leak-detection options for soil gas sampling. It is recommended that some form of leak detection be employed during Terracon soil gas investigations. The degree of leak detection will depend on the project objectives, jurisdiction where the sampling is conducted, and sensitivity of the project. The collection of field and materials blanks is also discussed in this section.

5.1 Tracer Testing of Sampling Probe

Tracer tests of the sampling probe are performed to document that the seal(s) between the surface and the soil gas sampling location or the sampling apparatus are not allowing ambient air into the sample. A variety of materials can be used as a tracer. Two of the most common are isopropyl alcohol and helium gas. Note that some states require the use of laboratory-grade helium, which can be difficult to acquire. Check with your regulatory agency to ensure the appropriate tracer gas is used.

A common apparatus for performing a gas tracer test consists of a 5-gallon bucket or similar plastic container placed over the probe-rod assembly or sample port to control wind drift and concentrate the tracer gas (refer to Figure 13). The tracer gas is then introduced into the bucket or container via a bottle of compressed gas resulting in a shroud concentration of approximately two orders of magnitude higher than the reporting limit of the field monitoring meter or analytical method used to analyze the sample.

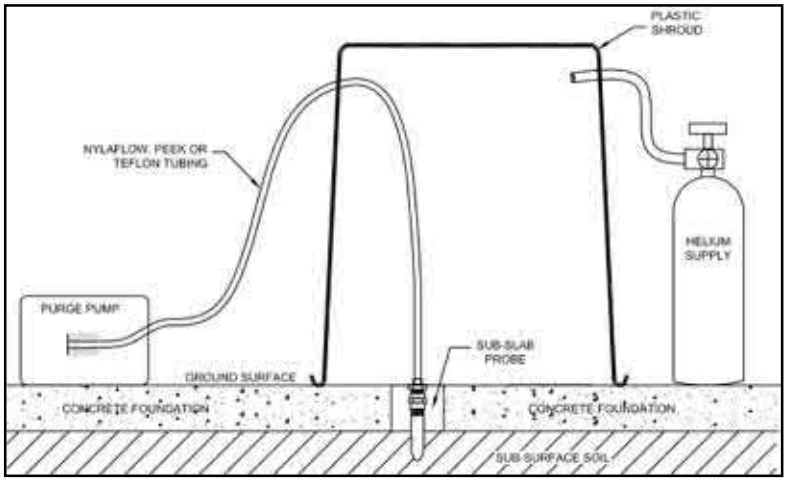

Figure 13: Simple Tracer Shroud

It is recommended that the tracer gas within the shroud be kept within ± 10% of its target value. The tracer gas concentration is measured both in the shroud and in the soil gas removed during sampling train purging using a field monitoring meter. The field monitoring meter or analytical method (if

samples are submitted for laboratory analysis) should be capable of measuring the tracer compound in air to an accuracy of 0.1 percent. For helium tracer gas, the MGD-2002 leak detector or equivalent is recommended.

The concentration of tracer gas measured from the sampling train should read less than 5% of the minimum shroud concentration. If the tracer gas measurement is greater than 5% of the minimum shroud concentration, the sample train should be inspected for leaks and re-tested.

In addition to measuring tracer gas using a field monitor, the tracer gas concentration in the collected air samples can be analyzed by the lab to see if elevated levels of tracer gas entered the samples. Some jurisdictions may require analytical testing of tracer gas; refer to your state-specific guidance. It should be noted that this simple tracer gas method for the sampling probe does not account for potential leaks associated with tubing and connections of the sampling train.

5.2 Tracer Testing of Sampling Probe and Sampling Train

One option for tracer testing for leak detection is the use a shroud covering both the soil gas sampling probe and the entire sampling train (i.e., Summa canister, associated gauges and regulators, tubing connections, and valves). An example setup is shown in Figure 14. This method is the most-complete tracer testing method in that all potential sources of leaks in the sampling train and the sampling probe are accounted for. The most common tracer gas is helium based on its availability and ease of monitoring in the field with readily-available field monitors.

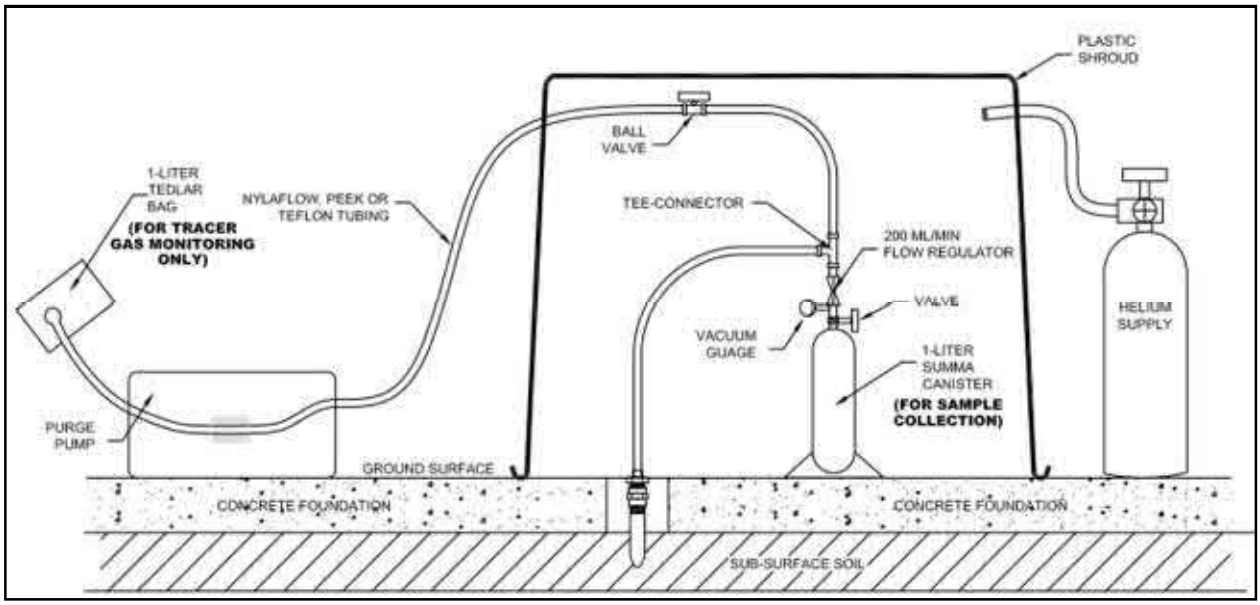

Figure 14: Tracer Shroud for Sampling Train and Probe

Tracer gas is introduced into the shroud (clear plastic container works best so the sampling train can be viewed) and maintained at a concentration of ± 10% of its target value (refer to Section 5.1). The sampling train and probe are then purged using a peristaltic pump or other pump and the tracer gas concentration of the purged soil gas is monitored using the field monitoring meter. The monitoring consists of filling a 1-L Tedlar® bag with the purged soil gas and measuring for tracer gas using the field monitor. This process is repeated two additional times to yield three consecutive tests (3 liters total purge volume) for tracer gas.

If the detected tracer gas concentration in the purged soil gas is 5% or less of the minimum tracer gas concentration in the shroud during three consecutive tests, sampling may proceed. If tracer gas is detected in the purged soil gas at concentrations greater than 5% of the minimum tracer gas concentration detected in the shroud, the probe and sampling train should be examined for potential leaks and the tracer test re-conducted.

5.3 Vacuum Shut-In Testing

Shut-in testing is a simple technique used in the field to evaluate the integrity of the sample train. A typical shut-in test involves closing the valve to the vapor probe and evacuating the sample train (all associated tubing hooked up to the Summa canister) to a measured vacuum. The vacuum should be a minimum of approximately 100 inches of water. Then, the vacuum is shut in by closing the valve at the opposite end of the sampling train near the pump pulling the vacuum. This vacuum is monitored using an in-line vacuum gauge. The initial measured vacuum should be maintained for 30 seconds for a positive shut-in test. If the vacuum dissipates from the sample train, the shut-in test has failed, and all connections should be inspected for leaks prior to proceeding with sampling. It should be noted that the major limitation of the vacuum shut-in test is that it does not allow leak testing of the soil gas probe.

5.4 Field and Materials Blanks

A field blank can provide information on possible cross-contamination from ambient air, while a materials blank can provide information on possible cross contamination from the tubing and fittings stock used for probe construction and in the sampling train. Collection of both types of blanks is recommended on soil gas investigations for QA/QC purposes.

<u>Field Blank</u>

The field blank should be collected by placing a Summa canister and dedicated flow regulator in a location on the site consistent with the soil gas sampling probes. The sample should be collected at some time during soil gas sample collection, preferably at a time of day when background sources of VOCs in ambient air (e.g., vehicle exhaust, industrial emissions, etc.) are expected to be the highest. Collect the sample by opening the Summa canister (similar procedures as discussed in Section 3.3).

When collecting a field blank for interior sub-slab samples, be aware that the most-representative ambient air blank is actually indoor air and the reported data would potentially need to be addressed as appropriate. If indoor air sampling has not been authorized by the client, an indoor ambient field blank should not be collected in conjunction with sub-slab soil gas sampling.

Materials Blank

The materials blank is collected by connecting a canister of commercially-available, certified-zero air calibration gas (such as that used for zero calibration of PID instruments) to the Summa canister via the same probe and sampling train materials utilized for the soil gas probes. The zero air is then drawn through the sampling train during collection into the Summa canister. Collection of a materials blank is particularly important if using brass or other machined tubing or fittings that may lead to cross contamination from residual cutting oils and cleaning agents.

Terracon
Consulting Engineers & Scientists

FIELD DATA FORM: SOIL GAS IMPLANT METHOD

PROJECT NAME: _____ Sample ID: _____

PROJECT NO.: _____ Sample Date: _____

Temperature: _____ ^{0}F / ^{0}C Barometric Pressure: _____ "Hg*

Has there been significant rain or snow recent to the sampling event? Yes No

If Yes to above question; Date(s) _____ Amount * _____ in. *(www.localconditions.com)

Location Description: _____ Surface Cover: _____

Subsurface Utilities and distance from probe: _____

Potential VOC sources in the vicinity? _____ Distance from probe: _____ ft.

Gas Probe / Implant Details

Soil Gas Probe / Implant Installation Method: _____

Sample Zone Soil Type: (circle one): clay silt sand gravel other: _____

Apparent Moisture Content of Sampling Zone (circle one): dry moist wet (do not sample if saturated)

Borehole Diameter (in.) _____ Borehole Depth (ft.) _____

Implant Depth (ft.) _____ Note: For nested points, add probe details in Comments section, below.

Sand Interval: _____ to _____ ft. Bentonite/Grout: _____ to _____ ft.

Water Source for bentonite hydration: _____ Deionized? yes no

Surface Completion / Protection: _____

Sample Purging

Equlibration time between probe installation and purging: _____ hours/days (48 hours recommended)

Sandpack/Granular Bentonite Pore Volume: _____ ml

Tubing Type: _____ Tubing Length: _____ ft. Tubing Diameter: _____ inch

Purging Method: _____ Pump Rate: _____ ml / min. Purging Duration: _____ min.

Volume Purged: _____ ml (Refer to Table 2 on page 13 of guidance for assistance with calculating volume purged)

PID / FID at Initial Purge: _____ ppm PID / FID at Sample Collection: _____ ppm

Leak Test Prior to Sample Collection? Yes No Method _____

Helium Tracer Test Tracer Compound: _____ Instrument: _____

Tracer Concentration, Test 1 Shroud _____ ppm/% Probe _____ ppm/%

Tracer Concentration, Test 2 Shroud _____ ppm/% Probe _____ ppm/%

Tracer Concentration, Test 3 Shroud _____ ppm/% Probe _____ ppm/%

Vacuum Shut-in Test

Start Time:_____ Vacuum: _____ "Hg Stop Time:_____ Vacuum: _____ "Hg

Sample Collection

Sample Container (circle one): 1L 6L Other: _____

Flow Controller (circle one): 100 ml/min 200 ml/min Other: _____

Start Time:_____ Vacuum: _____ "Hg Stop Time:_____ Vacuum: _____ "Hg

Split Sample? Yes No Describe Split Method: _____

Comments: _____

Form Completed By: _____ Date: _____

APPENDIX B

Post-Run Tubing Method: Equipment/Materials List, Procedures, and Field Data Form

Post-Run Tubing (PRT) – Suggested Equipment

The below is a list of suggested equipment for soil gas sampling using post-run tubing methods. If using a drilling subcontractor to collect PRT soil gas samples, ensure that the driller is experienced with the equipment and methods. All sampling train components (e.g., tubing, valves, fittings, etc.) should be dedicated or properly decontaminated between sampling locations. Hydrate bentonite or bentonite grout should be applied as seal around the probe rods at ground surface.

PRT Installation

- Level D or Applicable PPE
- Standard Decontamination Equipment
- Geoprobe Equipment Options
    - 1.25-inch Diameter Probe Rod
        - 60-inch length (5-foot) — Cat. # AT1260
        - 48-inch length (4-foot) — Cat. # AT1248
        - 36-inch length (3-foot) — Cat. # AT1236
        - 24-inch length (2-foot) — Cat. # AT1224
        - 12-inch length (1-foot) — Cat. # AT1212
        - 6-inch length (1/2-foot) — Cat. # AT1206
    - Geoprobe Post-Run Tubing System (PRT) Adaptor
        - PRT adaptor for ¼-inch ID tubing — Cat. # PR-25S
        - O-Rings for PRT adaptor — Cat. # PR25R
    - Geoprobe 1.25-inch PRT Expendable Point Holder — Cat. # PR1215
    - Geoprobe 1.0-inch Expendable Point
        - Steel point with O-ring — Cat. # AT14K
        - Steel point without O-ring — Cat. # AT14
    - Geoprobe Manual Slide Hammers
        - 30 Pound hammer — Cat. # 16151
        - 45 Pound hammer — Cat. # 16153
    - Geoprobe Manual Slide Hammer Anvil for 1.25-inch Rods — Cat. # 16175
    - Geoprobe Manual Probe Rod Jack ASM 1.25-inch Rods — Cat. # AT9925
    - Geoprobe Extension Rods to Knock Out Expendable Point
        - 60-Inch Stainless Steel Extension Rods — Cat. # 10073
        - Extension Rod Quick Link Box — Cat. # AT69
- Tubing (1/4" OD): Teflon®, Teflon®-Lined, Nylaflow, or PEEK
- Hydrated Bentonite or Bentonite Grout (5% Bentonite / 95% Portland Cement)

Sampling Train and Sampling Equipment

- Sample Tubing (1/4" OD): Teflon®, Teflon®-Lined, Nylaflow, or PEEK
- Connection/Utility Tubing (3/8" OD): Silicone
- Fittings/Valves: Stainless-Steel and/or Plastic; Ball Valves, 3-Way Valves, Tee Connectors, and/or Couplers (will vary based on user preference and compatibility with laboratory-supplied flow regulators and sampling trains)
- Summa Canister Equipped with Low-Flow Regulator (i.e., <200ml/min)
- Purge Pump: Peristaltic Pump, Lung Box, or Indoor Air Sampling Pump
- Graduated Syringe (alternative to pump for purging)
- Vacuum Gauge (if conducting vacuum shut-in test on sampling train)
- Tedlar® Bags (to monitor soil gas with PID, etc. – not for sample collection)
- Photoionization Detector (PID) Equipped with Appropriate Lamp
- Landfill Gas or Multi-Gas Meter (CH_4, CO_2, O_2, Balance Gas)

Post-Run Tubing (PRT) Procedures

1. Install O-rings on the PRT expendable point holder and the PRT adapter.
2. Drive the PRT rod configuration into the ground, connecting probe rods as necessary to reach the desired depth. After desired depth has been achieved, disengage the expendable drive point.
3. Retract the rods approximately 4 to 6 inches up to create a void from which to sample the soil gas.
4. Insert the PRT adapter end of the tubing down the inside diameter of the probe rods. Feed the tubing down the rod until it hits bottom on the expendable point holder. Allow approximately 4 to 6 ft. of tubing to extend out of the top of the probe rods before cutting it.
5. Grasp the excess tubing end and apply some downward pressure while turning it in a counter-clockwise motion to engage the adapter threads with the expendable point holder. Continue turning until the PRT adapter O-ring bottoms out in the expendable point holder.
6. Pull up lightly on the tubing to test the engagement of the threads. Failure of the PRT adapter to thread could mean that intrusion of soil may have occurred during driving of the rods or disengagement of the expendable drive point.
7. Apply a hydrated bentonite or grout seal at the surface around the probe rod where it enters the ground.
8. Allow the probe to equilibrate for a minimum of 2 hours.
9. Attach the sample tubing to the associated valves and sample container (i.e., Summa canister) to construct the sampling train. The exact sampling train setup may vary depending on user preferences but typically involves the use of a three-way valve or a tee-connector and valves to allow the user to switch flow between tubing leading to the purge pump and tubing leading to the Summa canister while not allowing ambient air to backflow into the system. Refer to Step 1 in Section 3.3 of guidance document and Figure 5 of guidance document.
10. Open the valve to the vacuum pump and purge a minimum three system volumes (i.e., void or pull-back space beneath the terminal geoprobe rod, and the volume of all tubing and fittings within the sample train). Conduct leak detection during purging as applicable (Refer to Section 5 of guidance document).
11. After purging, turn the three-way valve or associated valves to close off the purge tubing from the sampling train while allowing the sample tubing to remain connected to the Summa canister and filled with representative soil gas.
12. Collect soil gas samples as outlined in Section 3.3 of the guidance document.
13. After sample collection, remove the direct-push drive rods and plug the borehole in accordance with applicable regulations.

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FIELD DATA FORM: POST-RUN TUBING (PRT) METHOD

PROJECT NAME: _____ Sample ID : _____

PROJECT NO.: _____ Sample Date : _____

Temperature: _____ ^{0}F / ^{0}C Barometric Pressure: _____ "Hg*

Has there been significant rain or snow recent to the sampling event? Yes No

If Yes to above question; Date(s) _____ Amount * _____ in. *(www.localconditions.com)

Location Description: _____ Surface Cover: _____

Subsurface Utilities and distance from probe: _____

Potential VOC sources in the vicinity? _____ Distance from probe: _____ ft.

PRT Probe Details

PRT Equipment/Subcontractor: _____

Sample Zone Soil Type: (circle one): Clay Silt Sand Gravel Other _____

Apparent Moisture Content of Sampling Zone (circle one): dry moist wet (do not sample if saturated)

Borehole Diameter (in.) _____

PRT Probe Terminal Rod Depth (ft.) _____

Rod Pull-Back (in.) _____

Water Source for surface bentonite hydration: _____ Deionized? yes no

Surface Seal Around Probe Rod: _____

Sample Purging

Equlibration time between probe installation and purging: _____ hours (2 hours recommended)

Pull-Back Space Volume: _____ ml

Tubing Type: _____ Tubing Length: _____ ft. Tubing Diameter: _____ inch

Purging Method: _____ Pump Rate: _____ ml / min. Purging Duration: _____ min.

Volume Purged: _____ ml (Refer to Table 2 on page 13 of guidance for assistance with calculating volume purged)

PID / FID at Initial Purge: _____ ppm PID / FID at Sample Collection: _____ ppm

Leak Test Prior to Sample Collection? Yes No Method _____

Helium Tracer Test Tracer Compound: _____ Instrument: _____

Tracer Concentration, Test 1 Shroud _____ ppm/% Probe _____ ppm/%

Tracer Concentration, Test 2 Shroud _____ ppm/% Probe _____ ppm/%

Tracer Concentration, Test 3 Shroud _____ ppm/% Probe _____ ppm/%

Vacuum Shut-in Test

Start Time:_____ Vacuum: _____ "Hg Stop Time:_____ Vacuum: _____ "Hg

Sample Collection

Sample Container (circle one): 1L 6L Other: _____

Flow Controller (circle one): 100 ml/min 200 ml/min Other: _____

Start Time:_____ Vacuum: _____ "Hg Stop Time:_____ Vacuum: _____ "Hg

Split Sample? Yes No Describe Split Method: _____

Comments: _____

Form Completed By: _____ Date: _____

APPENDIX C

Subslab Soil Gas: Equipment/Materials List, Procedures, and Field Data Form

Sub-Slab Soil Gas – Suggested Equipment

The below is a list of suggested equipment for sub-slab port installation. Various alternatives exist for fittings and couplers that can be used to construct the ports. Stainless-steel tubing and fittings are recommended since brass components may lead to cross-contamination from cutting fluids. If using brass components, make sure they are properly decontaminated. All sampling train components (e.g., tubing, valves, fittings, etc.) should be dedicated or properly decontaminated between sampling locations.

Sub-Slab Port Construction

- Level D PPE
- Rotary Hammer Drill
- 1" or 1 ½" Diameter Carbide Masonry Drill Bit
- 3/4" or 3/8" Diameter Carbide Masonry Drill Bit
- Wet/Dry Vacuum Equipped with HEPA Filtration Unit
- Spray Bottle with Deionized or Distilled Water
- Dead-Blow Hammer
- 1/4" Outer-Diameter Stainless Steel Tubing
- 1/4" Swagelok® Nut
- Swagelok® SS-400-7-4 Female Adapter
- Swagelok® SS-400-1-4 Male Connector
- Teflon Washer or Modeling Clay
- Portland Cement

Sampling Train and Sampling Equipment

- Sample Tubing (1/4" OD): Teflon®, Teflon®-Lined, Nylaflow, or PEEK
- Connection/Utility Tubing (3/8" OD): Silicone
- Fittings/Valves: Stainless-Steel and/or Plastic; Ball Valves, 3-Way Valves, Tee Connectors, and/or Couplers (will vary based on user preference and compatibility with laboratory-supplied flow regulators and sampling trains)
- Summa Canister Equipped with Low-Flow Regulator (i.e., <200ml/min)
- Purge Pump: Peristaltic Pump, Lung Box, or Indoor Air Sampling Pump
- Graduated Syringe (alternative to pump for purging)
- Vacuum Gauge (if conducting vacuum shut-in test on sampling train)
- Tedlar® Bags (to monitor soil gas with PID, etc. – <u>not for sample collection</u>)
- Photoionization Detector (PID) Equipped with Appropriate Lamp
- Landfill Gas or Multi-Gas Meter (CH_4, CO_2, O_2, Balance Gas)

Subslab Soil Gas Procedures

1. Clear the locations all on-site utilities that may be located beneath or within the slab. Additionally, clear the locations of all post-tension cables and other foundation features such as radiant-heat flooring.
2. Drill a ⅜"-diameter pilot hole approximately 2 inches in depth.
3. Using the ⅜" pilot hole as your center, drill a 1"-diameter outer hole to a depth of approximately 1 ⅜". Vacuum any cuttings out of the hole.
4. Continue drilling the ⅜" inner or pilot hole through the slab and a few inches into the subslab material. While drilling, carefully vacuum out any cuttings from the outer hole.
5. Determine the length of stainless-steel tubing required to reach from the bottom of the outer hole, through the slab and into the open cavity below the slab. To avoid obstruction of the probe tube, ensure that it does not contact the subslab material. Using a tube cutter, cut the tubing to the desired length.
6. Attach a measured length (typically 3"-4") of ¼" OD stainless tubing to the female connector with a Swagelok® nut. Make sure that the tubing rests firmly in the fitting body and that the nut is finger-tight. While holding the fitting body firmly, tighten the nut 1¼ turns.
7. Insert the ¼" hex socket plug into the female connector. If using a stainless steel socket plug, wrap one layer of Teflon® thread tape around the threads to prevent binding. If using a brass socket plug, no Teflon® tape is needed. Tighten the plug slightly. Do not over tighten. If excessive force is required to remove the plug during the sample set up phase, the probe may break loose from the anchoring cement.
8. Place the completed probe into the outer hole to check fit and to ensure that stainless steel tubing is not in contact with the subslab material. Make necessary adjustments to the hole or probe assembly.
9. In a disposable cup or other container, mix a small amount of the anchoring cement or grout. Add water sparingly to create a mixture that is fairly stiff and moldable. Place a spoonful or two of the cement/grout around the stainless steel tubing adjacent to the female connector nut. Mold the cement/grout into a mass around the connector nut and up around the main body of the probe assembly. Slide the Teflon washer onto the stainless steel tube so that it rests next to the cement/grout mixture. The washer will prevent any anchoring cement/grout from flowing into the inner hole during the final step of probe installation.
10. Carefully place the probe assembly into the drilled hole, applying light pressure to seat the assembly. While inserting the probe assembly, work the concrete/grout mixture to fill voids. Clean up cement/grout that discharged out of the hole during placement; avoid getting any of the concrete/grout into fittings or on fitting threads. Allow the cement/grout to cure according to manufacturer's instructions before sampling.

11. Allow the subslab soil gas probe to equilibrate for a minimum of 24 hours prior to purging or sampling. If project schedule does not allow for this equilibration period, contact a member of the Vapor Encroachment/Intrusion Committee for purging alternatives to reduce the equilibration period.
12. Attach sample tubing to the subslab probe and the associated valves and sample container (i.e., Summa canister) to construct the sampling train. The exact sampling train setup may vary depending on user preferences but typically involves the use of a three-way valve or a tee-connector and valves to allow the user to switch flow between tubing leading to the purge pump and tubing leading to the Summa canister while not allowing ambient air to backflow into the system. Refer to Step 1 in Section 3.3 of guidance document and Figure 5 of guidance document.
13. Open the valve to the vacuum pump and purge a minimum three system volumes (i.e., the volume of all tubing and fittings within the sampling train). Conduct leak detection during purging as applicable (Refer to Section 5 of guidance document).
14. After purging, turn the three-way valve or associated valves to close off the purge tubing from the sampling train while allowing the sample tubing to remain connected to the Summa canister and filled with representative soil gas.
15. Collect soil gas samples as outlined in Section 3.3 of the guidance document.
16. After sample collection, remove the subslab probes and patch to match existing grade.

Standard Operating Procedure Installation and Extraction of the Vapor Pin™

May 20, 2011

Scope:

This standard operating procedure describes the installation and extraction of the Vapor Pin™[1] for use in sub-slab soil-gas sampling.

Purpose:

The purpose of this procedure is to assure good quality control in field operations and uniformity between field personnel in the use of the Vapor Pin™ for the collection of sub-slab soil-gas samples.

Equipment Needed:

- Assembled Vapor Pin™ [Vapor Pin™ and silicone sleeve (Figure 1)];
- Hammer drill;
- 5/8-inch diameter hammer bit (Hilti™ TE-YX 5/8" x 22" #00206514 or equivalent);
- 1½-inch diameter hammer bit (Hilti™ TE-YX 1½" x 23" #00293032 or equivalent) for flush mount applications;
- ¾-inch diameter bottle brush;
- Wet/dry vacuum with HEPA filter (optional);
- Vapor Pin™ installation/extraction tool;
- Dead blow hammer;
- Vapor Pin™ flush mount cover, as necessary;
- Vapor Pin™ protective cap; and
- VOC-free hole patching material (hydraulic cement) and putty knife or trowel.

[1]Cox-Colvin & Associates, Inc., designed and developed the Vapor Pin™; a patent is pending.

Figure 1. Assembled Vapor Pin™.

Installation Procedure:

1) Check for buried obstacles (pipes, electrical lines, etc.) prior to proceeding.

2) Set up wet/dry vacuum to collect drill cuttings.

3) If a flush mount installation is required, drill a 1½-inch diameter hole at least 1¾-inches into the slab.

4) Drill a 5/8-inch diameter hole through the slab and approximately 1-inch into the underlying soil to form a void.

5) Remove the drill bit, brush the hole with the bottle brush, and remove the loose cuttings with the vacuum.

6) Place the lower end of Vapor Pin™ assembly into the drilled hole. Place the small hole located in the handle of the extraction/installation tool over the Vapor Pin™ to protect the barb fitting and cap, and tap the Vapor Pin™ into place using a

dead blow hammer (Figure 2). Make sure the extraction/installation tool is aligned parallel to the Vapor Pin™ to avoid damaging the barb fitting.

Figure 2. Installing the Vapor Pin™.

For flush mount installations, unscrew the threaded coupling from the installation/extraction handle and use the hole in the end of the tool to assist with the installation (Figure 3).

Figure 3. Flush-mount installation.

During installation, the silicone sleeve will form a slight bulge between the slab and the Vapor Pin™ shoulder. Place the protective cap on Vapor Pin™ to prevent vapor loss prior to sampling (Figure 4).

Figure 4. Installed Vapor Pin™.

7) For flush mount installations, cover the Vapor Pin™ with a flush mount cover.

8) Allow 20 minutes or more (consult applicable guidance for your situation) for the sub-slab soil-gas conditions to equilibrate prior to sampling.

9) Remove protective cap and connect sample tubing to the barb fitting of the Vapor Pin™ (Figure 5).

Figure 5. Vapor Pin™ sample connection.

10) Conduct leak tests [(e.g., real-time monitoring of oxygen levels on extracted sub-slab soil gas, or placement of a water

dam around the Vapor Pin™) Figure 6]. Consult your local guidance for possible tests.

Figure 6. Water dam used for leak detection.

11) Collect sub-slab soil gas sample. When finished sampling, replace the protective cap and flush mount cover until the next sampling event. If the sampling is complete, extract the Vapor Pin™.

Extraction Procedure:

1) Remove the protective cap, and thread the installation/extraction tool onto the barrel of the Vapor Pin™ (Figure 7). Continue turning the tool to assist in extraction, then pull the Vapor Pin™ from the hole (Figure 8).

Figure 7. Removing the Vapor Pin™.

Figure 8. Extracted Vapor Pin™.

2) Fill the void with hydraulic cement and smooth with the trowel or putty knife.

3) Prior to reuse, remove the silicone sleeve and discard. Decontaminate the Vapor Pin™ in a hot water and Alconox® wash, then heat in an oven to a temperature of 130° C.

The Vapor Pin™ to designed be used repeatedly; however, replacement parts and supplies will be required periodically. These parts are available on-line at www.CoxColvin.com.

Replacement Parts:

Vapor Pin™ Kit Case - VPC001
Vapor Pins™ - VPIN0522
Silicone Sleeves - VPTS077
Installation/Extraction Tool - VPIE023
Protective Caps - VPPC010
Flush Mount Covers - VPFM050
Water Dam - VPWD004
Brush - VPB026

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FIELD DATA FORM: SUB-SLAB SOIL GAS SAMPLING

PROJECT NAME: _____ Sample ID : _____

PROJECT NO.: _____ Sample Date : _____

Outside Temperature: _____ ^{0}F / ^{0}C Indoor Temperature: _____ ^{0}F / ^{0}C _____

Building Type/Use: _____ Occupant: _____

Description of Room/Sample Area: _____

HVAC Unit Operating? Term Prior to Sampling? _____ (48 hours recommended)

Floor Materials / Covering: _____

Subslab Utilities and Distance from Probe: _____

Potential VOC sources in the vicinity: _____ Distance from probe: _____ ft.

Drill/Corehole Details

Slab Coring/Drilling Equipment Used: _____

Outer Hole Thickness: _____ in. (Typical 1 inch, max recommended 1.5 inches)

Slab Thickness: _____ in. (Drilled as 3/8-inch pilot hole through slab)

Base Material Beneath Slab (circle one): sand gravel clay crushed rock other: _____

Apparent Moisture Content (circle one): dry moist wet (do not sample if saturated)

Gas Probe Details

Sample Tubing Length (in.): _____ Sample Tubing Diameter (in.): _____

Tubing Depth from Top of Slab (in.): _____ (Tubing should 'float' approx. 1/4-inch above hole bottom)

Anchoring Cement Type / Name: _____

Surface Completion / Protection: _____

IF VaporPin™ Used, Circle Type: brass stainless-steel

Sample Purging

Equlibration time between probe installation and purging: _____ hours / days (24 hours recommended)

Tubing Type: _____ Tubing Length: _____ ft. Tubing Diameter: _____ inch

Purging Method: _____ Pump Rate: _____ ml / min. Purging Duration: _____ min.

Volume Purged: _____ ml (Refer to Table 2 on page 13 of guidance for assistance with calculating volume purged)

PID / FID at Initial Purge: _____ ppm PID / FID at Sample Collection: _____ ppm

Leak Test Prior to Sample Collection? Yes No Method _____

Helium Tracer Test Tracer Compound: _____ Instrument: _____

Tracer Concentration, Test 1 Shroud _____ ppm/% Probe _____ ppm/%

Tracer Concentration, Test 2 Shroud _____ ppm/% Probe _____ ppm/%

Tracer Concentration, Test 3 Shroud _____ ppm/% Probe _____ ppm/%

Vacuum Shut-in Test

Start Time:_____ Vacuum: _____ "Hg Stop Time:_____ Vacuum: _____ "Hg

Sample Collection

Sample Container (circle one): 1L 6L Other: _____

Flow Controller (circle one): 100 ml/min 200 ml/min Other: _____

Start Time:_____ Vacuum: _____ "Hg Stop Time:_____ Vacuum: _____ "Hg

Split Sample? Yes No Describe Split Method: _____

Comments: _____

Form Completed By: _____ Date: _____

APPENDIX D

Available Soil Gas Analytical Methods

AVAILABLE SOIL GAS ANALYTICAL METHODS AND TYPICAL COSTS[1]		
Parameter	Method	Typical Cost[2]
BTEX, MTBE, TPH	EPA TO-3	$75
VOCs (1 - 20 compounds), 5 - 20 ppb	EPA TO-15	$90
VOCs (1 - 20 compounds), 0.5 - 2 ppb	EPA TO-15	$110
Polar and nonpolar VOCs	EPA TO-15	$125
Low-level VOCs	EPA TO-15 SIM	$165
PCBs/Pesticides	EPA TO-4A or TO-10A	$175
SVOCs	EPA TO-13A	$190
Dioxins/Furans	EPA TO-9A	$675
Fixed gases (methane, nitrogen, oxygen)	ASTM D1946	$115
Fixed gases (CO_2 only)	ASTM D1946	$100

NOTES:

[1]Common available analytical methods are listed in the table above. The list is not all-inclusive. Modified EPA SW-846 Methods 8021 and 8260 can be utilized to analyze soil gas. If using modified SW-846 Methods, ensure that the detection limits will be low enough to compare your data to the applicable regulatory criteria. Also ensure that your state or jurisdiction accepts the use of modified SW-846 Methods.

[2]Typical costs based on 2013 industry averages.

APPENDIX E

References

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E.2220

Disposal of Spent Supplies

LAST REVIEW: August 2019

GUIDANCE:

- Conduct disposal as required for the project. Refer to the Project Manager for specific guidance.

1. OBJECTIVE

To provide for proper disposal of sampling equipment, personal protective equipment (PPE), etc. in accordance with applicable regulations.

2. EQUIPMENT

- Equipment specified by project manager;
- Trash bags;
- 55-gallon drums;
- Paper towels;
- Decontamination fluid (e.g. detergent and water mixture); and
- Disposable chemical-resistant gloves.

3. DOCUMENTATION

a) Disposal information should be recorded in the field logbook, including method of disposal and location of disposed waste (if left on the site).

b) Waste drums and/or containers should be appropriately labeled including, but not limited to: waste type, waste determination status, date generated, generating facility location, and generator contact information.

4. PERSONAL PROTECTIVE EQUIPMENT

a) Wear and maintain Terracon-approved PPE at project sites and in laboratories as required by project, task, and/or work environment, except when in a PPE-Free Zone. This includes use of the Core PPE Kit.

b) Wear disposable nitrile or other chemical resistant gloves at all times.

c) Don't try to account for unusual or special health and safety situations. Unusual or special health and safety situations should be addressed by the Health and Safety Plan and the Project Manager.

d) Take care when disposing of sample containers with chemical preservatives and contaminated sampling equipment.

5. PROCEDURES

Collect sampling equipment, spent PPE, cleaning fluids, etc. as specified by the Project Manager. This may include segregating the material and sealing in 55-gallon drums, placing securely on the site, or disposal to a nearby dumpster (non-hazardous). If material is to be containerized for transportation or storage on-site, clearly mark all containers as to their materials, taking care to use proper signage. Transportation of PPE and sampling disposables can be brought back to Terracon offices for disposal.

6. TRAINING AND CERTIFICATION

- Completed 40-Hour OSHA 1910.120 HAZWOPER training, inclusive of respiratory protection, and a current certificate of annual 8-Hour OSHA 1910.120 HAZWOPER Refresher Training is required for all personnel handling media contaminated by hazardous substances.

E.2235

Handling and Storage of Investigative Derived Waste (Hazardous)

LAST REVIEW: August 2019

GUIDANCE:

- Conduct disposal as required for the project. Refer to the Project Manager for specific guidance.
- Title 40 of the Code of Federal Regulations, Parts 260 through 272.
- U.S. Environmental Protection Agency, Region 4, 2020. *Management of Investigation Derived Waste, ID: LSASDPROC-202-R4.* May 8.

1. OBJECTIVE

To establish standardized procedures for the identification, handling, storing, documentation, and disposal of wastes generated during environmental projects. Although not all wastes are considered hazardous, proper procedures are required to characterize the wastes generated.

2. BACKGROUND AND REFERENCE

The primary regulations governing hazardous waste are Title 40 of the Code of Federal Regulations, Parts 260 through 272. Individual state regulations are also reviewed where applicable.

3. EQUIPMENT

- Plastic Sheeting
- Shovel(s)
- Wheelbarrow
- USDOT-approved 55-gallon drums
- Disposable chemical-resistant gloves
- Other material as specified by Project Manager

4. DOCUMENTATION

a) Disposal information should be recorded in the field logbook, including method of disposal and location of disposed waste (if left on the site).

b) Waste drums and/or containers should be appropriately labeled including, but not limited to: waste type, waste determination status, date generated, generating facility location, and generator contact information.

c) Copies of manifests, waste determinations, or waste analyses

5. PERSONAL PROTECTIVE EQUIPMENT

a) Wear and maintain Terracon-approved PPE at project sites and in laboratories as required by project, task, and/or work environment, except when in a PPE-Free Zone. This includes use of the Core PPE Kit.

b) Wear disposable nitrile or other chemical resistant gloves at all times.

c) Don't try to account for unusual or special health and safety situations. Unusual or special health and safety situations should be addressed by the Health and Safety Plan and the Project Manager.

6. PROCEDURES

Drum/Barrel Storage

Soil cuttings and groundwater should be containerized in fifty-five (55) gallon drums for off-site disposal. Use shovels or other means to place cuttings into drums for subsequent management. Provide labeling that notes the barrel contents are potentially hazardous soil cuttings and label according to DOT requirements.

Drums containing hazardous waste should be closed and stored on the site in a secure place. Hazardous waste drums should be shipped off-site within accumulation time limits specified by the amount of waste generated. Small quantity generators (>100 and <1,000 kg/month) should ship waste off-site within 180 day, or 270 days if transporting greater than 200 miles, of generation. Large quantity generators (≥1,000 kg/month, or >1 kg/month of acute hazardous waste, or >100 kg/month of acute spill residue or soil) should ship waste off-site within 90 days of generation.

The generator should maintain copies of manifests, waste determinations, or waste analyses for at 3 years.

7. TRAINING AND CERTIFICATION

- Completed 40-Hour OSHA 1910.120 HAZWOPER training, inclusive of respiratory protection, and a current certificate of annual 8-Hour OSHA 1910.120 HAZWOPER Refresher Training is required for all personnel handling media contaminated by hazardous substances.

E.2410

Cleaning – Manual Washing

LAST REVIEW: August 2019

GUIDANCE:

- Conduct decontamination as required for the project. Refer to the Project Manager for specific guidance.
- U.S. Environmental Protection Agency, Region 4, 2020. *Field Equipment Cleaning and Decontamination, ID: LSASDPROC-205-R4.* June 22.

1. OBJECTIVE AND BACKGROUND

To prepare the equipment for field activities in a manner that minimizes the potential for obtaining biased or erroneous data due to contaminant transfer between sampling locations. Cleaning is performed as a quality assurance measure and a safety precaution. It minimizes cross-contaminants between samples and also helps to maintain a clean working environment.

2. EQUIPMENT

- As determined by the project manager;
- Expendable supplies:
  - Disposable chemical-resistant gloves
  - Chem-wipe® cleaning pads
  - Garbage bags
  - Laboratory glassware detergent such as Alconox or Trisodium Phosphate (TSP)
  - Containers for collection of waste liquids, if necessary
  - Dilute acid, methanol, isopropyl alcohol, ethanol or other cleaning fluid
- Wash rack facility;
- Cleaning containers with brushes (plastic, steel or stainless-steel buckets);
- Aluminum foil or plastic; and
- Source of potable water without chemicals that would interfere or be identified in chemical analysis of samples. The project manager may require laboratory testing of cleaning water as a background for evaluating chemical analyses.

3. DOCUMENTATION

a) Document general cleaning procedures in the field logbook.

4. PERSONAL PROTECTIVE EQUIPMENT

a) Wear and maintain Terracon-approved PPE at project sites and in laboratories as required by project, task, and/or work environment, except when in a PPE-Free Zone. This includes use of the Core PPE Kit.

b) Wear disposable nitrile or other chemical resistant gloves at all times.

c) Don't try to account for unusual or special health and safety situations. Unusual or special health and safety situations should be addressed by the Health and Safety Plan and the Project Manager.

5. PROCEDURES

Cleaning procedures will vary considerably based on the equipment, type of contaminant, type of sample and detection levels. Initial cleaning should take place at the site prior to demobilizing. This will minimize the spread of contamination. The extent of on-site cleaning will vary based on specific conditions; however, an attempt should be made to decontaminate as thoroughly as possible on site. The more care one applies on keeping the equipment clean, the less energy will be required on cleaning.

All field equipment must be prepared at the laboratory/office prior to use. This will include additional cleaning, inspection, and maintenance.

Equipment such as hand trowels, bailers, mixing bowls, hand augers, etc., should be cleaned and wrapped in aluminum foil (with shiny side out) or plastic, as appropriate, prior to mobilization.

Sampling and monitoring equipment is normally cleaned by washing and rinsing with liquids such as a soap or detergent solution, potable tap water, deionized water (DI), methanol, isopropyl alcohol or a dilute acid.

The extent and type of contaminant will determine the degree of cleaning. If the level of contamination cannot be readily determined, cleaning should be based on the assumption that the equipment is highly contaminated.

Listed below is a cleaning procedure which may be employed for field equipment such as a water level indicator at a monitoring well which contains dissolved petroleum hydrocarbons. If different or more elaborate procedures are required, they should be specified by the Project Manager during the project initiation meeting.

- Remove gross contamination from the equipment using a Chem-wipe® cleaning pad or brush.
- Wash with a soap or detergent solution.
- Rinse with potable water followed by a D.I. water rinse.
- Rinse with methanol or isopropyl alcohol (if method requires) and repeat rinse with D.I. water.

- Repeat the entire procedure or any part of the procedure as necessary.

Waste products produced by the cleaning procedures such as waste liquids, solids, gloves, used Chem-wipe® cleaning pads, etc., should be collected and disposed of based on the nature of the contaminant. Specific details for the handling of these wastes should be addressed by the Project Manager.

6. TRAINING AND CERTIFICATION

- Completed 40-Hour OSHA 1910.120 HAZWOPER training, inclusive of respiratory protection, and a current certificate of annual 8-Hour OSHA 1910.120 HAZWOPER Refresher Training is required for all personnel handling media contaminated by hazardous substances.

E.2420

Cleaning High-Pressure, Hot Water Washing

LAST REVIEW: August 2019

GUIDANCE:

- Conduct decontamination as required for the project. Refer to the Project Manager for specific guidance.
- U.S. Environmental Protection Agency, Region 4, 2020. *Field Equipment Cleaning and Decontamination, ID: LSASDPROC-205-R4.* June 22.

1. OBJECTIVE AND BACKGROUND

To prepare the equipment for field activities in a manner that minimizes the potential for obtaining biased or erroneous data due to contaminant transfer between sampling locations. Cleaning is performed as a quality assurance measure and a safety precaution. It minimizes cross-contaminants between samples and also helps to maintain a clean working environment.

2. EQUIPMENT

- As determined by the project manager;
- High-pressure hot/cold water washing device or steam cleaner;
- Expendable supplies:
  - Disposable chemical-resistant gloves
  - Chem-wipe® cleaning pads
  - Garbage bags
  - Laboratory glassware detergent such as Alconox or Trisodium Phosphate (TSP)
  - Containers for collection of waste liquids, if necessary
  - Dilute acid, methanol, isopropyl alcohol, ethanol or other cleaning fluid
- Wash rack facility;
- Cleaning containers with brushes (plastic, steel or stainless-steel buckets);
- Aluminum foil or plastic;
- Materials for decontamination pad (plastic sheeting and square wood frame); and
- Source of potable water without chemicals that would interfere or be identified in chemical analysis of samples. The project manager may require laboratory testing of cleaning water as a background for evaluating chemical analyses.

3. DOCUMENTATION

a) Document general cleaning procedures in the field logbook.

4. PERSONAL PROTECTIVE EQUIPMENT

a) Wear and maintain Terracon-approved PPE at project sites and in laboratories as required by project, task, and/or work environment, except when in a PPE-Free Zone. This includes use of the Core PPE Kit.

b) Wear disposable nitrile or other chemical resistant gloves at all times.

c) Wear a faceshield and/or coveralls to avoid contacting contaminated material during decontamination.

d) Don't try to account for unusual or special health and safety situations. Unusual or special health and safety situations should be addressed by the Health and Safety Plan and the Project Manager.

5. PROCEDURES

Cleaning procedures will vary considerably based on the equipment, type of contaminant, type of sample and detection levels. Initial cleaning should take place at the site prior to demobilizing. This will minimize the spread of contamination. The extent of on-site cleaning will vary based on specific conditions; however, an attempt should be made to decontaminate as thoroughly as possible on site. The more care one applies on keeping the equipment clean, the less energy will be required on cleaning.

All field equipment must be prepared at the laboratory/office prior to use. This will include additional cleaning, inspection, and maintenance.

Cleaning and decontamination of all equipment should occur at a designated area (decontamination pad) on the site. The decontamination pad should be constructed according to Section 3.2 of the U.S. Environmental Protection Agency, Region 4, *Field Equipment Cleaning and Decontamination* Operating Procedure (June 2020). Decontamination of larger objects, such as the working end of the drill rig or the downhole tools is accomplished using a high-pressure wash. Any equipment that comes in contact with contaminated material should be decontaminated between borings.

The extent and type of contaminant will determine the degree of cleaning. If the level of contamination cannot be readily determined, cleaning should be based on the assumption that the equipment is highly contaminated.

Listed below is a cleaning procedure which may be employed for field equipment such as a water level indicator at a monitoring well which contains dissolved petroleum hydrocarbons. If different or more elaborate procedures are required, they should be specified by the Project Manager during the project initiation meeting.

- Remove gross contamination from the equipment using a Chem-wipe® cleaning pad or brush.
- Wash with a steam cleaner and/or high-pressure hot water washer with a detergent compartment.
- Rinse with a D.I. water rinse.
- Rinse with methanol or isopropyl alcohol (if method requires) and repeat rinse with D.I. water.
- Repeat the entire procedure or any part of the procedure as necessary.

Waste products produced by the cleaning procedures such as waste liquids, solids, gloves, used Chem-wipe® cleaning pads, etc., should be collected and disposed of based on the nature of the contaminant. Specific details for the handling of these wastes should be addressed by the Project Manager.

6. TRAINING AND CERTIFICATION

- Completed 40-Hour OSHA 1910.120 HAZWOPER training, inclusive of respiratory protection, and a current certificate of annual 8-Hour OSHA 1910.120 HAZWOPER Refresher Training is required for all personnel handling media contaminated by hazardous substances.

E.NC01

SAMPLE NOMENCLATURE

(DATA MANAGEMENT)

LAST REVIEW: July 2019 & TAMP RI Specific

1. OBJECTIVE

In order to maintain an organized sampling scheme, the Project Managers and field staff members will implement the following formatting rules when naming samples.

2. PROCEDURES

The components of this sample name format are as follows:

1. Depths (if applicable) – See description of depth formatting in Sample Information section above.
2. QC Type (if applicable) - QC type codes should be included for QC samples and are listed below.
3. Location Identification (ID) - The location ID is a unique identifier given to a sample location – a specific point in horizontal space where a sample is taken. Multiple samples can be taken at a given sample location either at different depths or at different times. Sample locations can be permanent (like a monitoring well) or temporary (like a soil boring).
4.

Location ID Format:

- [LocationTypeAbbrev][UniqueNumber]
- Example: RI-SB01

The components of the sample name and location ID format are as follows:

1. Location Type Abbreviation - The location type abbreviations for this project will include:
   - RI-SB – Soil Boring
   - RI-GW – DPT Groundwater
   - MW – Monitoring Well
   - SV – Soil Vapor
   - IA – Indoor Air
   - AA – Ambient Air
   - SW – Surface Water
   - SED – Sediment (associated with a surface water body)
   - WSW – Water Supply Well

   <u>QA/QC Types</u>
   - DUP – Duplicate (Duplicates will be submitted as blind duplicates)

- MS – Matrix Spike
- MSD – Matrix Spike Duplicated
- FB – Field Blank
- EB – Equipment Blank
- TB – Trip Blank

Sample Matrices and Methods

- RI-SB – Soil
- RI-GW – DPT Groundwater
- MW – Monitoring Well
- SV – Soil Vapor
- SW – Surface Water
- SED – Sediment (associated with a surface water body)
- IDW – Investigation Derived Waste

Sample Name Format (Soil):

- [LocationID]([TopDepth]-[BtmDepth])
- Example: RI-SB01(12-14)

Sample Name Format (DPT Groundwater):

- [LocationID]-[BtmDepth]
- Example: RI-GW01-14

Sample Name Format (Monitoring Well, Soil Vapor, Surface Water, Sediment):

- [LocationID]
- Example: MW-125

2. Unique Number – The unique number in a location ID should include leading zeros (e.g. MW01, not MW1). If the Site is anticipated to have 100 or more of a specific location type, the number should have three digits (e.g. MW001), and four digits for 1,000 or more locations, etc.

E.NC02

FIELD FORMS

LAST REVIEW: July 2019

1. OBJECTIVE

The following field forms are provided for field staff to collect pertinent site data.

2. FORMS

- **Boring log**
  - See SOP E.0160 Soil Sampling, and other SOPs as applicable
- **Daily Field Observation Form**
  - Will be filled daily and provided weekly, unless specified otherwise
- **Well Development Data**
  - See SOP E.1400 Well Development, and other SOPs as applicable
- **Monitoring Well Sampling Information Form**
  - See SOP E.0470 Groundwater Sampling - Safety Level D, and other SOPs as applicable
- **Soil Vapor Tracer Test & Sampling**
  - See SOP E.2110 Soil Gas Sampling - Boring Implant Method, and other SOPs as applicable
- **Groundwater Level Monitoring**
  - See SOP E.0470 Groundwater Sampling - Safety Level D, SOP E.1830 Physical Field Measurement – Free-Phase Product, and other SOPs as applicable
- **Monitoring Well Documentation**
  - For use onsite, See SOP E.0410 Subsurface Sampling - General Push-Probe Technology, SOP E.0340 Air Rotary Drilling, SOP E.0320 Hollow-Stem Auger Drilling, and other SOPs as applicable
- **Well Construction Form GW-1**
  - Used to document offsite wells per North Carolina Department of Environmental Quality - Division of Water Resources
- **Photo Log**
  - See SOP E.0018 Basic Recordkeeping and Field Documentation, and other SOPs as applicable
- **Chain of Custody** (Pace Analytical Laboratories, generic)
  - See SOP E.0026 Chain of Custody Documentation, and other SOPs as applicable

PROJECT N0:	**BORING NUMBER:**	SHEET ___ OF ___	Terracon
PROJECT NAME:	BORING METHOD:	Northing Coord:	FT/Meters
BOREHOLE DIA/WELL DIA: _____/ INCHES	DRILL RIG:	Easting Coord:	FT/Meters
SCREEN SET: ____ TO _____ FT	CLIENT:	Ground Elevation:	FT/Meters
SCREEN SIZE: SLOT	PROJECT ADDRESS:	Riser Elevation:	FT/Meters
WELL MATERIAL:	CITY, STATE	TERRACON REPRESENTATIVE:	
END OF BORING: FT	DATE STARTED:	DATE FINISHED	
BORING ABANDONMENT:	DRILLING CONTRACTOR:	DRILLING FOREMAN:	
CUTTINGS ☐ GROUT ☐	DTW BGS: WHILE DRILLING: FT	Location:	
GROUT MIXTURE:	DTW BGS: AFTER DRILLING: FT	Surface Cond:	

DEPTH (FT)	**Sample Lithology:** grain size distribution, soil type, color, odor, water content, plasticity, etc.	USCS SYMBOL	INTERVAL AND RECOVERY IN INCHES	PID (ppm) X=SAMPLE COLLECTED	Well Const. Details

NOTES: (i.e. special conditions, sample ID, etc.)

Daily Field Observation Form

Page ___ of ___

Project:	Project #:
Location:	Date:
Client:	Completed By:
Weather:	Arrived: Departed:

Observations/Notes:	Photo/#

Daily Tailgate Safety Meeting

Project: _____

Site/Location: _____

Date: _____

SITE

Site Conditions:
- ☐ Overhead power
- ☐ Canal/River/Ponds
- ☐ Wetlands
- ☐ Ditches/Hills/Slopes
- ☐ Difficult Access Road
- ☐ Railroad
- ☐ Barbed Wire
- ☐ Difficult Owner

Weather Conditions:

Temp: _____
- ☐ Sunny
- ☐ Overcast
- ☐ Rain
- ☐ Windy
- ☐ Snow, Ice
- ☐ _____

Road Conditions:
- ☐ Snow
- ☐ Ice
- ☐ Muddy
- ☐ Wet
- ☐ Dry
- ☐ Fog
- ☐ _____

SCOPE

Sampling:
- ☐ Soil vapor
- ☐ Air
- ☐ Soil
- ☐ Surface water
- ☐ Groundwater
- ☐ Sludge
- ☐ ACM/LBP

Drilling:
- ☐ DPT
- ☐ Auger
- ☐ Air
- ☐ Mud
- ☐ Sonic
- ☐ Rock Core
- ☐ _____

Installation:
- ☐ Soil vapor
- ☐ Type II well
- ☐ Type III well
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

Remediation:
- ☐ AFVR
- ☐ System O&M
- ☐ Excavation
- ☐ Tank Removal
- ☐ Injection
- ☐ _____
- ☐ _____

Site Recon:
- ☐ Phase I ESA
- ☐ Well Survey
- ☐ Utility Locate
- ☐ Boring Layout
- ☐ SPCC/SWPPP
- ☐ Survey
- ☐ _____

HAZARDS

Physical Hazards:
- ☐ Slips, Trips, Falls
- ☐ Underground Utilities
- ☐ Heat Stress/Stroke
- ☐ Hypothermia
- ☐ Noise
- ☐ Lifting
- ☐ _____
- ☐ _____

Biological Hazards:
- ☐ Ticks
- ☐ Mosquitos
- ☐ Chiggers
- ☐ Wasps/Yellow Jackets
- ☐ Snakes
- ☐ Bears
- ☐ Poison Ivy
- ☐ Fire Ants

Chemical Hazards:
- ☐ LNAPL
- ☐ VOCs: _____
- ☐ SVOCs: _____
- ☐ Metals: _____
- ☐ SVOCs: _____
- ☐ Pesticides: _____
- ☐ PCBs: _____
- ☐ _____

Other Hazards:
- ☐ Excavation
- ☐ Explosion
- ☐ Confined Spaces
- ☐ Heavy Equipment
- ☐ Vehicles
- ☐ Radiation
- ☐ _____
- ☐ _____

SAFETY

Level D:
- ☐ Hard Hat
- ☐ Safety Glasses
- ☐ Steel Toe Boots
- ☐ Gloves
- ☐ Hearing Protection
- ☐ Tyvek
- ☐ High Visibilty Vest
- ☐ _____
- ☐ _____

Other PPE:
- ☐ Bug Repellent
- ☐ Permethrin Clothing
- ☐ Faceshield
- ☐ Chainsaw Chaps
- ☐ Snake Chaps
- ☐ Life Jacket
- ☐ Respirator
- ☐ _____
- ☐ _____

Special Equipment:
- ☐ First Aid Kit
- ☐ Fire Extinguisher
- ☐ Poison Ivy Kit/Technu
- ☐ Cones, Barricades, Signs
- ☐ GFCI
- ☐ PID
- ☐ LEL/Oxygen
- ☐ Safety Harness
- ☐ _____

Other:
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

Attendees:

Name	Company	Signature	Reviewed HASP?

Terracon

Well Development Log

Terracon

Project No. _____ Date _____
Site Location _____ Well ID _____
Weather _____ Sample Collection Time _____

Casing

Diameter	Gal/ft	L/ft
☐ 6	1.47	5.56
☐ 4	.653	2.47
☐ 3	.367	1.39
☐ 2	.163	.618
☐ 1	.041	.154
☐ ¾	.023	.087

Evacuation Data

Screen Length (ft bls) _____
Well Length (ft bTOC) _____
Depth to water (ft bTOC) _____
Water column length (ft) _____
Stick-up length (ft ags) _____
Well Volume _____
Evacuation Volume (x) _____

Purge Method

☐ Peristaltic ☐ Grundfos
☐ Bladder ☐ Monsoon
☐ Bailer ☐ PDB
☐ Monsoon ☐ Whale/Geosquirt

Purge Device

☐ Dedicated
☐ Disposable
☐ Decontaminated

Field Parameters

Date/Time	Gallons Removed	Depth to Water	pH	Specific Conductance (μmhos/cm)	Turbidity (NTU)	Appearance

Notes: _____

Soil Vapor Tracer Test & Sampling

Sample ID: _____
Project : _____
Site Location: _____
Field Personnel: _____
Date: _____
Weather: _____
Canister Size: _____
Sample Rate: _____
Analysis: _____

Terracon
2401 Brentwood Road Suite 107
Raleigh, NC 27604
919.873.2211

Canister No.: _____
Flow Controller No.: _____

HELIUM TRACER TEST

	Purge #1	Purge #2	Purge #3
Start Shroud He %:			
Purge Start Time:			
Volume Purged (mL):			
End Shroud He %:			
He in Soil Gas (ppm):			
PID Ambient Air (ppb):			
PID SV Point (ppb):			

Note: 1% = 10,000 ppm

SAMPLE COLLECTION

Time	Vacuum (in Hg)
Start:	
Stop:	

VOLUME CALCULATION

Diameter	Gallons/ft	Liters/ft	mL or cc/ft
3	0.3672	1.39	1390
2	0.1632	0.618	617.8
1	0.04080	0.154	154.4
3/4	0.02295	0.0869	86.9
5/8	0.01594	0.0603	60.3
1/2	0.01020	0.0386	38.6
3/8	0.00574	0.0217	21.7
1/4	0.00255	0.00965	9.65

Assumed porosity: sand pack= 0.4, dry bentonite=0.5

Terracon

GROUNDWATER LEVEL MONITORING

Page____ of ____
Project No. _____
Project Name: _____

Well ID	Date	Time	Depth (ft) below TOC				Method of measurement, well condition; note repairs needed
			LNAPL Product	Water	DNAPL Product	Bottom of Well	

*All equipment which comes into contact with other wells must be cleaned between uses. Standard Terracon protocol for cleaning includes a thorough wash mixture followed by a rinse using de-ionized or distilled water. With a biodegradable detergent and tap water.

Equipment _____

_____

_____

Monitor(s) Signature and Date: _____

MONITORING WELL DOCUMENTATION
No:_____

PROJECT NAME: _____ INSTALLATION DATE: _____

PROJECT LOCATION: _____ PROJECT NO. _____

CONSTRUCTION DETAILS:

Boring Diameter (a) _____ inches

Casing Diameter (b) _____ inches I.D.

Casing Material _____

Screening length (c) _____ Screen Opening _____ inches

From Elevation (i) _____ to (j) _____

Ground Surface Elevation at Well (g) _____

Height of Well Head Above Ground (d) _____

Depth of Well from Top of Pipe (e) _____

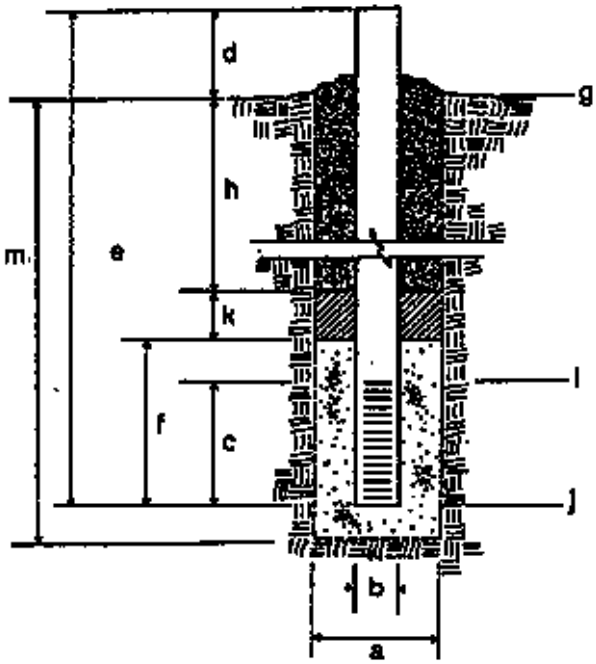
Depth of Boring (m) _____

Backfill:

Type		Depth
_____	(f)	_____
_____	(k)	_____
_____	(h)	_____

Type of Well Cap _____

Protector Pipe _____ Lock type and number _____



Remarks:

_____

_____

_____

_____

_____

_____

Groundwater Sampling Log

Terracon

Site Name: _____ **Well ID:** _____

Project Number: _____ **Sample Date:** _____

Site Location: _____ **Sampler Initials:** _____

Weather: _____ **Sample Time:** _____

GAUGING DATA

Gauging Date: _____

Screen Interval (ft bls): _____

Total Depth (ft bTOC): _____

Depth to water (ft bTOC): _____

Stick-up length (ft ags): _____

Water column length (ft): _____

Well Volume: _____

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
¾"	0.023	0.087

Sample Method

- ☐ Peristaltic
- ☐ Bladder
- ☐ Bailer
- ☐ Grundfos
- ☐ Monsoon
- ☐ PDB

Purge Device

- ☐ Dedicated
- ☐ Disposable
- ☐ Decontaminated

QA/QC Samples

- ☐ Duplicate
- ☐ MS/MSD
- ☐ Equipment Blank

QA/QC Sample ID

_____

_____

_____

FIELD PARAMETERS

Time	Purge Vol. (gal)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time

Notes: _____

_____

Signature: _____ **Date:** _____

WELL CONSTRUCTION RECORD (GW-1)

For Internal Use Only:

1. Well Contractor Information:

Well Contractor Name

NC Well Contractor Certification Number

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. UIC, County, State, Variance, etc.)

3. Well Use (check well use):

Water Supply Well:	
☐Agricultural	☐Municipal/Public
☐Geothermal (Heating/Cooling Supply)	☐Residential Water Supply (single)
☐Industrial/Commercial	☐Residential Water Supply (shared)
☐Irrigation	☐Wells > 100,000 GPD
Non-Water Supply Well:	
☐Monitoring	☐Recovery
Injection Well:	
☐Aquifer Recharge	☐Groundwater Remediation
☐Aquifer Storage and Recovery	☐Salinity Barrier
☐Aquifer Test	☐Stormwater Drainage
☐Experimental Technology	☐Subsidence Control
☐Geothermal (Closed Loop)	☐Tracer
☐Geothermal (Heating/Cooling Return)	☐Other (explain under #21 Remarks)

4. Date Well(s) Completed: _____ **Well ID#** _____

5a. Well Location:

Facility/Owner Name

Facility ID# (if applicable)

Physical Address, City, and Zip

County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

_____ **N** _____ **W**

6. Is(are) the well(s): ☐**Permanent** **or** ☐**Temporary**

7. Is this a repair to an existing well: ☐**Yes** **or** ☐**No**
If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. **For Geoprobe/DPT or Closed-Loop Geothermal Wells** having the same construction, only 1 GW-1 is needed. Indicate TOTAL NUMBER of wells drilled:_____

9. Total well depth below land surface: _____**(ft.)**
For multiple wells list all depths if different (example- 3@200' and 2@100')

10. Static water level below top of casing: _____ **(ft.)**
If water level is above casing, use "+"

11. Borehole diameter: _____ **(in.)**

12. Well construction method: _____
(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) _____ **Method of test:** _____

13b. Disinfection type: _____ **Amount:** _____

14. WATER ZONES

FROM	TO	DESCRIPTION
ft.	ft.	
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
ft.	ft.	in.			
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
ft.	ft.		
ft.	ft.		
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
ft.	ft.		
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS

22. Certification:

Signature of Certified Well Contractor

Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:
You may use the back of this page to provide additional well construction info (add 'See Over' in Remarks Box). You may also attach additional pages if necessary.

24. SUBMITTAL INSTRUCTIONS

Submit this GW-1 within 30 days of well completion per the following:

24a. For All Wells: Original form to Division of Water Resources (DWR), Information Processing Unit, 1617 MSC, Raleigh, NC 27699-1617

24b. For Injection Wells: Copy to DWR, Underground Injection Control (IUC) Program, 1636 MSC, Raleigh, NC 27699-1636

24c. For Water Supply and Open-Loop Geothermal Return Wells: Copy to the county environmental health department of the county where installed

24d. For Water Wells producing over 100,000 GPD: Copy to DWR, CCPCUA Permit Program, 1611 MSC, Raleigh, NC 27699-1611

Photo Log
Tarheel Army Missile Plant ■ Burlington, NC
Date ■ Terracon Project No. 7521P145

Insert Photo Here

Photo #1 Location of picture

Insert Photo Here

Photo #2 Location of picture

Insert Photo Here

Photo #3 Location of picture

Insert Photo Here

Photo #4 Location of picture

Insert Photo Here

Photo #5 Location of picture

Insert Photo Here

Photo #6 Location of picture

Billing Information:

Report to:

Email To:

Project Description:

City/State Collected:

Please Circle: PT MT CT ET

Phone:

Client Project #

Lab Project #

Collected by (print):

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ____ Y ____

Rush? (Lab MUST Be Notified)

____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day

Quote #

Date Results Needed

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG #

Table #

Acctnum:

Template:

Prelogin:

PM:

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs											Remarks	Sample # (lab only)

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist

COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: Condition: NCF / OK

E.NC03

SOIL SAMPLING

LAST REVIEW: July 2019

GUIDANCE:

- **ASTM E1903-11** *Standard Guide for Environmental Site Assessments: Phase II Environmental Site Assessment Process*.
- **ASTM D2487-17** *Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System)*.
- U.S. Environmental Protection Agency, Region 4, 2020. *Soil Sampling, ID: LSASDPROC-300-R4.* June 11.

Sufficient sample will be collected for the analysis that will be performed as prescribed by the project documents. Soil descriptions will be completed for each collected soil sample using the general terminology of the unified soil classification system (ASTM D2487). Descriptions shall be recorded in field books and/or field logs.

1. SOIL SAMPLING OBJECTIVES AND METHODS

Continuous soil core sampling will be conducted by DPT methods and/or hand auger methods. Each soil boring location will have soil collected at multiple depths for field screening and potential laboratory analyses. Soil will be collected at two-foot intervals for visual inspection and screening. Samples submitted for VOC analyses will be collected from a minimum depth of 0.5 feet bls (i.e., not surface samples). Soil samples will not be collected below the water table. Soils will be field screened for total VOCs and for total chlorinated ethenes using a PID (SOP E.0552 Field Headspace Screening - Soil - Photoionization Detector) and/or ColorTec™ colorimetric testing methods, respectively, to assist with sample selection for laboratory analyses.

2. EQUIPMENT

a) Surface Soil Sampling Equipment

- Hand Augers (multiple size stainless steel buckets)
- Power Auger (if required for 2+ foot depth
- Stainless steel trowels
- Shovels (to remove gravel and debris
- Plastic sheeting and/or aluminum foil
- Decontamination equipment as required
- Hand tools (for equipment or other needs)
- Camera (Digital) or Cell Phone

- Watch
- Field Screening Equipment (Photo Ionization Detector [PID], Flame Ionization Detector [FID], etc.)
- Labels
- Cooler
- Field log book
- Soils Data form, Daily QC form, etc.
- Site Safety and Health Plan
- Appropriate sample bottles
- Plastic bags (sealable)
- Compass
- Measuring tape or wheel

b) Subsurface Soil Sampling Equipment

- Drill rig and equipment
- Stainless steel split spoon
- Shelby tubes
- Photoionization detector
- Indelible pens
- Cooler and ice
- Plastic sheeting and/or aluminum foil
- Measuring tape or measuring wheel
- Field screening equipment (PID, FID, etc.)
- Sample containers – chemical and geotechnical analysis
- Decontamination equipment (as necessary)
- Boring log form, etc.
- Ziploc® baggies
- Compass
- Watch
- Camera (Digital or film); or Cell Phone

3. DOCUMENTATION

Lithological logging

The lithology of the sample along with any other pertinent information shall be logged by an environmental consultant. Particular consideration should be given to grain-size distribution (relative percentages of different size materials), presence of lamination or layering and soil consistency, and presence of contamination (PID measurements, odor, and staining). Estimate the mineralogy for coarser grained material. Classify soil samples and enter onto the boring log using the Unified Soil Classification System (USCS), following methods outlined in ASTM standard D 2488 (American Society for Testing and Materials, 1984b). Prepare the final boring log using observations of the driller and on-site Geologist/Engineer/Environmental Scientist and from laboratory analysis.

Sample Documentation

Collected soil samples should be documented in the lithologic log, field logbook, and laboratory chain-of-custody form in accordance with SOP E.0018 and E.0026. Specifically, sample depth, collection time, and requested analyses should be recorded.

4. PERSONAL PROTECTIVE EQUIPMENT

a) Wear and maintain Terracon-approved PPE at project sites and in laboratories as required by project, task, and/or work environment, except when in a PPE-Free Zone. This includes use of the Core PPE Kit.

b) Wear disposable nitrile or other chemical resistant gloves at all times.

c) Monitor volatile organic concentrations in work vicinity with a PID.

d) Don't try to account for unusual or special health and safety situations. Unusual or special health and safety situations should be addressed by the Health and Safety Plan and the Project Manager.

e) Also note sample container preservative and cautions (e.g., "Caution: the 40-milliliter vials contain acid").

5. PROCEDURES

a) Surface Soil Procedures

Select the location. Identify it with a unique designation for the project. Diagram or otherwise describe the location on forms or in the logbook relative to a fixed benchmark that will allow the specific location to be re-visited in the future, if necessary. If appropriate, estimate the depth of the sample and record.

Surficial soil samples shall be collected as follows. Vegetation at the sample location is removed by cutting or scraping away with a stainless-steel trowel. While drilling the hole, remove gravel or other debris before obtaining the sample. Advance the auger or trowel to a depth of approximately six inches and then remove from the hole. Using pre-cleaned stainless-steel equipment, extrude the soil directly into the sampling containers or plastic bags for screening purposes. If dedicated sampling equipment is not used, sampling equipment must be decontaminated before collecting another sample. See SOP E.2410 for details on Sampling Equipment Decontamination.

Samples for VOC analysis must be collected first. Fill VOC sample containers as full as possible to minimize headspace losses. Fill separate containers with a sufficient quantity of soil for analyses of other required parameters. Immediately place the samples on ice at 4ºC. Enter all data into a permanent field log book. Describe soil samples as indicated below in Section 3.0, Lithologic Logging. See SOP E.0468 for details on Sample Preservation, Storage, Handling and Documentation.

b) Subsurface Soil Procedures

i) Methods

Subsurface soil samples can be obtained by several methods depending on the type of samples required and the soil conditions. The usual methods are to collect samples using a 2.5 to 3-inch diameter, 2.5 to 5 feet long, continuous-drive, split-barrel sampler, which is advanced with the augers during drilling or using a 1.5 to 2-inch diameter, 5-foot long, plastic-lined steel barrel which is advanced via direct-push technology. These techniques have several advantages, the primary one being good sample recovery over a large interval, and accuracy in that cuttings are less likely to be included in the sample than in other methods. Disturbance to the soil is minimal so that subtle structures such as laminations or voids are less likely to be destroyed and geologic contacts are more readily observed and logged. In loose soil and/or where large debris or cobbles impede the progress of the sampler, sample recovery with a continuous sampler may be poor and a different sampling technique may be used.

When continuous drive sampling is not practical, a 24-inch stainless steel split-barrel sampler can be driven a total of 24 inches into the undisturbed materials by dropping a 140-lb weight 30 inches. A 3-inch diameter split spoon may be used to increase the chances of sufficient volume recovery for sampling purposes. Record in 6-inch increments the number of blows required to drive the sampler, if required. Indicate these data along with the amount of sample recovery in the drilling log. In the event of poor sample recovery, the consultant may elect to offset within 10 feet to obtain the missing sample interval. Note on the boring log if the offset boring is unsuccessful.

At times where samples are required from shallow depths (less than 10 feet) it may be more feasible to collect samples using a hand auger. In this case a clean, 3.25-inch diameter hand auger shall be advanced to the top of the desired sample interval. After collection, place the sample in a plastic bag or in a laboratory-cleaned glass container and labeled accordingly. Samples for VOC analysis must be collected first to minimize potential loss of volatiles. Between each use, decontaminate sampling equipment in accordance with SOP E.2410

ii) Sample collection procedures

a. Field screening samples

Soil samples should be collected for field screening at minimum every two and one-half feet, or at zones of obvious contamination, and at the water table. Perform the field screening in accordance with the SOP E.0552. Note the field screening results on the boring log.

b. Laboratory samples

After collecting the field screening samples, collect soil samples for laboratory analysis. Samples for VOC analysis must be collected first to minimize potential loss of volatiles. Place VOC soil samples in a suitable container. Fill sample containers as full as possible to prevent headspace degradation of VOC. Properly label the container and immediately place the sample into coolers packed with ice to maintain a temperature of less than 4ºC. When the headspace screening is complete for each boring, the laboratory sample that corresponds to the highest headspace sample is selected for laboratory analysis. If field screening showed no elevated headspace readings, the sample collected from at or just above the water table should be submitted for analysis. In some instances, it may be necessary to submit the samples from both the water table and the highest headspace reading or other intervals as determined by the Project Manager. The location of samples submitted for laboratory analysis should be selected to provide the information necessary to evaluate the exposure pathways.

Sample containers for VOC analysis should be stored together in coolers separate from containers for other analytical parameters. See SOP E.0468 for details on sample preservation, storage, handling, and documentation.

6. ABANDONMENT

- Soil boreholes will be abandoned with cement grout or hydrated bentonite pellets after sampling completion.

7. TRAINING AND CERTIFICATION

- Completed 40-Hour OSHA 1910.120 HAZWOPER training, inclusive of respiratory protection, and a current certificate of annual 8-Hour OSHA 1910.120 HAZWOPER Refresher Training is required for all personnel handling media contaminated by hazardous substances.

E.NC04

Bedrock Coring

LAST REVIEW: September 2021

GUIDANCE:

- **ASTM D6032/6032M – 17**. Standard Test Method for Determining Rock Quality Designation (RQD) of Rock Core.
- U.S. Environmental Protection Agency, Region 4, 2018. *Design and Installation of Monitoring Wells, ID: SESDGUID-101-R2*. January 16.

1. OBJECTIVE AND BACKGROUND

To provide standard procedure for drilling and soil sampling collection using equipment and techniques of the current industry. This procedure is applicable to drilling into consolidated bedrock. Bedrock coring involves the advancement of a rotary diamond core barrel into bedrock accompanied by a drilling fluid such as water or viscous high-gel strength muds. Following advancement, the core barrel is then removed from the hole, taken apart, and the bedrock core removed. Coring is desirable in some cases, such as Type III well installations that require an outer casing and for continuous collection of representative samples.

2. EQUIPMENT

Drilling equipment will be commercially-made and sufficient to the needs of the project. Supporting tools and accessories will be as specified by the manufacturer or a generic equivalent approved by the Drilling Coordinator or Equipment Manager.

Decontamination of equipment and handling and storage of hazardous waste is required. Reference SOP E. 2235, E.2410, E.2420 for specific equipment and procedures.

3. DOCUMENTATION

a) A lithologic/boring log classifying soil and/or rock type observed should be completed for each boring. The angle of joints and fractures in the sample should be noted. When rock coring, Rock Quality Designation (RQD) logging techniques will be used to assess the quality of the bedrock for each core sample. RQD will be calculated following ASTM D6032/D6032M-17.

b) A GW-1 form should be completed and submitted to the North Carolina Department of Environmental Quality Division of Water Resources for each monitoring well installed in a boring in accordance with 15A North Carolina Administrative Code Subchapter 02C.

4. PERSONAL PROTECTIVE EQUIPMENT

a) Wear and maintain Terracon-approved PPE at project sites and in laboratories as required by project, task, and/or work environment, except when in a PPE-Free Zone. This includes use of the Core PPE Kit.

b) Wear chemical resistant gloves when handling investigative derived waste.

c) Don't try to account for unusual or special health and safety situations. Unusual or special health and safety situations should be addressed by the Health and Safety Plan and the Project Manager.

5. PROCEDURES

The field procedures for operating the drilling equipment will be as specified by the manufacturer for the equipment.

The application of the procedure for design will be by the Project Manager using as guidance ASTM D2113 - 14. Consistent with Section 1.6 of the standard the guidance is not intended to replace education or experience and will be used in conjunction with professional judgment.

Monitoring wells should be constructed in accordance with 15A North Carolina Administrative Code Subchapter 02C. Outer casing should be installed if borings are advanced into bedrock to avoid contamination from overlying unconsolidated material entering the bedrock aquifer.

6. TRAINING AND CERTIFICATION

The drill operator and drill helper will have entered and be current in the following;

- Industry drilling experience no less than 3 years for operator, 1 year for helper.
- Enrolled in Terracon's medical monitoring program for environmental operations (if employed by Terracon).
- Completed 40-Hour OSHA 1910.120 HAZWOPER training, inclusive of respiratory protection.
- Current certificate of annual 8-Hour OSHA 1910.120 HAZWOPER Refresher Training

- Knowledge and experience in drilling both vadose and saturated soils.
- Completed Terracon's internal Drilling Education classes (if employed by Terracon):
    - Driller Ergonomics Part 1 & 2
    - Exploration Team Safety Process
    - Exploration: An IIF Testimonial
    - PPE for Exploration
    - Project Execution and Situational Awareness
    - Utility Locates
    - Terracon Life Savings Absolutes
- Be licensed as applicable by state and/or local licensing agency.
- Knowledge and experience in the operation and maintenance of the specified equipment.
- If the drill operator and drill helper(s) are subcontractor employees, equivalent training and medical monitoring will be required.

E.NC05

Permanent Monitoring Well Installation

LAST REVIEW: September 2021

GUIDANCE:

- **ASTM D5092/D5092M - 16**. *Standard Practice for Design and Installation of Groundwater Monitoring Wells.*
- U.S. Environmental Protection Agency, Region 4, 2018. *Design and Installation of Monitoring Wells, ID: SESDGUID-101-R2*. January 16.

1. OBJECTIVE AND BACKGROUND

To provide standard procedures for the design and installation of routine monitoring wells that will result in reliable construction and provide for the collection of representative groundwater samples. The standard practice for design and installation of monitoring wells is contained in ASTM D5092/D5092M – 16 "Standard Practice for Design and Installation of Groundwater Monitoring Wells." Terracon procedures incorporate the provisions of ASTM D 5092 which describe the specific procedures to be used in installing monitoring wells in unconsolidated formations. The ASTM standard should be referred to when installation of monitoring wells is required outside of the routine monitoring wells described here.

2. EQUIPMENT

The augers required for 2-inch diameter monitoring wells are 4-1/4-inch inside diameter hollow stem augers. For 4-inch wells the 6-1/4-inch inside diameter hollow stem augers are recommended. Flight augers are not recommended for installation of monitoring wells unless aquifer conditions are well known and will allow installation of screen and riser pipe without formation cave-in.

Other drilling equipment may be needed based on the lithology and advancement method required. These methods include air rotary drilling and rock coring. Refer to Terracon SOPs E.0320, E.0340, or E.NC04 for guidance on auger, air, or rock coring drilling techniques.

3. DOCUMENTATION

a) A field boring log and monitoring well construction sheet should be completed for each monitoring well. Details of the monitoring well construction should also be recorded in the field logbook.

b) A GW-1 form should be completed and submitted to the North Carolina Department of Environmental Quality Division of Water Resources for each monitoring well installed in a boring in accordance with 15A North Carolina Administrative Code Subchapter 02C.

4. PERSONAL PROTECTIVE EQUIPMENT

a) Wear and maintain Terracon-approved PPE at project sites and in laboratories as required by project, task, and/or work environment, except when in a PPE-Free Zone. This includes use of the Core PPE Kit.

b) Wear chemical resistant gloves when handling investigative derived waste.

c) Don't try to account for unusual or special health and safety situations. Unusual or special health and safety situations should be addressed by the Health and Safety Plan and the Project Manager.

5. PROCEDURES

Monitoring wells should be constructed in accordance with 15A North Carolina Administrative Code Subchapter 02C. Outer casing should be installed if borings are advanced into bedrock to avoid contamination from overlying unconsolidated material entering the bedrock aquifer.

The following describes typical monitoring well installation procedures and materials:

1. **Riser pipe**: The rise pipe used is threaded, flush-jointed Tri-Loc (or equivalent) Schedule 40 PVC pipe. This riser pipe has been found to provide a reliable and durable well.
2. **Screen**: Slot openings generally used for monitoring wells are 0.010 and 0.020 inch. The slot opening commonly used is 0.010 which will be effective with the use of gravel pack #20-40. If a larger slot opening is desire (0.20), a gravel pack of #10-20 is recommended.
3. **Gravel pack**: The standard gravel pack used is graded as #20-40 which is suited for use with a slot size of 0.010 inches. Gravel pack should extend approximately two feet above the slotted screen. Gravel pack grading should be specified by project manager.
4. **Bentonite**: Bentonite pellets (1/4-inch size) are used to provide a relatively impermeable layer above the screen and gravel pack. One 5-gallon bucket of bentonite pellets should provide a two-foot layer in the annulus of a boring created with 4-1/4-inch inside diameter augers and containing 2-inch monitoring well pipe.

Bentonite should be added to the borehole in an approximate 3-foot layer above the top of the gravel pack.

5. **Grout**: Grout should be mixed to the manufacturer-specified consistency and applied to the borehole from the top of the bentonite layer to the land surface.
6. **Well security**: The well should be secured in accordance with the project manager's instructions. The proper well security materials used in completing the top of a monitoring well should be specified by the project manager and based on the expected ground surface use, regulatory requirements, and client desires. Depending on the well completion type, the cover or cap will be locked.

Monitoring wells should be constructed in accordance with 15A North Carolina Administrative Code Subchapter 02C. Outer casing should be installed if borings are advanced into bedrock to avoid contamination from overlying unconsolidated material entering the bedrock aquifer.

6. TRAINING AND CERTIFICATION

The drill operator and drill helper will have entered and be current in the following;

- Industry drilling experience no less than 3 years for operator, 1 year for helper.
- Enrolled in Terracon's medical monitoring program for environmental operations (if employed by Terracon).
- Completed 40-Hour OSHA 1910.120 HAZWOPER training, inclusive of respiratory protection.
- Current certificate of annual 8-Hour OSHA 1910.120 HAZWOPER Refresher Training
- Knowledge and experience in drilling both vadose and saturated soils.
- Completed Terracon's internal Drilling Education classes (if employed by Terracon):
    - Driller Ergonomics Part 1 & 2
    - Exploration Team Safety Process
    - Exploration: An IIF Testimonial
    - PPE for Exploration
    - Project Execution and Situational Awareness
    - Utility Locates
    - Terracon Life Savings Absolutes
- Be licensed as applicable by state and/or local licensing agency.

- Knowledge and experience in the operation and maintenance of the specified equipment.
- If the drill operator and drill helper(s) are subcontractor employees, equivalent training and medical monitoring will be required.

E.NC06

Temporary Monitoring Well Installation

LAST REVIEW: September 2021

GUIDANCE:

- **ASTM D5092/D5092M - 16**. *Standard Practice for Design and Installation of Groundwater Monitoring Wells.*
- U.S. Environmental Protection Agency, Region 4, 2018. *Design and Installation of Monitoring Wells, ID: SESDGUID-101-R2*. January 16.

1. OBJECTIVE AND BACKGROUND

To provide standard procedures for the design and installation of routine monitoring wells that will result in reliable construction and provide for the collection of representative groundwater samples. The standard practice for design and installation of monitoring wells is contained in ASTM D5092/D5092M – 16 "Standard Practice for Design and Installation of Groundwater Monitoring Wells." Terracon procedures incorporate the provisions of ASTM D 5092 which describe the specific procedures to be used in installing monitoring wells in unconsolidated formations. The ASTM standard should be referred to when installation of monitoring wells is required outside of the routine monitoring wells described here.

2. EQUIPMENT

The augers required for 2-inch diameter monitoring wells are 4-1/4-inch inside diameter hollow stem augers. For 4-inch wells the 6-1/4-inch inside diameter hollow stem augers are recommended. Flight augers are not recommended for installation of monitoring wells unless aquifer conditions are well known and will allow installation of screen and riser pipe without formation cave-in.

Other drilling equipment may be needed based on the lithology and advancement method required. These methods include air rotary drilling and rock coring. Refer to TSOPs E.0320, E0340, or E.NC04 for guidance on auger, air, or rock coring drilling techniques.

3. DOCUMENTATION

a) A field boring log and monitoring well construction sheet should be completed for each monitoring well. Details of the monitoring well construction should also be recorded in the field logbook.

4. PERSONAL PROTECTIVE EQUIPMENT

a) Wear and maintain Terracon-approved PPE at project sites and in laboratories as required by project, task, and/or work environment, except when in a PPE-Free Zone. This includes use of the Core PPE Kit.

b) Wear chemical resistant gloves when handling investigative derived waste.

c) Don't try to account for unusual or special health and safety situations. Unusual or special health and safety situations should be addressed by the Health and Safety Plan and the Project Manager.

5. PROCEDURES

The following describes typical monitoring well installation procedures and materials:

1. **Riser pipe**: The rise pipe used is threaded, flush-jointed Tri-Loc (or equivalent) Schedule 40 PVC pipe. This riser pipe has been found to provide a reliable and durable well.
2. **Screen**: Slot openings generally used for monitoring wells are 0.010 and 0.020 inch. The slot opening commonly used is 0.010 which will be effective with the use of gravel pack #20-40. If a larger slot opening is desire (0.20), a gravel pack of #10-20 is recommended. The riser pipe is connected to the screen pipe.
3. **Gravel pack**: The standard gravel pack used is graded as #20-40 which is suited for use with a slot size of 0.010 inches. Gravel pack should extend approximately two feet above the slotted screen. Gravel pack grading should be specified by project manager.
4. **Bentonite**: Bentonite pellets (1/4-inch size) are used to provide a relatively impermeable layer above the screen and gravel pack. One 5-gallon bucket of bentonite pellets should provide a two-foot layer in the annulus of a boring created with 4-1/4-inch inside diameter augers and containing 2-inch monitoring well pipe. Bentonite should be added to the borehole in an approximate 3-foot layer above the top of the gravel pack.
5. **Well security**: The well should be secured in accordance with the project manager's instructions. The proper well security materials used in completing the top of a monitoring well should be specified by the project manager and based on the expected ground surface use, regulatory requirements, and client desires. Open annular space around the riser pipe should be covered or filled with bentonite to prevent potential fall injuries.

6. **Abandonment**: Monitoring wells should be constructed and abandoned in accordance with 15A North Carolina Administrative Code Subchapter 02C. Temporary monitoring wells should be abandoned as soon as possible based on the project needs.

6. TRAINING AND CERTIFICATION

The drill operator and drill helper will have entered and be current in the following;

- Industry drilling experience no less than 3 years for operator, 1 year for helper.
- Enrolled in Terracon's medical monitoring program for environmental operations (if employed by Terracon).
- Completed 40-Hour OSHA 1910.120 HAZWOPER training, inclusive of respiratory protection.
- Current certificate of annual 8-Hour OSHA 1910.120 HAZWOPER Refresher Training
- Knowledge and experience in drilling both vadose and saturated soils.
- Completed Terracon's internal Drilling Education classes (if employed by Terracon):
    - Driller Ergonomics Part 1 & 2
    - Exploration Team Safety Process
    - Exploration: An IIF Testimonial
    - PPE for Exploration
    - Project Execution and Situational Awareness
    - Utility Locates
    - Terracon Life Savings Absolutes
- Be licensed as applicable by state and/or local licensing agency.
- Knowledge and experience in the operation and maintenance of the specified equipment.
- If the drill operator and drill helper(s) are subcontractor employees, equivalent training and medical monitoring will be required.

E.NC07

Field Equipment Calibration

LAST REVIEW: September 2021

GUIDANCE:

- **ASTM E1903-11** *Standard Guide for Environmental Site Assessments: Phase II Environmental Site Assessment Process*.
- **ASTM D2487-17** *Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System)*.
- U.S. Environmental Protection Agency, Region 4, 2020. *Soil Sampling, ID: LSASDPROC-300-R4.* June 11.

1. OBJECTIVE AND BACKGROUND

The purpose of this SOP is to provide guidance during the use and calibration of water quality field instrumentation. Ensuring performance objectives are met for equipment used during data collection will aid in obtaining samples representative of the target groundwater aquifer and recording reliable field parameter data that is reproducible and comparable to existing data sets. Rental equipment maybe calibration checked prior to use, and only calibrated when calibration checks are outside acceptable limits for the instrument. Rental equipment utilized over longer field events may require calibration in the field or re-servicing by the vendor. Inform your PM of equipment malfunctions and if equipment fails to calibrate.

2. EQUIPMENT

- Appropriate PPE including disposable chemical resistant gloves;
- Water quality parameter instrument (e.g. YSI 556 MPS) with calibration cup
- Turbidity meter
- Calibration standards
    - pH 4, pH 7, pH 10
    - Specific conductivity (1.413 mS/cm solution)
    - Oxidation reduction potential (ORP) solution (240.0 mV ORP)
    - Distilled water for dissolved oxygen (DO) calibration
    - Turbidity standards (10 NTU, 20 NTU, 100 NTU, and 800 NTU)
- Distilled or deionized water
- Rinse cup
- Field logbook
- Indelible ink pens

- Paper towels

3. DOCUMENTATION

Calibration Logging

Calibration of the water parameter field instrumentation should be recorded in the field logbook or a separate calibration log. The calibration standard should be listed followed by the pre-calibration value reading and the post-calibration value reading.

Field Parameter Measurement

Parameters measured by the water parameter field instrumentation during monitoring well/water supply well purging or surface water collection should be recorded on the applicable sampling logs. See Terracon SOPs E.1400 and E.2000 for more details regarding the recording of water parameter measurements.

4. PERSONAL PROTECTIVE EQUIPMENT

a) Wear and maintain Terracon-approved PPE at project sites and in laboratories as required by project, task, and/or work environment, except when in a PPE-Free Zone. This includes use of the Core PPE Kit.

b) Wear disposable nitrile or other chemical resistant gloves at all times.

c) Don't try to account for unusual or special health and safety situations. Unusual or special health and safety situations should be addressed by the Health and Safety Plan and the Project Manager.

5. PROCEDURES

pH

Install the pH sensor onto the meter (brand and location may vary); locate the pins of the pH sensor and push firmly into the meter. Remove the sensor wetting cap and slide the vent sleeve to expose the fill hole. Rinse the probe with DI water and dry before placing the calibration fluid. Perform a 3-point calibration.

1. Place the sensor in the calibrating medium (pH 4 buffer).

2. Press cal – cal 1 is displayed. After endpointing the display automatically updates to the calibrated value shown, or the temperature compensated value.

3. Rinse the probe with DI water, dry, and place the sensor in the second calibrating medium (pH 7).

4. Press cal – cal 2 is displayed. After endpointing the display automatically updates to the calibrated value shown, or the temperature compensated value.

5. Rinse the probe with DI water, dry, and place the sensor in the second calibrating medium (pH 10).

6. Press cal – cal 3 is displayed. After endpointing the display automatically updates to the calibrated value shown, or the temperature compensated value.

For each water sample to be screened for pH, place a small amount of sample in a sterile container or clean zip top bag. Place the sensor into the sample. Automatic endpoint detection freezes the display when plateau is reached.

Conductivity

Install the conductivity sensor onto the meter (brand and location may vary); locate the pins of the pH sensor and push firmly into the meter. Remove the sensor wetting cap and slide the vent sleeve to expose the fill hole. Rinse the probe with DI water and dry before placing the calibration fluid. Perform a 1-point calibration.

1. Place the sensor in the calibrating medium (1.413 mS/cm solution)

2. Press cal – cal 1 is displayed. After endpointing the display automatically updates to the calibrated value shown, or the temperature compensated value.

For each water sample to be screened for conductivity, place a small amount of sample in a sterile container or clean zip top bag. Place the sensor into the sample. Automatic endpoint detection freezes the display when plateau is reached.

Oxidation Reduction Potential (ORP)

Install the conductivity sensor onto the meter (brand and location may vary); locate the pins of the pH sensor and push firmly into the meter. Remove the sensor wetting cap and slide the vent sleeve to expose the fill hole. Rinse the probe with DI water and dry before placing the calibration fluid. Perform a 1-point calibration.

1. Place the sensor in the calibrating medium (240.0 mV ORP)

2. Press cal – cal 1 is displayed. After endpointing the display automatically updates to the calibrated value shown, or the temperature compensated value.

For each water sample to be screened for conductivity, place a small amount of sample in a sterile container or clean zip top bag. Place the sensor into the sample. Automatic endpoint detection freezes the display when plateau is reached.

Dissolved Oxygen (DO)

Set the sonde into the calibration cup with approximately 1/8 inch of water - do not allow water to contact the membrane. You may also use the wet-towel method. Allow the sonde to site in the saturated environment for at least 10 minutes before the DO calibration can begin. Calibrate the sonde in percent DO. Press enter when done calibrating to begin sampling.

Turbidity

Ensure the turbidimeter is fully charged, and the cover seals over the sample receptacle. Ensure the meter is clean and do not calibrate if dirt or debris are in the sample receptacle without first cleaning the instrument per manufactures instructions. Perform a 3-point calibration.

1. Place the first calibrating medium (10 NTU) in the meter and close the cover so no light is entering.

2. Press cal – cal 1 is displayed. After endpointing the display automatically updates to the calibrated value shown.

3. Place the second calibrating medium (20 NTU) in the meter and close the cover so no light is entering.

4. Press cal – cal 2 is displayed. After endpointing the display automatically updates to the calibrated value shown.

5. Place the second calibrating medium (100 NTU) in the meter and close the cover so no light is entering.

6. Press cal – cal 3 is displayed. After endpointing the display automatically updates to the calibrated value shown.

Always use the glass sampling vial with a black cap for sample readings to ensure accuracy. Only utilize the 800 NTU calibration fluid for knowing turbid waters such as surface water or wastewater. For groundwater sampling use the calibration standards that offer the lowest values as provided by the manufacture.

6. TRAINING AND CERTIFICATION

- Completed 40-Hour OSHA 1910.120 HAZWOPER training, inclusive of respiratory protection, and a current certificate of annual 8-Hour OSHA 1910.120 HAZWOPER Refresher Training is required for all personnel handling media contaminated by hazardous substances.

Monitoring wells should be constructed and abandoned in accordance with 15A North Carolina Administrative Code Subchapter 02C. Temporary monitoring wells should be abandoned as soon as possible based on the project needs.

6. TRAINING AND CERTIFICATION

The drill operator and drill helper will have entered and be current in the following;

- Industry drilling experience no less than 3 years for operator, 1 year for helper.
- Enrolled in Terracon's medical monitoring program for environmental operations (if employed by Terracon).
- Completed 40-Hour OSHA 1910.120 HAZWOPER training, inclusive of respiratory protection.
- Current certificate of annual 8-Hour OSHA 1910.120 HAZWOPER Refresher Training
- Knowledge and experience in drilling both vadose and saturated soils.
- Completed Terracon's internal Drilling Education classes (if employed by Terracon):
    - Driller Ergonomics Part 1 & 2
    - Exploration Team Safety Process
    - Exploration: An IIF Testimonial
    - PPE for Exploration
    - Project Execution and Situational Awareness
    - Utility Locates
    - Terracon Life Savings Absolutes
- Be licensed as applicable by state and/or local licensing agency.
- Knowledge and experience in the operation and maintenance of the specified equipment.
- If the drill operator and drill helper(s) are subcontractor employees, equivalent training and medical monitoring will be required.

Method Procedures Manual

Field-Based Analysis of Chlorinated Volatile Organic Halocarbons

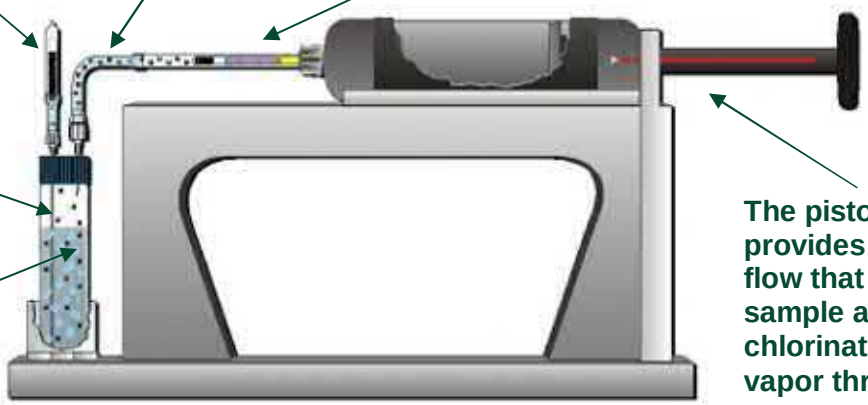
- **AQR Color-Tec combines sample purging with direct-read gas detector tubes to quickly detect low-levels of chlorinated compounds in liquid and solid samples.**
- **AQR Color-Tec detects concentrations of total chlorinated volatile organic halocarbons (CVOHs) below 3 µg/L in water and 3 µg/Kg in soil samples.**
- **AQR Color-Tec provides fast, low-level, economical, decision-quality data which maximizes sampling frequency and sampling coverage to locate source areas and delineate dissolved-phase contaminant plumes.**
- **Samples are analyzed by purging the volatile compounds from either liquid or solid samples through a colorimetric detector tube, which produces a distinct color change when exposed to any chlorinated compound.**

2 Ambient air enters the sample through a carbon filter

5 The purged chlorinated volatile compounds are directed into the gas detector tube

6 A measured color change in the colorimetric tube is used to estimate the expected concentration of CVOHs in the sample

3 Filtered ambient air flows through the long purge needle to the bottom of the VOA vial



4 Ambient air purges and strips volatile compounds from the sample

1 The piston-pump provides vacuum air flow that purges the sample and pulls the chlorinated volatile vapor through the tube

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AQR Color-Tec® Contact and Ordering Information

- **For more information visit www.aqrcolor-tec.com**
- **For kit orders contact Phil Pecevich at 919-918-7191**

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1.0 Method History and Principles

The Color-Tec method was developed during 1997 by the environmental professionals at Ecology and Environment, Inc. while assessing/remediating the earliest sites addressed under the Florida Department of Environmental Protection's (FDEP) Drycleaning Solvent Cleanup Program. Since its development, the method has been used extensively at EPA, DOD, and various state regulatory agency sites to provide real-time, decision quality data at thousands of chlorinated solvent sites.

Color-Tec is a field-based analytical method which combines the use of colorimetric gas detector tubes (originally designed for occupational breathing-zone monitoring) with sample purging to detect very low (<3 µg/L or µg/Kg) concentrations of total chlorinated volatile organic halocarbons (CVOHs) in liquid and solid samples. Samples are analyzed by purging the volatile compounds from a groundwater or soil sample directly through the colorimetric tube, which is designed to produce a distinct color change when exposed to chlorinated compounds. Estimated sample concentrations are obtained by comparing the tube readings to a conversion table, which was developed based on comparison of Color-Tec readings to GC/MS analysis of split samples.

Each colorimetric tube contains an oxidizer (PbO_2) and a catalyst (H_2SO_4) which decomposes and converts the chlorinated compounds to hydrogen chloride, which discolors a reagent (4-phenylazodiphenylamine) in the tube from yellow to purple. The reaction formula provided by Gastec® for the PCE tube is as follows:

$$Cl_2C{:}CCl_2 + PbO_2 + H_2SO_4 \rightarrow HCl$$
$$HCl + \text{(4-Phenolazo) Diphenylamine} \rightarrow \text{Chloride}$$

The colorimetric tubes react positively to all chlorinated volatile organic halocarbons, including saturated and unsaturated chlorinated alkenes and alkanes. The total response indicated by the detector tube (the distance that the color change travels through the tube) reflects the sum of the concentration of each individual chlorinated compound present in the sample. The method is primarily qualitative (detects the presence/absence of a compound or class of compounds).

The colorimetric gas detector tubes used in the method are designed to detect CVOHs in ambient air. **Color-Tec is an alternate use of these tubes**, which purges CVOHs from a water or soil sample and concentrates them into the colorimetric tube. When using colorimetric tubes for the Color-Tec method, the units (ppmV) printed on the tubes do not directly reflect the quantity of CVOHs present in the water or soil sample being analyzed. The Color-Tec tube reading (the distance that the color change travels through the tube) is a **relative response** to the amount of chlorinated-compound molecules that have been purged from the sample and directed into the tube. Therefore, the Color-Tec tube reading is a **unit-less** value used only to record the **relative response** for each analysis in order to facilitate comparison of that response to laboratory GC/MS analysis.

THE COLOR-TEC TUBE READING IS NOT THE SAMPLE CONCENTRATION!

The tube reading is a unit-less value which must be compared to laboratory results from split samples in order to yield an estimate of the actual concentration present in the sample.

This manual provides a conversion table, developed using comparison of Color-Tec tube responses to split-sample GC/MS analyses conducted on thousands of samples, which can be used to provide an estimate of the expected sample concentration based on the tube reading (See Table 2 on page 15).

2.0 AQR Color-Tec Test Kit Description and Set-up

The Color-Tec Chlorinated VOH Soil/Water Test Kit System consists of two primary components:

1. A hardware kit which contains all **reusable equipment** needed to conduct the method, plus a carrying case; and
2. Expendables kits containing all **disposable components** needed for analysis of 20 water or soil samples using the following ranges of Gastec® 133-series tubes:
   a. Ultra low range 133-LL tubes (expected detection range ~ 3 to 1200 µg/L or µg/Kg)
   b. Low range 133-L tubes (expected detection range ~ 75 to 25,000 µg/L or µg/Kg)
   c. Medium range 133-M tubes (expected detection range ~ 500 to 130,000 µg/L or µg/Kg)

2.1 Materials Provided

2.1.1 Color-Tec Hardware KIT (See Figure 1)

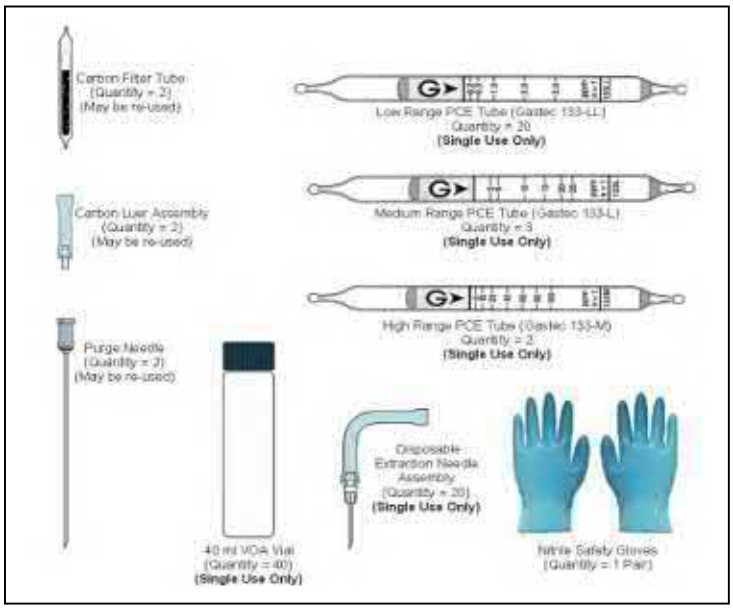
Item	Quantity
Piston pump	1
Color-Tec Pump Stand	1
Hot Plate	1
Stainless Steel Heating Pan	1
VOA Heating Rack	1
Thermometer	1
Decontamination Syringe	1
Pelican® hard case	1

2.1.2 Color-Tec 20-Sample Expendables Pack (See Figure 2) (Analyzes 20 samples)

Item	Quantity
Low-Range (133LL) Colorimetric Detector Tubes	20
Medium-Range (133L) Colorimetric Detector Tubes	3
High-Range (133M) Colorimetric Detector Tubes	2
Disposable Extraction Needle Assemblies **(single use only)**	25
40 Milliliter VOA Vials – empty (for samples)	40
Carbon Filter (may be re-used)	2
Carbon Filter Luer Assembly (may be re-used)	2
Purge Needle (may be re-used)	2
Nitrile Safety Gloves (pair)	1

Figure 1
Hardware Kit

Figure 2
Expendables Kit



2.2 Accessories Supplied by User

The following items (not provided in the AQR Color-Tec kit) are suggested for use with the Color-Tec method to perform the listed functions.

Item	Purpose
Organic-free water	for soil sample extraction and equipment decontamination
Safety gloves	personal protection
Safety glasses	personal protection
120V AC power source	for hot plate
Permanent marker	labeling sample bottles

Performance of the Color-Tec method requires the use of two standard, unpreserved VOA vials per sample. These VOA vials are not included in the standard expendables kits, but may be added as an option. The user may wish to collect a quantity of split samples for laboratory analysis to provide comparison data which may be used to determine site-specific method detection limits and/or to tentatively quantify Color-Tec results. Split sampling will likely require three pre-preserved VOA vials per sample. Pre-preserved VOA vials for split samples are not available in the Color-Tec expendables kits.

2.3 Storage & Stability of Colorimetric Tubes

The Gastec® colorimetric tubes have a shelf-life of two years with refrigeration. Tubes should be stored at or below a temperature of 10°C/50°F when not in use. Colorimetric detector tubes are single-use (one tube per analysis) and should be used immediately after the tips are broken. Tube readings should be recorded immediately following analysis because the intensity of the color-change fades over time. Each box of tubes has an expiration date printed in red ink on the top of each box. When heating the tubes for use with the Color-Tec method, it is recommended that the tube temperature does not exceed 40°C/104° F.

Other procedures and guidelines associated with the use of the tubes for their designed purpose (gas detection in ambient air) are included in the tube manufactures data sheets and tube instructions included in the tube packaging.

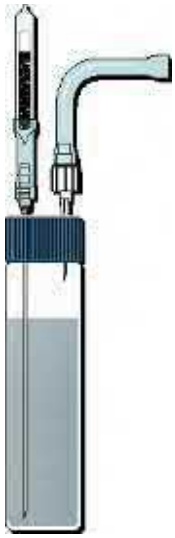
2.4 Heating Colorimetric Tubes and Samples

The colorimetric gas detector tubes used in the Color-Tec method were designed for the purpose of detecting volatile organic compounds (CVOHs) in ambient air. When using the tubes for analysis of ambient air, the calibrated operating temperature is 20°C/68°F. Using the tubes at temperatures above or below 20°C/68°F, for the purpose of testing ambient air, introduces error into the measurements requiring application of correction factors to correct that error. Because Color-Tec is an alternate use of the colorimetric tubes which concentrates CVOHs from water or soil samples into the tubes, the units (ppmV) printed on the tubes have no direct relationship to the quantity of CVOHs dissolved in the water/soil sample being analyzed and the temperature correction factors used for analysis of ambient air are not required when using the colorimetric tubes as part of the Color-Tec method. However, since the colorimetric tubes are more sensitive to the presence of chlorinated compounds at 40°C/104°F, and the purpose of the Color-Tec method is to detect the presence/absence of CVOHs in water at concentrations at the lowest concentrations possible, the tubes are heated to their optimum sensitivity (40°C/104°F) to maximize their detection capability.

The samples are also heated (in the VOA vials) to maximize contaminant volatilization and transfer of CVOHs from the water sample to the colorimetric tube. To heat the samples and colorimetric tubes, a hot plate is used to heat a water bath containing a test tube rack to hold the sample-filled VOA vials and unbroken colorimetric tubes. Special attention must be paid to the temperature of the water to avoid prolonged overheating the samples and tubes. The samples and colorimetric tubes should not be heated in excess of 40°C/104°F.

Given the size of the heating pan and VOA rack, generally only 3 sets of samples are heated at the same time. When a pair of VOAs is removed from the heating rack and placed on the pump stand, it can be replaced with a new pair for heating. After collection, samples should remain in a cool place until ready to be heated and analyzed. It is recommended to avoid heating the samples for more than about 2 minutes to avoid loss of CVOCs. Section 2.6 below, provides detailed water bath set-up and heating procedures.

2.5 Carbon Pre-Filter



Because ambient air is used to purge the samples, a carbon pre-filter is provided for attachment to the purge needle to prevent volatile airborne contaminants from passing through the sample and entering the detector tube during the purging process. To use the carbon pre-filter, break both tips of a carbon filter tube and insert the end of the tube onto the carbon lure assembly (make sure the air-flow arrows on the carbon tube point toward the carbon lure assembly), then tightly insert the male lure fitting on the carbon lure assembly into the female lure fitting on the purge needle (see Figure 2). At sites where little or no ambient air contamination is expected, a single pre-filter tube may be reused for several days. However, at sites where high concentrations of airborne chlorinated compounds are suspected or have been confirmed in the ambient air, the pre-filter tubes may need to be replaced more frequently. For most situations, one carbon filter per 10 samples is more than sufficient. Section 2.6 below, provides detailed carbon filter set-up and use procedures.

2.6 Color-Tec Work-Station Set-up

Pump Stand Set-up

1. Place the pump stand up-right on a flat stable surface.
2. Place the piston-pump into the curved tray on the top of the pump stand as shown.

Corning® Hot Plate Set-up

1. Connect the AC power cord to the back of the hot plate.
2. Connect the other end of the AC power cord to a USA 120VAC electric outlet.
3. Place the hot plate on a flat stable surface.
4. Set the hot plate thermostat control to between dial setting 4 and 5.

Hot Water Bath Set-up

1. Fill the stainless-steel water bath pan with tap water to approximately 1.5-inches from the rim.

2. Insert the VOA rack into the water-filled, stainless-steel, water bath pan.

3. Remove the cap from a 40ml VOA vial, fill the VOA vial with tap water and place it into the VOA Rack as shown. *Note: The bottom of the water-filled VOA vial should be slightly submersed in the water in the stainless-steel pan.*

4. Place the stainless-steel water bath pan onto the heating surface of the hot-plate.

5. Open a box of low-level (133LL) Gastec® tubes and place several tubes into the water-filled VOA vial. Insert the yellow reagent end of the tubes into the bottom of the VOA vial. Note: Do not place tubes with broken tips in the water bath – heating must be accomplished before breaking the tube tips.

6. Turn on the digital thermometer and place the steel probe into the water-filled VOA vial with the colorimetric tubes.

7. Once the water bath reaches a temperature of approximately 100ºF, the colorimetric tubes and VOA vials containing samples can be heated. *Note: The temperature of the water bath should not exceed 100ºF.*

Heating Samples

1. Place both VOA vials containing the sample into the hot water bath for approximately 1 to 2 minutes.

2. Be sure that the VOA vials are tightly sealed before heating. *Note: When properly heated, the VOA vials should feel warm in the hand – DO NOT OPEN VOA VIALS AFTER HEATING.*

Carbon Filter/Purge Needle Set-up

1. Break both ends of a carbon filter tube using the tip breaker on the piston pump.

2. Connect a carbon filter luer assembly to the carbon filter tube by sliding the open end of the vinyl tubing over the broken end of the carbon filter tube. Note: The carbon filter is re-used for multiple purge cycles.

3. Attach the carbon filter assembly to a purge needle by inserting the carbon filter assembly luer fitting into the purge needle luer fitting.

4. The purge needles are re-used after decontamination. Thoroughly clean and rinse the purge needle between each sample analysis to avoid contaminant carryover.

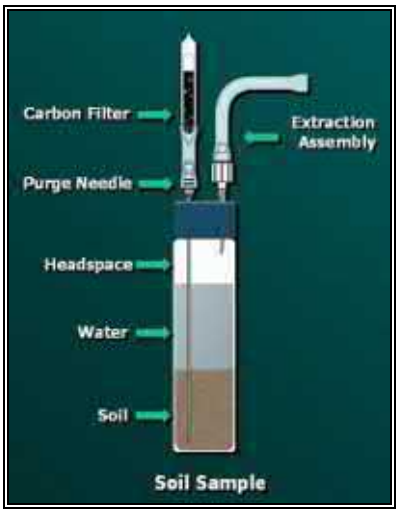
3.0 Sample Collection and Preparation

3.1 Liquid Sample Media

Collect the water or other liquid sample media directly from your sampling device into two 40 ml VOA vials by filling each vial to ~75% capacity (i.e. to about 1-inch below the shoulder of each vial). Tightly secure the caps onto the partially-filled VOA vials. The VOA vials containing the liquid sample to be tested must contain an air-filled headspace to accommodate purging. The caps must be tightened sufficiently to prevent loss of CVOHs during the time between sample collection and analysis (which includes the heating process) and to prevent air leakage during the purging process.

3.2 Solid Sample Media

Place about 1.5 inches of soil (or other solid sample media) into the bottom of each of two VOA vials (i.e. approximately 30 grams in each vial). Immediately after inserting the soil (or other solid sample media) into the two vials, add organic-free or other "clean" water to each VOA vial until they are both ~70 % full (i.e. to approximately 1-inch below the shoulder of each vial). Tightly secure the caps onto the partially-filled VOA vials. Once the caps are secure, shake the VOA vials vigorously for approximately for 5 to 10 seconds to thoroughly mix the soil and water. Additional mixing may be necessary for soil matrices comprised of clay-sized particles. The purpose of the mixing is to transfer any chlorinated compounds suspended in the soil matrix to the water to facilitate more effective purging.



IMPORTANT NOTE: The VOA vials containing the solid sample media and "clean" water must contain an air-filled headspace to accommodate purging. The caps must be tightened sufficiently to prevent loss of CVOHs during the time between sample collection and analysis (which includes the heating process) and to prevent air leakage during the purging process.

3.3 Purpose of the Second VOA Vial

The Color-Tec method is designed for use with two VOA vials (an original and a duplicate) for each sample collected. In certain situations, the duplicate sample may not be used in the performance of the method. However, the duplicate sample should always be collected in the event that it is needed to complete the analysis process. The duplicate sample may be used in either of the following situations:

- When the initial test does not induce a color change in the colorimetric tube, the second VOA vial containing the duplicate sample, may be purged (using the same colorimetric tube) to increase the probability of detecting very low (< 10 µg/L) concentrations.

- When the initial test induces a color change that exceeds the upper limit of the LL tube (a tube reading > 3), the extra VOA vial can be used to analyze the sample using higher range colorimetric tubes (133L or 133M) to tentatively quantify the higher concentration of chlorinated compounds in the sample.

4.0 Sample Analysis Procedure

1. Place both heated VOA vials (original & duplicate sample) into the two VOA holders on the pump-stand.

2. Remove a low-level tube from the hot water bath and wipe it dry.

3. Break both ends of the colorimetric tube using the tip breaker on the piston pump.

4. Insert the colorimetric tube into the pump inlet with the flow arrow (printed on the tube) toward the pump. ***Note:*** *Tube orientation is critical – the yellow reagent end of the tube is inserted in the pump.*

5. Connect a new extraction needle assembly to the colorimetric tube by sliding the open end of the vinyl tubing over the broken end of the colorimetric tube. This step must be completed before inserting the needle into the VOA (Prior to step 6).

6. Remove the protective cap from the extraction needle and insert the needle into the septa of the first VOA vial. ***Note:*** *Be sure that the tip of the extraction needle is positioned within the headspace of the VOA vial (above the water level). Do not insert the extraction needle as far as it will go into the headspace of the VOA vial, but rather only to a point slightly beneath the inside of the septa to reduce the possibility of sample water entering the extraction needle assembly and colorimetric tube during the purging process.*

7. Insert the purge needle (with carbon filter assembly) into the septa of the first VOA vial and push the tip of the needle to the bottom of the VOA vial.
IMPORTANT NOTE: Do not insert the purge needle before completing steps 5 and 6.

8. Align the 50ml label and red dot on the pump handle with the red dot on the pump shaft.

9. Pull the handle sharply until it locks in the 50ml (half pull) position.

10. Confirm that air is purging through the sample in the VOA vial.

11. Purge for approximately 30 seconds.

12. Check the yellow reagent in the tube for a color-change.

13. If no color-change reaction is visible or if the color reading is less than 1.5, rotate the pump handle ½ turn and pull the handle out to lock in the 100ml position.

14. Continue the 100ml purge until the flow cycle is complete. Note: Flow is complete when the end-of-flow indicator (located on the back of the pump handle) returns to its full brightness.

15. Check the yellow reagent phase in the tube for a color change.

16. If no color-change is visible, remove the extraction needle from the VOA with the vinyl tubing still attached to the low-level tube, rotate the pump handle ¼ turn and push the plunger back into the pump, remove the extraction needle from the first VOA vial and inject it into the septa of the second VOA (duplicate sample), then remove the purge needle from the first VOA vial and inject it into the septa of the second VOA (duplicate sample) - now re-pull the pump handle to lock into the 100ml position.

17. When the second 100ml purge cycle is complete, read and record the results.

For samples containing high concentrations (>150 µg/L) the resulting color-change may exceed the calibrated limit of the low-level tube, requiring the second VOA vial (duplicate sample) to be purged and analyzed by repeating steps 3 through 13 using a medium range (133L) or a high range (133M) tube.

For samples containing low (<5 µg/L) concentrations the color change does not usually begin until 100 CCs of air have purged through the sample. Furthermore, the color change induced at these low concentrations is very slight (below 0.5 on the tube scale) and appears as a slight darkening or light purple hue at the entrance of yellow reagent layer in the LL tube. When the sample contains higher concentrations (>10 µg/L) of chlorinated compounds, the resulting color change is an obvious light to dark purple, which propagates through the yellow reagent layer toward the pump end of the colorimetric tube. The tube reading (Color-Tec response) is obtained by matching the linear extent of the discolored reagent inside the tube to the calibration scale printed on the outside of the tube. Table 1 presents a troubleshooting matrix with causes and solutions potential problems.

Important Procedural Notes:

The disposable extraction needle assembly is intended for one use only. Decontamination and re-use of this part is highly discouraged because of the risk of contaminant carryover from the tubing and other plastic parts which can harbor contaminants from the previous analysis. Purge needles may be reused following decontamination using water and isopropanol.

Carbon filters should be discarded if they become wet from contact with sample water.

Never insert the purge needle into the VOA before the extraction needle assembly has first been connected to the colorimetric tube and inserted into the VOA headspace. If the purge needle is inserted first, the pressure inside the sealed VOA may force sample water up though the purge needle and into the carbon filter. Sample volatiles may be lost if the extraction needle assembly is inserted into the VOA headspace before connecting the tubing to the colorimetric tube.

To prevent clogging of the purge needle when inserting the purge needle into VOA vials containing soil samples, do not immediately push the bottom of the needle through the soil to the bottom of the vial; but rather temporarily position the base of the purge needle in the water above the soil until the pump handle has been pulled to begin air flow through the sample. Once air flow has been initiated, slowly extent the purge needle through the soil to the base of the vial. The air flow from the tip of the purge needle should reduce the potential for clogging as the needle moves through the soil. This procedure is especially helpful when working with clayey soils.

Troubleshooting Guide

Problem	Possible Cause	Solution
Sample does not appear to be purging (bubbling) after the pump handle has been pulled.	Clogged/blocked purge (long) needle.	Use the decontamination syringe to check the purge needle for clogs. If clogged, clean the needle or use a new purge needle.
	Clogged/blocked extraction (short) needle.	Use decontamination syringe to check the extraction needle for clogs. Use decontamination syringe to clean the needle or use a new extraction needle.
	Colorimetric tube is not securely connected to hand pump.	Remove and re-insert the colorimetric tube from the hand pump. If the fit seems loose, replace the hand pump inlet gasket.
	Colorimetric tube is not securely connected to extraction needle tubing.	Check the connection between the extraction needle tubing and the colorimetric tube. If loose, insert the colorimetric tube further into the extraction needle tubing.
	VOA cap is not tightly sealed.	Check the tightness of the VOA cap. Tighten if necessary.
	Colorimetric tube tips were not broken before connecting to hand pump and tubing.	Break both tips of the colorimetric tube before connecting to hand pump and tubing.
	Broken/bad plunger seal in hand pump.	Check the pump seal by holding your finger over the hand pump inlet while pulling the pump handle and lock into the 50cc position. If no vacuum is apparent, open the pump, remove the plunger, replace the plunger seal, and grease the new seal. Re-assemble the pump.
The colorimetric tube shows no reaction after purging a sample that contains chlorinated compounds. (False Negative)	Colorimetric tube is below the optimum operating temperature.	Heat the colorimetric tube to 40°C/104° F before using. It is also recommended to heat the sample. The recommended temperature for tubes and samples when using the Color-Tec Method is 40°C/104° F.
	Colorimetric tube was connected using reversed flow direction.	Use the flow direction arrows to properly align the tube. The purged air must pass through the black oxidizer phase and the white catalyst phase before entering the yellow reagent phase.
	The sample also contains a detectable concentration of xylenes or toluene.	Samples can be tested for the presence of xylenes and toluene using the **Gastec® 122L** colorimetric tube. The detection of chlorinated compounds may be diminished when xylenes or toluene are present in a sample.
The colorimetric tube indicates a reaction after purging a sample that contains no chlorinated compounds. (False Positive)	Chlorinated compounds are present at detectable concentrations the ambient air.	Test the ambient air using an LL tube to determine if chlorinated compounds are present at detectable concentrations. Attach the charcoal filter to the purge needle prior to purging samples.
	HCl vapor is present in the sample VOA or in the ambient air.	Avoid use of HCl in the area where Color-Tec is in use. Use only unpreserved VOAs for samples to be screened with Color-Tec.
	Water vapor has entered the yellow reagent phase of the tube indicating a positive reaction	Avoid purging more that 200 CCs through any sample. Stop purging before condensation inside the tube reaches the end of the black oxidizer phase. Avoid drawing any water from the sample VOA into the colorimetric tube.

5.0 Sample Purging and Detection Methodology

Samples may be purged using 50 cubic centimeters (cc), 100cc, or 200cc purge volumes. These various purge volumes are used in succession to maximize the low-level detection capability and detection range of each tube, thereby reducing the number of tubes needed to tentatively quantify the concentration of total chlorinated compounds in the sample. The pump stand is equipped with two VOA-vial holders to accommodate a second (duplicate) sample to be collected from each sampling location. This duplicate sample (collected and prepared in the same manner as the original sample) serves the following two potential purposes:

1. When purging the initial VOA vial does not induce a color change in the colorimetric tube, the second VOA vial containing the duplicate sample, may be purged (using the same colorimetric tube) to increase the probability of detecting very low (< 10 µg/L) concentrations.
2. When the initial test induces a color change that exceeds the upper limit of the LL tube (a tube reading > 3), the extra VOA vial can be used to analyze the sample using higher range colorimetric tubes (133L or 133M) to tentatively quantify the higher concentration of chlorinated compounds in the sample.

5.1 50cc Purge Volume

Initially, all samples are analyzed using a Gastec® 133-LL tube with a 50cc purge cycle. If the 50cc purge induces a color change reading of 1.5 to 3.0, read the calibration scale value aligned with the stained/unstained interface in the tube and use the pump stroke correction factors provided on Table 1 to determine the correct reading for a 50cc purge volume. If the concentration in the sample exceeds the upper detection limit of the tube (i.e. the color change moves beyond the upper limit of the calibration scale printed on the tube), repeat the analysis using duplicate samples and higher range tubes (133-L, 133-M, and 133-HA) until the color change reaction stops within the calibration scale on the tube. If the color change reaction exceeds the upper limit of the calibration scale of the HA tube, the sample contains a concentration of chlorinated compounds above the upper detection capability of the Color-Tec Method.

5.2 100cc Purge Volume

Following completion of the 50cc purge cycle, if the concentration in the sample has induced a color change in the tube which traveled less than half the distance of the calibrated portion of the reagent phase of the tube (less than a reading of approximately 1.5), pull the pump handle outward and lock it into the 100cc position to complete a full purge cycle. Record the value aligned with the stained/unstained interface on the tube. No correction factor is needed for a 100cc purge.

5.3 200cc Purge Volume

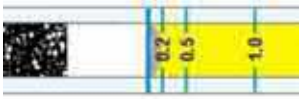
Following completion of the 100cc purge cycle, if the concentration in the sample has induced no color change reaction, remove the purge needle and extraction needle assembly from the VOA vial containing the original sample and insert them into the VOA vial containing the duplicate sample (which has also been pre-heating) and perform another 100cc purge cycle **using the same colorimetric tube**. To perform the transfer to the second vial, remove both needles from the original VOA vial and immediately insert both needles into the septa of the duplicate sample VOA vial. Before re-inserting the pump handle, temporarily remove the colorimetric tube from the tip of the hand pump and re-insert the pump handle completely into the pump while the tube is un-attached. Re-attach the colorimetric tube into the pump tip and pull the pump handle and lock it into the 100cc position. Following the complete second purge cycle, read the calibration scale value aligned with the stained/unstained interface in the tube and use the pump stroke correction factors provided on Table 1 to determine the correct reading for a 200cc purge volume.

Table 1
Purge Volume Correction Factors for 133-Series Tubes

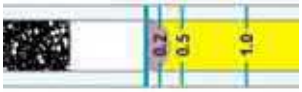
Colorimetric Tube	Purge Volume	Quantity of Pump Pulls	Correction Factor
133-LL	50cc	Half Pull	Tube Reading x 3
133-LL	100cc	Full Pull	Tube Reading x 1
133-LL	200cc	Two Pulls	Tube Reading x 0.5
133-L	50cc	Half Pull	Tube Reading x 3
133-L	100cc	Full Pull	Tube Reading x 1
133-L	200cc	Two Pulls	Tube Reading x 0.5
133-M	50cc	Half Pull	Tube Reading x 2.5
133-M	100cc	Full Pull	Tube Reading x 1
133-M	200cc	Two Pulls	Tube Reading x 0.4
133-HA	50cc	Half Pull	Tube Reading x 3
133-HA	100cc	Full Pull	Tube Reading x 1
133-HA	200cc	Two Pulls	Tube Reading x 0.3∞

6.0 Reading the Tubes

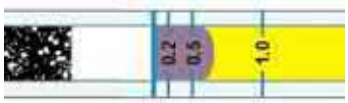
The basic Color-Tec method procedures are simple and intuitive; however, contaminant detection and semi-quantitative values are obtained through visual observation of the colorimetric reaction in the tubes, which is inherently subjective (especially in samples containing very low [<5 µg/L] total CVOHs). These low-level samples induce only a slight color change (i.e. slight darkening or light purple hue) prior to the 0.5ppm line on the tube scale at the entrance of yellow reagent layer in the LL tube. Samples containing concentrations of total chlorinated compounds above 5 µg/L usually induce a more apparent reaction within the LL tube.



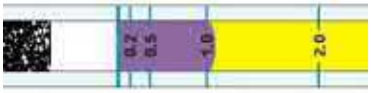
Tube Reading = 0.1
Estimated Concentration = 3 µg/L



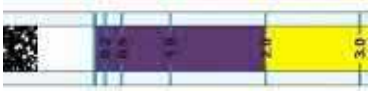
Tube Reading = 0.2
Estimated Concentration = 15 µg/L



Tube Reading = 0.6
Estimated Concentration = 45 µg/L



Tube Reading = 1.0
Estimated Concentration = 70 µg/L



Tube Reading = 2.0
Estimated Concentration = 145 µg/L

6.1 Very Low Concentrations

When a sample contains very low concentrations (<10µg/L) of chlorinated compounds, the resulting color change is not immediate or distinct. At these low concentrations the color change does not usually begin until between 100 and 200 CCs of air have purged through the sample into the tube. Furthermore, the color change induced at these low concentrations is very slight (below 0.5 on the tube scale) and appears as a slight darkening or light purple hue at the entrance of yellow reagent layer in the LL tube.

6.2 Low to Medium Concentrations

When the sample contains higher concentrations (>10 µg/L) of chlorinated compounds, the resulting color change is an obvious light to dark purple, which propagates through the yellow reagent layer toward the pump end of the colorimetric tube. The detected concentration level is obtained by matching the linear extent of the discolored reagent inside the tube to the calibration scale printed on the outside of the tube.

6.3 High Concentrations

When the sample contains high concentrations (>100 µg/L) of chlorinated compounds, the color change reaction occurs quickly and usually exceeds the upper detection level of the Gastec® 133LL tube. The higher the concentration of chlorinated compounds in the sample, the faster the color change reaction occurs and the further it propagates through colorimetric tube. Samples containing very high concentrations (>1000 µg/L) of chlorinated compounds, often discolor the entire yellow reagent layer in the LL tube before the pump handle has been fully extended. In these cases, the purging can be discontinued to allow for the current sample bottle to be re-tested using a higher range detector tube. There is no need to continue purging the sample when the detection level of the tube is exceeded. Each subsequently higher range tube (133L, 133M, or 133HA) is used to purge each new duplicate sample in succession until the color change reaction does not exceed the calibration range of the tube being used.

6.4 Recording Tube Readings

It is recommended to record the observed concentration value (tube reading), the range of the colorimetric tube (LL, L, M, or HA) and the final purge volume when logging Color-Tec results. For example, a reading of 2.5 observed on an LL tube using a 100 ml purge should be recorded as **2.5/LL/100**. Purge volume correction factors must be applied for Color-Tec values which were obtained using any purge volume other than 100cc. For example, a reading of 0.2 observed on an LL tube using a 200 ml purge should be recorded as **0.1/LL/200**. A reading of 60 observed on an M tube using a 50 ml purge should be recorded as **150/M/50.**

7.0 Estimating Sample Concentrations (Conversion Table)

The Color-Tec reading (the distance that the color change travels through the tube) is a **relative response** to the amount of chlorinated-compound molecules that have been purged from the sample and directed into the tube. Therefore, the units printed on the tubes are used only to record the **relative response** for each analysis in order to facilitate comparison to laboratory GC/MS methods.

To provide a field-ready estimate of the total chlorinated solvent concentration in liquid and solid samples based on the colorimetric tube reading, The developer of the Color-Tec method created a conversion table (see Table 2) based on statistical comparison of water samples collected from chlorinated solvent sites in which the Color-Tec and GC/MS methods were used to analyze split samples. An estimated concentration may be obtained by matching the Color-Tec tube response to either the *median expected GC/MS concentration* or the *range of expected GC/MS concentrations* provided on the comparison table. The potential range of corresponding analytical values associated with each positive tube reading increases significantly as the sample concentration increases. The estimated concentrations presented on Table 2 represent the central tendency of the comparison data. The actual analytical values obtained by laboratory analysis of split samples may differ substantially from this estimate and may fall outside of the corresponding ranges provided on Table 2.

The expected GC/MS concentrations presented in Table 2 are based on comparison of water sample data only. These conversion values may also be used for soil data; however, the potential range in expected GC/MS concentrations may be increased as a result of the difference in soil volumes used in the two methods and in the inherent heterogeneity of most soil matrices. However, the potential deviation factors included in the *range of expected GC/MS concentrations* column should be sufficient to account for the intrinsic analytical variability of most soil sample results.

THE COLOR-TEC TUBE READING IS NOT THE SAMPLE CONCENTRATION!

The tube reading is a unit-less value which must be compared to laboratory results from split samples in order to yield an estimate of the actual concentration present in the sample. This conversion table provides a reasonable estimate of the expected sample concentration based on the tube reading.

Table 2
Conversion of AQR Color-Tec Readings (Relative Responses) to Expected GC/MS Total Chlorinated Volatile Organic Halocarbon Concentrations

Gastec® Colorimetric Tube	Color-Tec Tube Reading (relative response) (unit-less)	Median Expected GC/MS (Laboratory) Concentration (µg/L or µg/kg)	Range of Expected GC/MS Concentrations (µg/L or µg/kg)	
			Low	High
133-LL	0	3	>0	5
	0.1	7	5	10
	0.2	15	10	20
	0.5	35	25	45
	0.8	55	40	75
	1	70	50	95
	1.5	110	75	140
	2	145	105	190
	2.5	190	130	245
	3	230	160	290
	5	380	260	490
	9	900	630	1,160
133-L	25	2,500	1,250	3,750
	35	4,400	2,200	6,600
	45	7,700	3,850	11,550
	55	15,000	7,500	22,500
	75	17,200	8,600	25,800
133-M	100	21,100	10,500	31,600
	200	46,000	23,000	69,000
	300	85,000	42,500	127,500
133-HA	500	225,500	112,800	338,300
	700	598,300	299,200	897,500
	900	1,587,500	793,800	2,381,300

Notes:
The **Color-Tec Tube Reading** (Color-Tec units) is the value printed on the colorimetric tube at the interface between the reacted and un-reacted reagent (the extent of the color change in the tube for a positive result).

The **Median Expected GC/MS Concentration** is the estimated concentration in micrograms per liter (µg/L) of total chlorinated volatile organic halocarbons (CVOHs) present in the sample for the corresponding Color-Tec tube response.

The **Range of Expected GC/MS Concentrations** is an estimated range of potential concentrations (µg/L or µg/kg) of total chlorinated volatile organic halocarbons (CVOHs) for the for the corresponding Color-Tec tube response.

The **Median Expected GC/MS Concentration** was obtained using statistical comparison of Color-Tec Method data and GC/MS (EPA Method 8260B) data. Comparison data were obtained from 5348 water samples collected from 152 chlorinated solvent (primarily PCE) sites in which the Color-Tec Method was used to analyze the samples in the field and either a laboratory-based or mobile GC/MS was used to analyze split samples.

The **Range of Expected GC/MS Concentrations** reflects the potential deviation in the **Median Expected GC/MS Concentration** based on Color-Tec Method/EPA Method 8260B comparison results. The potential error increases as the concentration increases. The initial deviation factor used for a Color-Tec Reading of zero is +/- 30% and increases to +/- 400% at a Color-Tec Reading of 900 units.

The **Median Expected GC/MS Concentrations** presented in this table are based on comparison of water sample data only. These conversion values may also be used for soil data; however, the potential error or range in expected GC/MS concentrations may be increased as a result in the difference in soil volumes used in the two methods and in the inherent heterogeneity of many soil matrices. The potential deviation factors included in the **Range of Expected GC/MS Concentrations** data should be sufficient to account for the intrinsic analytical variability of most soil sample results.

The expected GC/MS concentrations in this table are provided only to give Color-Tec Method users an approximate concentration for the Color-Tec Tube Response. Actual GC/MS results on split samples may be outside of the stated range for a given Color-Tec Tube Response.

Refer to the **AQR Color-Tec Manual** for detailed information regarding general method principals and potential analytical variables.

8.0 Proposed QA/QC Procedures

As with any analytical method, standard sample preparation and quality assurance/quality control (QA/QC) procedures tailored to the specific project goals should be developed and followed precisely and consistently throughout the sampling and analysis program to insure consistent results and the lowest possible detection levels for all samples analyzed using the Color-Tec method. This section is intended to provide the Color-Tec user with a basic methodology for conducting QA/QC procedures which address various potential operational and procedural issues, such as analytical confidence, method performance, false positives/negatives, replicate accuracy, and contaminant carryover. Users of the Color-Tec method are encouraged to use the information provided in this section to develop project-specific QA/QC and sample handling procedures that insure the level of consistency and accuracy required for the user's sampling program.

8.1 Analytical Confidence and Method Performance

Using Color-Tec to analyze prepared sample spikes containing known concentrations of chlorinated compounds provides confidence that the method procedures are being performed properly performed and may provide a basis for estimating concentrations based on the low-range (133LL) colorimetric tube responses. Spiked sample concentrations should range between 10 µg/L and 200 µg/L to cover the detection range of the low-range (133LL) colorimetric tube. Most analytical laboratories will prepare spiked samples in VOA vials with specified compounds at specified concentrations. Conduct Color-Tec analyses on the spiked samples using the same procedures described in Sections 3 and 4 and record the results in your field log as described in Section 5.3. A 200cc purge using two VOA vials (as described in Section 4.3) may be required to produce a positive Color-Tec reading when testing spiked samples containing 10 µg/L or less of total CVOHs may require a 200cc purge to produce a positive Color-Tec reading.

Performance/confidence testing of the higher range tubes (133L, 133M, and 133HA) using high-concentration spiked samples is unnecessary because the high range tubes are usually not used unless the sample being tested has already exceeded the upper range of the low range tube, thus revealing that the sample being tested contains a sufficient quantity of chlorinated compounds to evoke a positive reaction from the next higher range tube. Given the inherent extreme variability of estimating high concentrations based on tube responses on the high range tubes (133L, 133M, and 133HA), comparison of high concentration (>500 µg/L) spiked samples generally

8.2 Chemical Inhibitors (False Negatives)

The presence of Toluene and Xylenes inhibits/diminishes the ability of the colorimetric tubes to detect CVOHs. At sites where the presence of these compounds is suspected to be present in the soil or water samples, QA procedures may include periodic testing of groundwater or soil samples and ambient air for the presence of toluene and xylenes using a Gastec® Toluene tube (the Toluene tube also detects xylenes). To conduct a test for the presence of compounds which could inhibit the detection of CVOHs use the Toluene (122L) tube to analyze a duplicate soil or water sample using the procedures described in Sections 2 through 4.

8.3 Positive Interference (False Positives)

Chlorinated Volatile Organic Halocarbons. The Gastec® 133-series colorimetric tubes used to perform the Color-Tec method detect all chlorinated volatile organic halocarbons (CVOHs) present in each sample. Thus, individual CVOH compounds cannot be identified/isolated using this method. But rather, each positive tube reading represents the sum total of all CVOH compounds present in the sample as "total CVOHs". This detection of the entire class of compounds is an inherent effect of the colorimetric tube design and thus may not be avoided by any alteration of method procedures.

Water Vapor. A build-up of water vapor in the colorimetric tube in the oxidizer stage (black portion of the tube) and through the catalyst stage (white portion of the tube) can induce a subtle color change similar to that of a low-level positive result if the moisture reaches the reagent stage (yellow portion of the tube). This problem is easily avoided by observing the build-up of condensation inside the tube in the oxidizer stage during purging, and stopping the airflow before the condensation reaches the white catalyst stage. This condition rarely occurs before the maximum required purge volume of 200 CCs is achieved and contaminant presence or absence has been determined.

Hydrogen Chloride Vapor. Hydrogen chloride vapor is the reactant that causes the color change in the yellow reagent used in the PCE colorimetric tubes. The HCl vapor is formed when chlorinated halocarbons pass through the oxidizer and catalyst stages of the tube. Free HCl vapor can also be formed when strong hydrochloric acid comes into contact with air or calcium carbonate. Any source of free hydrogen chloride vapor which enters the colorimetric tube will cause a strong positive reaction. To minimize the risk of false positives from hydrogen chloride vapor, avoid the use of pre-preserved VOAs when using the Color-Tec method. Natural sources of hydrogen chloride vapor are rare.

Free Chlorine. Very high (>20,000 ppm) concentrations of free chlorine can cause a low-level positive reaction in the 133LL colorimetric tube. The conditions necessary for this positive interference rarely occur in groundwater or soil samples.

Contaminant Carryover. It is highly recommended that VOA vials and extraction needle assemblies be discarded following each test. Re-use of these expendable items may cause sufficient carryover of contaminants to cause a false positive result in subsequent samples.

8.4 Ambient Air Interference

Because the Color-Tec method uses ambient air as the purge gas, airborne chlorinated compounds at low concentrations can enter the sample and cause a positive reaction in the detector tube. Conversely, low concentrations of either toluene or xylenes present in the ambient air may enter the colorimetric tube and inhibit/diminish the tube's ability to detect CVOHs. To prevent airborne contaminants from entering the sample and detector tube during sample purging and analysis, the method is used with a carbon pre-filter attached to the purge needle. To determine whether airborne chlorinated contaminants are present, a PCE (133LL) colorimetric tube may be used periodically to test the ambient air at the location where the field testing is being performed. If airborne contaminants are present and the carbon filter is being used, the carbon filters can also be tested periodically using a colorimetric tube to determine if breakthrough is occurring. The ambient air may be similarly tested for the presence of xylenes or toluene using the PCE (133LL) colorimetric tube.

To conduct a test for the presence of chlorinated VOHs in the ambient air, break the tips of a PCE (133LL) or PCE (133LL) colorimetric tube and properly insert it into the hand pump. Pull and lock the pump handle into the 100cc position allowing ambient air to enter the colorimetric tube. *Note: Do not attach an extraction needle assembly to the colorimetric tube while performing this test.* Once the 100cc flow cycle is completed, carefully read the tube and record the results. A positive result indicates the presence of CVOCs in the ambient air at concentrations detectable by Color-Tec which would affect sample results unless the carbon filter assembly is attached to the purge needle (see Section 9). A negative result indicates that CVOCs are not present in the ambient air at concentrations detectable by Color-Tec and therefore will not affect sample results. It is recommended that the carbon filter assembly is used regardless of the ambient air testing results.

8.5 Duplicate Sample Testing Procedure

Duplicate or replicate samples are collected from the same sampling location, at the same time, using the same collection methods, and analyzed using the same procedures as the original samples for the purpose of determining both sampling and analytical method variability. Since a second (duplicate) VOA vial is always collected for the Color-Tec method, a duplicate or replicate analysis may be performed on the second (duplicate) VOA vial any time that a positive result (color change) is evoked by the original sample (first VOA vial) without exceeding the upper limit of the low-level colorimetric tube. In those cases, the duplicate or replicate analysis is simply performed by using a new low-level colorimetric tube to analyze the duplicate sample in the second (unused) VOA vial. If sampling and method variability is low, the result of the duplicate test will be the same or similar to the results obtained from the original test. The relative percent difference (RPD) may be calculated to quantify any variability in the results.

8.6 Collection of Split Samples for Laboratory Analysis

It is recommended that sample splits be collected for laboratory comparison analysis from 5 to 20 percent of the total quantity of samples analyzed using the Color-Tec method. Given a sufficient quantity of split sample pairs and sufficient range of concentration values, the GC/MS-to-Color-Tec comparison data may be used to obtain estimated concentrations for samples in the data set which were analyzed only using the Color-Tec method. This can be achieved using linear regression analysis of the comparison data. Statistical analysis of the comparison data can also be performed to determine site-specific Color-Tec method performance data.

9.0 Safety Precautions

As with the use of any product, it is recommended that the user carefully review all product manuals and Material Safety Data Sheets (MSDS) provided with this product prior to use. Several components of the Color-Tec kit are products obtained from other manufacturers which have manuals including safety precautions. Users of the Color-Tec method should carefully review the manuals and safety precautions and should become familiar with the proper use of all components included in the Color-Tec kit. It is recommended that the procedures involved with the method be incorporated into the user's Site-specific Safety and Health Plan (SSHP). MSDSs for all chemicals provided as part of the Color-Tec kit are available upon request. The following precautions should be considered to reduce potential user safety risks associated with the performance of the Color-Tec method.

Activity	Potential Risk	Precaution
Breaking tube tips	eye injury, dermal puncture	safety glasses
Accidental tube breakage	dermal cuts, exposure to reagent	safety gloves
Use of purge/extraction needles	dermal puncture	use caution
Use of the hot plate	dermal burns, electric shock	limited setting
Use of PCE standards	dermal contact, dermal cuts	safety gloves

Additional Safety Notes:

- Use skin and eye protection while breaking colorimetric and carbon filter tubes;
- The thermostat dial setting of the Corning® Hot Plate should never be set above 5 for any heating purposes required by the Color-Tec method;
- Do not over-fill the water bath pan while heating the samples and tubes;
- Always conduct sample and tube heating activities on a flat, stabile, surface.
- Keep all flammable or combustible materials away from the Corning® Hot Plate during sample and tube heating activities.

- Always use the stainless-steel water-bath pan properly filled with water for heating the samples and tubes – do not heat samples or tubes directly on the surface of the Corning® Hot Plate;
- Do not use any heat source to heat the water-bath, tubes, or samples other than the Corning® Hot Plate provided in the hardware kit.

Disposal of Expendable Materials:

- Re-cap all needles before disposal;
- After re-capping each extraction needle, dispose of the extraction needle assembly while leaving the vinyl tubing attached to the colorimetric tube – Do not attempt to remove the extraction needle assembly from the tip of the colorimetric tube for disposal;
- Dispose of all sharps (needles and broken glassware) in accordance with any and all applicable local and/or federal rules or guidance.
- Dispose of all colorimetric tubes as specified in the Gastec® MSDS and/or in accordance with any and all applicable local and/or federal rules or guidance.
- Dispose of all VOA vials used to contain sample materials in accordance with any and all applicable local and/or federal rules or guidance.

Product Warranty

AQR warrants that the goods sold herein will be free from defects in material and workmanship. This warranty shall be limited to the replacement of defective parts. It is expressly agreed that this warranty shall be in lieu of all warranties of fitness and in lieu of the warrant of merchantability.

EPA Guidance Document References

Using Dynamic Field Activities for On-Site Decision Making
May 2003; OSWER No. 9200.1-40 EPA/540/R03/002; Chapter 5;
http://www.epa.gov/superfund/programs/dfa/download/guidance/40r03002.pdf

Site Characterization Technologies for DNAPL Investigations September 2004; EPA 542-R-04-017;
http://www.clu-in.org/download/char/542r04017.pdf

Understanding Procurement for Sampling and Analytical Services under a Triad Approach June 2005, EPA 542-R-05-022;
http://www.epa.gov/swertio1/download/char/procurement.pdf

Conducting Contamination Assessments at Drycleaning Sites EPA Technology Innovation Program; State Coalition for Remediation of Drycleaners; http://www.drycleancoalition.org/download/assessment.pdf

EPA Triad Implementation References

Using AQR Color-Tec for Source Identification and Delineation
Naval Construction Battalion Center Davisville North Kingstown, RI - 2008 Triad Conference;
http://www.umass.edu/tei/conferences/Triad_PDF/Anderson.pdf

Fast Track to Reducing Conceptual Site Model Uncertainty CH2MHill; Storage Tank Site ST-123 POL Fuel Yard;
http://www.Triadcentral.org/user/includes/dsp_profile.cfm?Project_ID=25

Best Practices in Triad Approach to Characterize TCE, National Laboratory Environmental Sciences Division Argonne, IL;
http://www.triadcentral.org/user/doc/TPP-Hurlburt-BestPractices.pdf

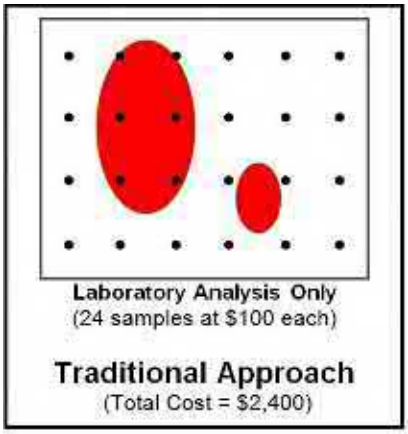
Adaptations to Triad as a Basis for Exit Strategy Development Decision Logic Flow Chart 2006 Triad Poster Session;
CH2MHill; http://www.triadcentral.org/user/doc/TPP-Hurlburt-TriadAdaptations.pdf

Successful Triad Implementations at Federal Sites AQR Color-Tec Method locates source areas at Calloway Drum Recycling Site, Auburndale, Florida http://www.triadcentral.org/user/doc/TPP-Callaway-Field_Based_Decision_Approach.pdf

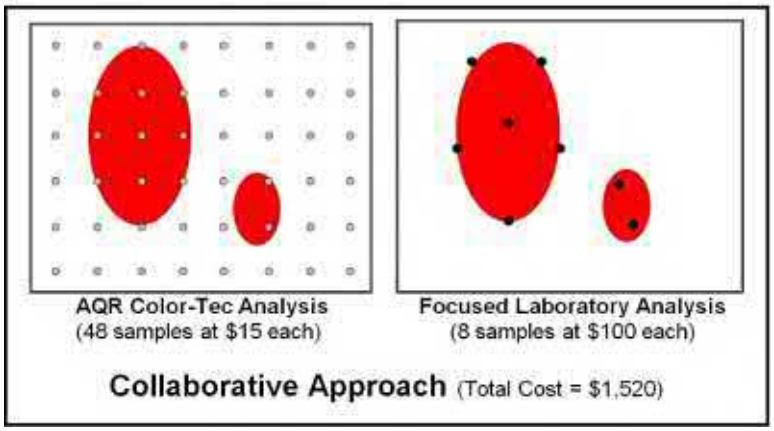
Color-Tec Method Applications

Source Area Identification at chlorinated solvent sites is highly complex given the low solubility of these compounds in water. Chlorinated solvent source zones often persist as suspended residual in unsaturated and saturated subsurface sediments for many decades. Surface water infiltration and groundwater flowing through the source zones slowly dissolves the suspended residual solvent leading to substantial aqueous phase contaminant plumes. Given the high volatility of most chlorinated compounds, residual solvents suspended in the unsaturated soil often leads to significant vapor phase contamination. The Color-Tec method is ideal for locating chlorinated solvent source areas by combining low level detection of all chlorinated compounds with low per sample cost to allow for significant expansion of sampling coverage compared to assessment approaches where only definitive analytical (laboratory) methods are employed to locate source areas. Definitive laboratory analysis provides high analytical accuracy, but sampling quantity is often limited to control costs, resulting in data gaps, sampling uncertainty, and low overall data quality. The low per-sample cost of Color-Tec method offers a 6:1 increase in analysis volume over laboratory methods, allowing for five times the sampling coverage for the same cost.

The illustrations below compare the traditional approach of source identification which uses only definitive laboratory analysis, to a collaborative approach which uses a high volume of Color-Tec data combined with a low quantity of definitive laboratory data. This collaborative approach combines high volume/low accuracy with low volume/high accuracy to achieve higher overall data quality than either method alone.



The diagram to the left shows the traditional site investigation scenario in which all samples collected are analyzed using only definitive analytical methods. The red areas represent previously unidentified source areas and black dots represent sampling locations intended to locate and delineate the contaminant plumes. Although this definitive-analysis only approach provides high analytical accuracy, the sampling quantity is often limited in order to control costs, resulting in data gaps, sampling uncertainty, and low overall data quality – and in this example the smaller source area remains undetected.



The two diagrams to the right show an investigation scenario in which a real-time measurement method, such as Color-Tec, is used to increase the overall sampling coverage, resulting in reduced sampling uncertainty and increased overall data quality. In this example, the smaller source area is identified and the Color-Tec data is verified and confirmed by focusing a reduced quantity of definitive, laboratory-based, analysis of split-samples onto the most critical areas of the site. Combining Color-Tec with focused laboratory analysis in this manner provides increased overall data quality and analytical accuracy at significantly lower costs than conventional approaches which rely only on definitive laboratory-based analysis.

Groundwater Profiling is the collection of discrete samples at multiple depths and locations working outward from known source areas to define the lateral and vertical extent of a dissolved groundwater contaminant plume. The technique is used in conjunction with the Color-Tec method at chlorinated solvent sites to allow for immediate decisions regarding subsequent vertical and lateral sampling locations.

Soil Matrix Profiling is similar to groundwater profiling, but uses sampling of the unsaturated soil to define the lateral and vertical extent of the vapor phase contamination.

Groundwater Matrix Profiling (Residual Zone Mapping) is similar to groundwater or soil profiling, but uses sampling of saturated unconsolidated aquifer matrix to define the lateral and vertical extent of suspended residual DNAPL.

Surface Water/Sediment/Pore Water Impact Evaluation is the collection and analysis of sediment, sediment pore water, and surface water to locate and characterize groundwater impacts on surface water.

Contact and Ordering Information

- **For more information visit http://www.aqrcolor-tec.com/**
- **For kit orders contact Phil Pecevich at 919-918-7191**
  Email: pecevica@bellsouth.net

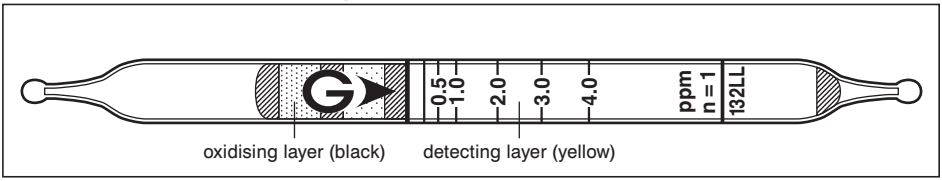
Equipment and Expendables

- **Hardware kit includes piston pump, pump stand, and heating equipment in a Pelican® hard case**
- **Expendables provided in 20-sample packs**
- **Expendables for QA/QC tests sold separately**
- **Cost per sample is $19.95**
- **Volume discounts available**
- **Professional technical support is included with every purchase**
- **Professional in-house or web-based training is available**

Hardware Kit

20-Sample Pack

Trichloroethylene $Cl_2C{:}CHCl$ No.132LL



Performance The minimum scale value (0.25ppm) is not printed on the tube, but only the scale line is printed.

Measuring range	0.125 to 0.25 ppm	(0.25) to 4.0 ppm	4.0 to 8.8 ppm
Number of pump strokes	2 (200 ml)	1 (100 ml)	1/2 (50 ml)
Correction factor	1/2	1	2.2
Sampling time	3 min	1.5 min	45 sec

Detecting limit : 0.05 ppm (2 pump strokes)
Colour change : Yellow → Purple
Corrections for temperature & humidity : Temperature correction is necessary.
Relative standard deviation : 10 % (for 0.25 to 1.0 ppm), 5 % (for 1.0 to 4.0 ppm)
Shelf life : 2 years (in the refrigerator)

Reaction principle

$Cl_2C{:}CHCl + PbO_2 + H_2SO_4 \rightarrow HCl$
$HCl + Base \rightarrow Chloride$

Possible coexisting substances and their interferences

Substance	Concentration	Interference	Changes colour by itself to
Bromine, Chlorine	≧ 1/2	+	Purple
Hydrogen chloride	≧ 1/2	+	Purple
Tetrachloroethylene	≧ 1/2	+	Purple
1,1,1-Trichloroethane	≦ 80 ppm	No	No (≦ 80 ppm)
Toluene, Xylene		No	No

Other substance measurable with this detector tube

Substance	Correction	No. of pump strokes	Measuring range
1,2-Dichloroethylene	Factor : 1.5	1	0.375 to 6.0 ppm
Dichlorvos	Factor : 0.45	2	0.11 to 1.8 ppm

Calibration gas generation

Diffusion tube method

Special note

This detector tube can also be used with the Gastec Water Pollutant Analysis Systems to measure trichloroethylene in the water. With these systems, samples are collected by using a syringe.

Appendix G

Results of Receptor Survey and Sensitive Receptor Survey

Sensitive Environmental Survey Response Summary (October and November 2022)
Tarheel Army Missile Plant
Burlington, North Carolina

Agency	Sensitive Environment	Contact Information	Date Contacted	Response Date	Results/Comments
NC Division of Conservation, Planning, and Community Affairs - Natural Heritage Program	State Parks Areas important to Maintenance of Unique Natural Communities Sensitive Areas Identified Under the National Estuary Program Designated State Natural Areas State Seashore, Lakeshore and River Recreational Areas Rare species (state and federal Threatened and Endangered) Sensitive Aquatic Habitat State Wild and Scenic Rivers	natural.heritage@ncdenr.gov Natural Heritage Data Explorer Map (https://ncnhde.natureserve.org)	10/26/2022	11/21/2022	Email sent 10/26/2022 from Rodney Butler with NCNHDE included information regarding the creating and submitting the project for review via the NCNHDE website (https://ncnhde.natureserve.org/content/data-download). NCNHDE Report (NCNHDE-20032) dated 11/21/2022 did not identify Natural Heritage Natural Areas within 1,500 feet of the Site.
National Park Service- Public Affairs Office	National Seashore, Lakeshore and River Recreational Areas National Parks or Monuments Federal Designated Wild and Scenic Rivers	Anita Barnett Anita_Barnett@nps.gov	10/26/2022 & 11/28/2022	--	Email sent 10/26/2022. Follow up email sent 11/28/2022. Response not yet received at the time of this report; however, it is likely that there are no National Park Units or affiliated sites within 1,500 feet of the Site.
US Forest Service	Designated and Proposed Federal Wilderness and Natural Areas National Preserves and Forests Federal Land Designated for the Protection of Natural Ecosystems	Heather Luczak hluczak@fs.fed.us Christopher Brown christopher.j.brown@usda.gov	10/26/2022	10/26/2022	Christopher Brown reported via email that "There are no Designated and Proposed Federal Wilderness and Natural Areas, National Preserves and Forests, nor Federal Land Designated for the Protection of Natural Ecosystems located within the 1,500 ft area surrounding the property."
NC Division of Water Resources	State-Designated Areas for Protection or Maintenance of Aquatic Life	Nora Dreamer Nora.Dreamer@ncdenr.gov & Ian McMillan Ian.Mcmillan@ncdenr.gov	10/26/2022	10/27/2022	Letter report dated 10/27/2022 stated that the area surrounding the Site is classified as "Environmentally Sensitive" or "State-Designated Areas for Protection or Maintenance of Aquatic Life."
NC Forest Service (Formerly NC Division of Forest Resources)	State Preserves and Forests	Craig Clarke craig.clarke@ncagr.gov	10/26/2022 & 11/28/2022	11/28/2022	Craig Clarke from the NC Department of Agriculture & Consumer Services reported via email that "There are no State Forest nor any NC Forest Service Property within the 1,500-foot receptor buffer."
US Fish and Wildlife Service	Endangered Species	Pete Benjamin Pete_benjamin@fws.gov, Leigh Mann leigh_mann@fws.gov	10/26/2022	10/26/2022	Pete Benjamin from the U.S. Fish and Wildlife Service reported via email that "Activity at this site will have no effect on federally-listed species or other species of concerns to this office."
NC Department of Natural and Cultural Resources	National and State Historical Sites	Renee Gledhill renee.gledhill-earley@ncdcr.gov environmental.review@ncdcr.gov	10/26/2022, 11/3/2022, & 11/28/2022	12/7/2022	Emails sent 10/26/2022, 11/3/2022 and 11/28/2022. Letter report dated 12/7/2022 reported that "The property is listed in the National Register of Historic Places as the Western Electric Company - Tarheel Missile Plant (AM2021)." Additionally, "Testing and remediation efforts will have no adverse effect on the Missile Plant based on the condition that direct impacts to resources contributing to its significance are avoided."
NC Division of Coastal Management	Areas Identified Under Coastal Protection Legislation Coastal Barriers or Units of a Coastal Barrier Resources System	Mike Lopazanski mike.lopazanski@ncdenr.gov	10/26/2022	10/26/2022	Mike Lopazanski reported via email that "The area identified is not within the jurisdiction of the NC Coastal Area Management Act."
NC Wildlife Resources Commission	National or State Wildlife Refugees State lands designated for wildlife or game management Migratory Pathways and Feeding Areas Critical for Maintenance of Anadromous Fish Species within River Reaches Lakes or Coastal Tidal Waters Spawning Areas Critical for the Maintenance of Fish/Shellfish Species within River, Lake or Coastal Tidal Waters	David Cox David.Cox@ncwildlife.org Response from Gabriela Garrison gabriela.garrison@ncwildlife.org	10/26/2022 & 12/1/2022	--	Emails sent 10/26/2022 and 12/1/2022
US Army Corps of Engineers	Wetlands	Dorothy Harrington Dorothy.Harrington@usace.army.mil	10/26/2022 & 11/28/2022	--	Emails sent 10/26/2022 and 11/28/2022. Response not yet received at the time of this report. Due to the proximity to the unnamed tributary to Service Creek and the lack of response from the US Army Corps of Engineers, Terracon reviewed the U.S. Fish & Wildlife Service National Wetland Inventory Map (https://www.fws.gov/wetlands/data/mapper.html). The Wetland Inventory Map identified a Riverine habitat (wetland R4SBC) associated with the unnamed tributary to Service located west of the Site. Additional features were not identified within 1,500 feet of the Site.

Dinwiddie, Ethan C

From: Lopazanski, Mike <mike.lopazanski@ncdenr.gov>
Sent: Wednesday, October 26, 2022 4:11 PM
To: Perry, Matthew
Cc: Dinwiddie, Ethan C; Malone, Don R
Subject: RE: [External] Sensitive Environments Survey Inquiry

The area identified is not with the jurisdiction of the NC Coastal Area Management Act.

From: Perry, Matthew <Matthew.Perry@terracon.com>
Sent: Wednesday, October 26, 2022 2:07 PM
To: Lopazanski, Mike <mike.lopazanski@ncdenr.gov>
Cc: Dinwiddie, Ethan C <Ethan.Dinwiddie@terracon.com>; Malone, Don R <Don.Malone@terracon.com>
Subject: [External] Sensitive Environments Survey Inquiry

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Hello,

I am hoping you can help me conduct a Sensitive Environments Survey of the 1,500 ft (see attached figure) surrounding our site at 204 N. Graham-Hopedale Road in Burlington, NC. The site is identified as NC GPIN #8875945707 and Alamance County PIN #139757. Per the IHSB guidance, please provide information on the following sensitive environments:

- Areas Identified Under Coastal Protection Legislation
- Coastal Barriers or Units of a Coastal Barrier Resources System

Let me know if you need any additional information to provide feedback. Thank you for your help.

Matthew Perry
Field Scientist I Environmental Services
Terracon Consultants, Inc.
2401 Brentwood Road, Suite 107 I Raleigh, NC 27604
M (252) 809-3286
matthew.perry@terracon.com I terracon.com

Terracon provides environmental, facilities, geotechnical, and materials consulting engineering services delivered with responsiveness, resourcefulness, and reliability.

Private and confidential as detailed here (www.terracon.com/disclaimer). If you cannot access the hyperlink, please e-mail sender.

North Carolina Department of Natural and Cultural Resources

State Historic Preservation Office

Ramona M. Bartos, Administrator

Governor Roy Cooper
Secretary D. Reid Wilson

Office of Archives and History
Deputy Secretary, Darin J. Waters, Ph.D.

December 7, 2022

Ethan Dinwiddie
Terracon
2401 Brentwood Road, Suite 107
Raleigh, NC 27604

ethan.dinwiddie@terracon.com

Re: Soil contamination remediation, Tarheel Army Missile Plant, 204 North Graham-Hopedale Road, Burlington, Alamance County, GS 22-2737

Dear Ethan Dinwiddie:

Thank you for your email of November 3, 2022, regarding the above-referenced undertaking. We have reviewed the submission and offer the following comments. We apologize for the delay in our response.

The property is listed in the National Register of Historic Places as the Western Electric Company – Tarheel Missile Plant (AM2021). Additionally, there is one National Register-eligible property within the 1500 receptor buffer; the North Carolina Army National Guard, Burlington Armory and Motor Vehicle Storage Complex (AM1429). Testing and remediation efforts will have no adverse effect on the Missile Plant based on the condition that direct impacts to resources contributing to its significance are avoided. The same activities are unlikely to affect the Armory Complex. Should the scope of work change, an update should be submitted to us for review and comment.

Please note that in future submissions it is not necessary to provide us with the National Register nomination for a listed property as we keep copies of those documents on file.

These comments are made in accord with G.S. 121-12(a) and Executive Order XVI. If you have questions regarding them, please contact Renee Gledhill-Earley, environmental review coordinator, at 919-814-6579 or environmental.review@ncdcr.gov. In all future communication concerning this project, please cite the above-referenced tracking number.

Sincerely,

Renee Gledhill-Earley

for Ramona Bartos, Deputy
State Historic Preservation Officer

Dinwiddie, Ethan C

From: Clarke, Craig <craig.clarke@ncagr.gov>
Sent: Monday, November 28, 2022 10:55 AM
To: Perry, Matthew
Cc: Dinwiddie, Ethan C; Malone, Don R
Subject: RE: [External] Sensitive Environments Survey Inquiry

There are no State Forests nor any NC Forest Service Property within the 1500 foot receptor buffer.

Craig K. Clarke, RF909, CPM
Director, Safety, Planning, & Analysis

Department of Agriculture & Consumer Services
NC Forest Service
512 N Salisbury St.
1616 Mail Service Center
Raleigh, NC 27699-1600

Office: 919-857-4820
Fax: 919-857-4802

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From: Perry, Matthew <Matthew.Perry@terracon.com>
Sent: Wednesday, October 26, 2022 2:02 PM
To: Clarke, Craig <craig.clarke@ncagr.gov>
Cc: Dinwiddie, Ethan C <Ethan.Dinwiddie@terracon.com>; Malone, Don R <Don.Malone@terracon.com>
Subject: [External] Sensitive Environments Survey Inquiry

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to Report Spam.

Hello,

I am hoping you can help me conduct a Sensitive Environments Survey of the 1,500 ft (see attached figure) surrounding our site at 204 N. Graham-Hopedale Road in Burlington, NC. The site is identified as NC GPIN #8875945707 and Alamance County PIN #139757. Per the IHSB guidance, please provide information on the following sensitive environments:

- State Preserves and Forests

Let me know if you need any additional information to provide feedback. Thank you for your help.

Matthew Perry
Field Scientist I Environmental Services
Terracon Consultants, Inc.
2401 Brentwood Road, Suite 107 I Raleigh, NC 27604
M (252) 809-3286
matthew.perry@terracon.com I terracon.com

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Private and confidential as detailed here (www.terracon.com/disclaimer). If you cannot access the hyperlink, please e-mail sender.

ROY COOPER
Governor
ELIZABETH S. BISER
Secretary
RICHARD E. ROGERS, JR.
Director

NORTH CAROLINA
Environmental Quality

October 27, 2022

Mr. Matthew Perry
Terracon Consultants, Inc.
2401 Brentwood Rd., Suite 107
Raleigh, NC 27604

Dear Mr. Perry,

RE: Request for information related to potential Environmentally Sensitive Areas/State-Designated Area for Protection on or adjacent to 204 N. Graham-Hopedale Rd., Burlington, Alamance County, North Carolina.

In reviewing the information on the property locate at 204 N. Graham-Hopedale Rd in Burlington, Alamance County, North Carolina, and the surround area, I have determined that this area is classified as "Environmentally Sensitive" or "State-Designated Areas for Protection or Maintenance of Aquatic Life".

Project Area
Watersheds are often named and referenced by their hydrologic unit codes (HUC). The project area is located in the Back Creek-Haw River watershed (HUC 0303000204) in the Haw River/Jordan Lake subbasin. This property drains to an unnamed tributary to Service Creek [AU#16-15] then to the Haw River [AU#16-(10.5)d] and Jordan Lake Reservoir in the Cape Fear River Basin.

Water Quality Classifications and Assessments
One mechanism used by state and federal agencies to manage and protect streams, rivers, lakes and other surface waterbodies is to establish surface water classifications. Each classification has water quality standards associated with it. In North Carolina, the water quality standards are used to determine if the waterbody is meeting or exceeding water quality standards. Many of the classifications, especially those designated to protect drinking water supplies, high or outstanding-quality waterbodies, as well as those identified as nutrient sensitive have rules in place that regulate activities (i.e., development, permitted discharge, etc.) that may impact water quality. Depending on the classification, adjacent waterbodies may have the same restrictions.

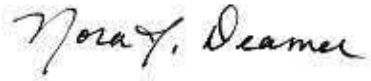
This property is located in a watershed classified as WS-V, NSW. These classifications indicate that the receiving streams in this watershed are water supply -V (WS-V), and nutrient sensitive waters (NSW) and are subject to a special management strategy specified in 15A NCAC 2B .0262 (Jordan Water Supply Nutrient Strategy).

There is no instream water quality data available for Service Creek, however the Haw River [AU# 16-10.5)d] at the confluence with Service Creek is currently impaired (exceeding criteria) and listed on the NC 2022 303(d)/305(b) (Integrated Report) list of Impaired Waters due to high fecal coliform bacteria. The Haw River is also identified as having elevated turbidity and nutrient concentrations. This segment of the Haw River has a total daily maximum load (TMDL) for fecal coliform as well as for nutrients (nitrogen and phosphorus) due to the Jordan Lake chlorophyll *a* concentrations and impairment. The Haw River drains to Jordan Lake reservoir and fall under the Jordan Lake Nutrient Management Strategy rules (15A NCAC 2B .0262-.0273). The Jordan Lake nutrient strategy rules require controls to reduce nutrient sources throughout the Haw River watershed. Additional information can be found on the DWR Nonpoint Source Planning Jordan Lake Nutrient Strategy website.

It is imperative that any activity taking place at this location protect the riparian buffers and eliminate runoff that would further degrade the fragile systems that surrounds this area. There is a need to reduce the stormwater volume, nutrients, sediment, and bacteria loading from this site. There may be specific development requirements at this location based on the Jordan Lake rules. If you have specific questions about the Jordan Lake rules, please contact the Winston-Salem Regional Office at 336-776-9800.

Please let me know if you have any questions.

Sincerely,



Nora Deamer
Division of Water Resources, Planning Section
Department of Environmental Quality
919-707-9116
nora.deamer@ncdenr.gov

NC DEPARTMENT OF
NATURAL AND CULTURAL RESOURCES

Roy Cooper, **Governor**
D. Reid Wilson, **Secretary**
Misty Buchanan
Deputy Director, Natural Heritage Program

NCNHDE-20032

November 21, 2022

Danielle Hughes
Northwind Engineering, LLC
105 Main St
Shelocta, PA 15774
RE: Tarheel Army Missile Plant - NCNHDE Report; 7021P145

Dear Danielle Hughes:

The North Carolina Natural Heritage Program (NCNHP) appreciates the opportunity to provide information about natural heritage resources for the project referenced above.

Based on the project area mapped with your request, a query of the NCNHP database indicates that there are no records for rare species, important natural communities, natural areas, and/or conservation/managed areas within the proposed project boundary. Please note that although there may be no documentation of natural heritage elements within the project boundary, it does not imply or confirm their absence; the area may not have been surveyed. The results of this query should not be substituted for field surveys where suitable habitat exists. In the event that rare species are found within the project area, please contact the NCNHP so that we may update our records.

The attached 'Potential Occurrences' table summarizes rare species and natural communities that have been documented within a one-mile radius of the property boundary. The proximity of these records suggests that these natural heritage elements may potentially be present in the project area if suitable habitat exists. Tables of natural areas and conservation/managed areas within a one-mile radius of the project area, if any, are also included in this report.

If a Federally-listed species is found within the project area or is indicated within a one-mile radius of the project area, the NCNHP recommends contacting the US Fish and Wildlife Service (USFWS) for guidance. Contact information for USFWS offices in North Carolina is found here: https://www.fws.gov/offices/Directory/ListOffices.cfm?statecode=37.

Please note that natural heritage element data are maintained for the purposes of conservation planning, project review, and scientific research, and are not intended for use as the primary criteria for regulatory decisions. Information provided by the NCNHP database may not be published without prior written notification to the NCNHP, and the NCNHP must be credited as an information source in these publications. Maps of NCNHP data may not be redistributed without permission.

The NC Natural Heritage Program may follow this letter with additional correspondence if a Dedicated Nature Preserve, Registered Heritage Area, Land and Water Fund easement, or Federally-listed species are documented near the project area.

If you have questions regarding the information provided in this letter or need additional assistance, please contact Rodney A. Butler at rodney.butler@ncdcr.gov or 919-707-8603.

Sincerely,
NC Natural Heritage Program

No Element Occurrences are Documented Within a One-mile Radius of the Project Area

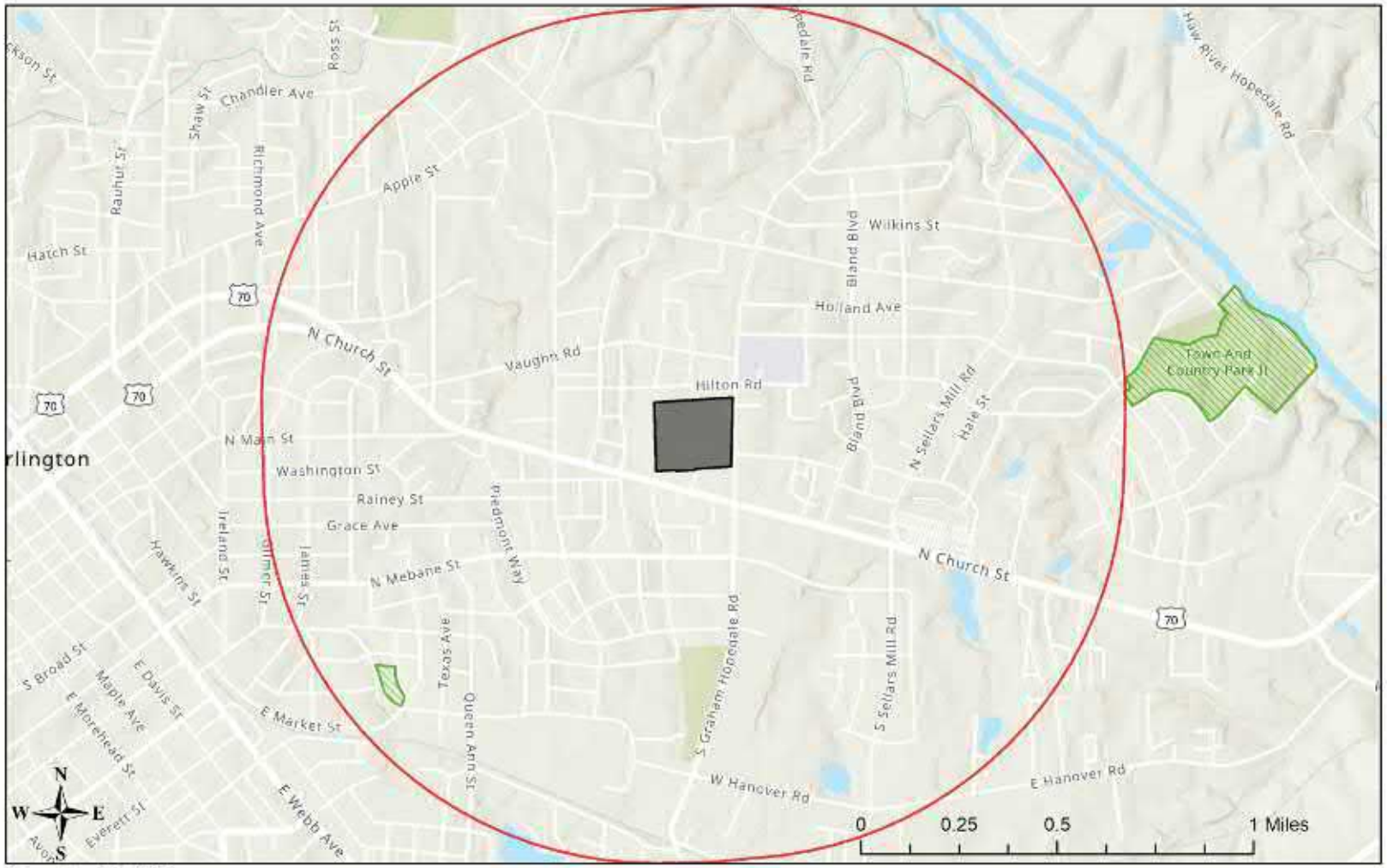
No Natural Areas are Documented Within a One-mile Radius of the Project Area

Managed Areas Documented Within a One-mile Radius of the Project Area

Managed Area Name	Owner	Owner Type
City of Burlington - Town and Country Nature Park	City of Burlington	Local Government
City of Burlington Open Space	City of Burlington	Local Government

Definitions and an explanation of status designations and codes can be found at https://ncnhde.natureserve.org/help. Data query generated on November 21, 2022; source: NCNHP, Q3, October 2022. Please resubmit your information request if more than one year elapses before project initiation as new information is continually added to the NCNHP database.

NCNHDE-20032: Tarheel Army Missile Plant - NCNHDE Report



November 21, 2022

Managed Area (MAREA)

Buffered Project Boundary

Project Boundary

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community
Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Dinwiddie, Ethan C

From: Benjamin, Pete <pete_benjamin@fws.gov>
Sent: Wednesday, October 26, 2022 2:39 PM
To: Perry, Matthew
Cc: Dinwiddie, Ethan C; Malone, Don R
Subject: Re: [EXTERNAL] Sensitive Environments Survey Inquiry

Activity at this site will have no effect on federally-listed species or other species of concerns to this office. Keep a copy of this response for your records. No further action is required.

Pete Benjamin
Field Supervisor
Raleigh ES Field Office
U.S. Fish and Wildlife Service
(M) 919-816-6408

From: Perry, Matthew <Matthew.Perry@terracon.com>
Sent: Wednesday, October 26, 2022 2:03 PM
To: Benjamin, Pete <pete_benjamin@fws.gov>
Cc: Dinwiddie, Ethan C <Ethan.Dinwiddie@terracon.com>; Malone, Don R <Don.Malone@terracon.com>
Subject: [EXTERNAL] Sensitive Environments Survey Inquiry

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Hello,

I am hoping you can help me conduct a Sensitive Environments Survey of the 1,500 ft (see attached figure) surrounding our site at 204 N. Graham-Hopedale Road in Burlington, NC. The site is identified as NC GPIN #8875945707 and Alamance County PIN #139757. Per the IHSB guidance, please provide information on the following sensitive environments:

- Endangered Species

Let me know if you need any additional information to provide feedback. Thank you for your help.

Matthew Perry
Field Scientist I Environmental Services
Terracon Consultants, Inc.
2401 Brentwood Road, Suite 107 I Raleigh, NC 27604
M (252) 809-3286
matthew.perry@terracon.com I terracon.com

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Private and confidential as detailed here (www.terracon.com/disclaimer). If you cannot access the hyperlink, please e-mail sender.

Dinwiddie, Ethan C

From: Brown, Christopher -FS <christopher.j.brown@usda.gov>
Sent: Wednesday, October 26, 2022 4:53 PM
To: Perry, Matthew
Cc: Malone, Don R; Dinwiddie, Ethan C
Subject: RE: [External Email]Sensitive Environments Survey Inquiry
Attachments: Burlington Site_Receptor Survey Map_1500.pdf

Mr. Perry,

Regarding your site at 204 N. Graham-Hopedale Road, Burlington, NC there are no Designated or Proposed Federal Wilderness or Natural Areas, National Preserves or Forests, nor Federal Land Designated for the Protection of Natural Ecosystems located within the 1,500 ft area surrounding the property.

Christopher Brown
Acting Forest Environmental Coordinator

Forest Service
National Forests in North Carolina

cell: (540) 553-2041
office: (540) 953-3570
christopher.j.brown@usda.gov

110 Southpark Drive
Blacksburg, VA 24060
www.fs.usda.gov/nfsnc

Caring for the land and serving people

From: Perry, Matthew <Matthew.Perry@terracon.com>
Sent: Wednesday, October 26, 2022 1:58 PM
To: Luczak, Heather -FS, ASHEVILLE, NC <heather.luczak@usda.gov>
Cc: Malone, Don R <Don.Malone@terracon.com>; Dinwiddie, Ethan C <Ethan.Dinwiddie@terracon.com>
Subject: [External Email]Sensitive Environments Survey Inquiry

Hello,

I am hoping you can help me conduct a Sensitive Environments Survey of the 1,500 ft (see attached figure) surrounding our site at 204 N. Graham-Hopedale Road in Burlington, NC. The site is identified as NC GPIN #8875945707 and Alamance County PIN #139757. Per the IHSB guidance, please provide information on the following sensitive environments:

- Designated and Proposed Federal Wilderness and Natural Areas
- National Preserves and Forests
- Federal Land Designated for the Protection of Natural Ecosystems

Let me know if you need any additional information to provide feedback. Thank you for your help.

Matthew Perry
Field Scientist I Environmental Services
Terracon Consultants, Inc.
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Appendix H

Lithologic Logs

BORING LOG NO. RI-SB-01

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 9

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
0.5	**CONCRETE**					
	SANDY CLAY (CL), orangish brown and gray, odor and staining not observed, moist				<0.1	
					<0.1	RI-SB-01 (4-6) VOCs 8260
		5			1.0	RI-SB-01 (2-8) SVOCs 8270, Metals 6020
					0.6	
					1.9	
		10			2.0	RI-SB-01 (10-12) VOCs 8260
11.0	**SAND (SP)**, fine to coarse grained, light brown and tan, odor and staining not observed, dry					
12.0	***Refusal at 12 Feet***					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
Explore with us
2401 Brentwood Rd Ste 107
Raleigh, NC

Boring Started: 06-20-2022	Boring Completed: 06-20-2022
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: E. Dinwiddie

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

BORING LOG NO. RI-SB-02

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 9

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
0.5	**CONCRETE**					
	SANDY CLAY (CL), some silt, gray and brown, slight petroleum odor and staining observed, moist				<0.1	RI-SB-02 (2-4) VOCs 8260
					7.5	RI-SB-02 (2-8) SVOCs 8270, Metals 6020
5.0		5			7.0	RI-SB-02 (4-6) VOCs 8260
	SANDY CLAY (CL), some silt, orangish brown, slight petroleum odor observed, staining not observed, moist to wet at 6 feet bls, Boring terminated at 8 feet bls due to perched water.				14.8	RI-SB-02 (6-8)/ DUP-SB-01 VOCs 8260
8.0	***Boring Terminated at 8 Feet***					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
Explore with us
2401 Brentwood Rd Ste 107
Raleigh, NC

Boring Started: 06-20-2022	Boring Completed: 06-20-2022
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: E. Dinwiddie

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

BORING LOG NO. RI-SB-03

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 9

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
0.5	**CONCRETE**					
	SANDY CLAY (CL), gray and brown, odor and staining not observed, moist				2.7	
					3.0	RI-SB-03 (2-6) SVOCs 8270, Metals 6020
5.0		5			1.7	
	SANDY CLAY (CL), orangish brown, odor and staining not observed, moist to wet at 12 feet bls				1.7	RI-SB-03 (6-8) VOCs 8260
					0.9	
		10			1.6	
13.0					13.4	
	SILTY SAND (SM), brown, odor and staining not observed, moist/wet, saprolitic texture	15			57.2	
					12.0	RI-SB-03 (16-18) VOCs 8260
18.0						
	Refusal at 18 Feet					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
Explore with us
2401 Brentwood Rd Ste 107
Raleigh, NC

Boring Started: 06-20-2022	Boring Completed: 06-20-2022
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: E. Dinwiddie

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BORING LOG NO. RI-SB-04

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 9

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
0.5	**CONCRETE**					
2.0	**SANDY CLAY (CL)**, gray and brown, odor and staining not observed, moist				<0.1	
3.0	**SAND (SP)**, fine grained, brown, odor and staining not observed, wet				<0.1	
	SILTY SAND (SM), fine grained, orangish brown, odor and staining not observed, moist to wet at 8 feet bls	5			<0.1	
8.0					<0.1	RI-SB-04 (6-8) VOCs 8260
	SILTY SAND (SM), fine grained, light brown and dark gray, petroleum odor observed from 11-11.5 ft bls, wet				<0.1	
		10			0.2	
14.0					0.2	
	SAND (SP), some silt, fine grained, light brown, odor and staining not observed, wet, saprolitic texture	15			4.0	RI-SB-04 (14-16) VOCs 8260
17.0					0.4	
	Refusal at 17 Feet					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
Explore with us
2401 Brentwood Rd Ste 107
Raleigh, NC

Boring Started: 06-20-2022	Boring Completed: 06-20-2022
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: E. Dinwiddie

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BORING LOG NO. RI-SB-05

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 9

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
0.5	**CONCRETE**					
	CLAYEY SAND (SC), gray and brown, odor and staining not observed, moist				<0.1	
					<0.1	RI-SB-05 (2-4) VOCs 8260
4.0	**SILTY SAND (SM)**, orangish brown and light brown, odor and staining not observed, moist to wet at 10 feet bls					
		5			<0.1	RI-SB-05 (2-8) SVOCs 8270, Metals 6020
					<0.1	
					<0.1	
		10			<0.1	RI-SB-05 (10-12) VOCs 8260
					0.7	
		15			6.0	
16.0	***Refusal at 16 Feet***					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
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Raleigh, NC

Boring Started: 06-20-2022	Boring Completed: 06-20-2022
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: E. Dinwiddie

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BORING LOG NO. RI-SB-06

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 9

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
0.5	**ASPHALT/CONCRETE**					
	SANDY CLAY (CL), gray and brown, slight petroleum odor observed, moist				<0.1	
					<0.1	
4.0	**SILTY SAND (SM)**, fine grained, orangish brown and brown, odor and staining not observed, moist to wet at 10 feet bls	5			<0.1	RI-SB-06 (4-6) VOCs 8260
					<0.1	RI-SB-06 (4-8) SVOCs 8270, Metals 6020
					<0.1	
		10			<0.1	
					<0.1	
		15			<0.1	
					<0.1	RI-SB-06 (16-18) VOCs 8260
19.5					<0.1	
	Refusal at 19.5 Feet					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
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Raleigh, NC

Boring Started: 06-20-2022	Boring Completed: 06-20-2022
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: E. Dinwiddie

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BORING LOG NO. RI-SB-07

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 9

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
0.5	**CONCRETE**					
	CLAYEY SAND (SC), gray and brown, odor and staining not observed, moist				0.4	
3.0	**SILTY SAND (SM)**, fine grained, orangish brown and brown, odor and staining not observed, moist to wet at 11 feet bls				<0.1	RI-SB-07 (2-4) VOCs 8260
		5			<0.1	RI-SB-07 (2-6) SVOCs 8270, Metals 6020
					<0.1	
					<0.1	
		10			<0.1	
					<0.1	RI-SB-07 (12-14) VOCs 8260
14.0	***Refusal at 14 Feet***					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
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Raleigh, NC

Boring Started: 06-20-2022	Boring Completed: 06-20-2022
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: E. Dinwiddie

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BORING LOG NO. RI-SB-08

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 9

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
0.5	**CONCRETE**					
	SILTY SAND (SM), some clay, gray and brown, odor and staining not observed, moist to wet from 3 to 4 feet bls				0.4	
					<0.1	RI-SB-08 (2-6) SVOCs 8270, Metals 6020
4.0	**SANDY SILT (ML)**, some clay, orangish brown, slight petroleum odor observed, moist	5			<0.1	RI-SB-08 (4-6) VOCs 8260
					<0.1	RI-SB-08 (6-8) VOCs 8260
9.0	**SILTY SAND (SM)**, orangish brown and light brown, slight petroleum odor observed, wet				<0.1	
		10			<0.1	
					<0.1	
15.0		15				
	Refusal at 15 Feet					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
Explore with us
2401 Brentwood Rd Ste 107
Raleigh, NC

Boring Started: 06-20-2022	Boring Completed: 06-20-2022
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: E. Dinwiddie

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BORING LOG NO. RI-SB-09a

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 9

GRAPHIC LOG	DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
		CONCRETE AND ABC					
	1.0	**SANDY CLAY (CL)**, gray and black, petroleum odor observed, staining observed from 1-2 feet bls, moist				111	
						110	RI-SB-09a (1-4) VOCs 8260
	4.0	***Refusal at 4 Feet***					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
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Raleigh, NC

Boring Started: 06-20-2022	Boring Completed: 06-20-2022
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: E. Dinwiddie

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

BORING LOG NO. RI-SB-09b

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 9

GRAPHIC LOG	DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
		CONCRETE WITH BRICK BENEATH				0.5	
	1.5	**SANDY CLAY (CL)**, gray and brown, odor and staining not observed, moist				0.5	RI-SB-09b (2-8) SVOCs 8270, Metals 6020
	4.0	**SANDY SILT (ML)**, some clay, orangish brown, odor and staining not observed, moist	5			<0.1	
	8.0	**SILTY SAND (SM)**, light brown, odor and staining not observed, moist to wet at 10 feet bls, saprolitic texture				<0.1	RI-SB-09b (6-8) VOCs 8260
						<0.1	
			10			2.6	RI-SB-09b (10-12) VOCs 8260
						<0.1	
			15			0.8	
	18.0					<0.1	
		Refusal at 18 Feet					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
Explore with us
2401 Brentwood Rd Ste 107
Raleigh, NC

Boring Started: 06-20-2022	Boring Completed: 06-20-2022
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: E. Dinwiddie

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BORING LOG NO. RI-SB-10

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 9

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
0.8	**CONCRETE**					
	CLAYEY SAND (SC), some silt, orangish brown, odor and staining not observed, moist				<0.1	
					<0.1	RI-SB-10 (2-4) VOCs 8260
5.0		5			<0.1	
	CLAY (CL), trace sand, orangish brown, odor and staining not observed, moist				<0.1	RI-SB-10 (6-10) SVOCs 8270, Metals 6020
					<0.1	
10.0		10				
	CLAYEY SAND (SC), orangish brown, odor and staining not observed, moist to wet at 13 feet bls				<0.1	
					<0.1	
		15			<0.1	
16.0						
	SILTY SAND (SM), light brown and brown, odor and staining not observed, wet, saprolitic texture				<0.1	
					<0.1	RI-SB-10 (18-20) VOCs 8260
20.0		20				
	Refusal at 20 Feet					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
Explore with us
2401 Brentwood Rd Ste 107
Raleigh, NC

Boring Started: 06-21-2022	Boring Completed: 06-21-2022
Drill Rig: Geoprobe 6712	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: E. Dinwiddie

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

BORING LOG NO. RI-SB-11

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 9

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
0.5	**CONCRETE**					
	CLAYEY SAND (SC), orangish brown and brown, odor and staining not observed, moist				<0.1	
					<0.1	
		5			<0.1	RI-SB-11 (4-6) VOCs 8260
					<0.1	
8.0						
	SILTY SAND (SM), orangish brown and brown, odor and staining not observed, moist				<0.1	
		10			<0.1	RI-SB-11 (10-12) VOCs 8260, SVOCs 8270, Metals 6020
					<0.1	
		15			<0.1	
					<0.1	
					<0.1	
20.0		20				
	Boring Terminated at 20 Feet					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
Explore with us
2401 Brentwood Rd Ste 107
Raleigh, NC

Boring Started: 06-21-2022	Boring Completed: 06-21-2022
Drill Rig: Geoprobe 6712	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: E. Dinwiddie

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BORING LOG NO. RI-SB-12

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 9

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
0.5	**CONCRETE AND BRICK**					
	SILTY SAND (SM), light brown, odor and staining not observed, dry				0.6	
					<0.1	RI-SB-12 (2-4) VOCs 8260
5.0	**SANDY CLAY (CL)**, light brown, odor and staining not observed, moist	5			<0.1	RI-SB-12 (2-6) SVOCs 8270, Metals 6020
					<0.1	
9.0	**SANDY CLAY (CL)**, orangish brown and brown, odor and staining not observed, moist to wet at 10 feet bls				<0.1	
		10			<0.1	
12.0	***Refusal at 12 Feet***					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

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Explore with us
2401 Brentwood Rd Ste 107
Raleigh, NC

Boring Started: 06-21-2022	Boring Completed: 06-21-2022
Drill Rig: Geoprobe 6712	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: E. Dinwiddie

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BORING LOG NO. RI-SB-13

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 9

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
0.5	**CONCRETE AND BRICK**					
	SILTY SAND (SM), light brown, odor and staining not observed, dry				1.5	
					<0.1	RI-SB-13 (2-4) VOCs 8260
5.0	**SANDY CLAY (CL)**, yellowish orange, odor and staining not observed, moist	5			<0.1	RI-SB-13 (4-6) VOCs 8260
					<0.1	RI-SB-13 (2-6) SVOCs 8270, Metals 6020
9.0	**SILTY SAND (SM)**, yellowish orange, odor and staining not observed, moist to wet at 10 feet bls				<0.1	
		10			<0.1	RI-SB-13 (10-12) VOCs 8260
12.0	***Refusal at 12 Feet***					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
Explore with us
2401 Brentwood Rd Ste 107
Raleigh, NC

Boring Started: 06-21-2022	Boring Completed: 06-21-2022
Drill Rig: Geoprobe 6712	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: E. Dinwiddie

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

BORING LOG NO. RI-SB-14

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 9

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
0.5	**CONCRETE**					
1.5	**SILTY SAND (SM)**, brown, odor and staining not observed, moist				<0.1	RI-SB-14 (0-2) VOCs 8260
	SILTY SAND (SM), some clay, orangish brown, odor and staining not observed, moist				<0.1	RI-SB-14 (0-4) SVOCs 8270, Metals 6020
		5			<0.1	
					<0.1	
					<0.1	
		10			<0.1	RI-SB-14 (10-12) VOCs 8260
					<0.1	
14.0						
	SILTY SAND (SM), light brown, odor and staining not observed, moist	15			<0.1	
					<0.1	
18.0						
	Refusal at 18 Feet					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
Explore with us
2401 Brentwood Rd Ste 107
Raleigh, NC

Boring Started: 06-21-2022	Boring Completed: 06-21-2022
Drill Rig: Geoprobe 6712	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: E. Dinwiddie

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

BORING LOG NO. RI-SB-15

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 9

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
0.5	**CONCRETE**					
1.5	**SILTY SAND (SM)**, brown, odor and staining not observed, moist				<0.1	RI-SB-15 (0-4) SVOCs 8270, Metals 6020
	SILTY SAND (SM), some clay, orangish brown, odor and staining not observed, moist				<0.1	RI-SB-15 (2-4) VOCs 8260
		5			<0.1	
					<0.1	
					<0.1	
		10			<0.1	
					0.1	RI-SB-15 (12-14) VOCs 8260
14.0	**SILTY SAND (SM)**, light brown, odor and staining not observed, moist	15			0.8	
					0.5	
					0.1	
20.0	***Boring Terminated at 20 Feet***	20				

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
Explore with us
2401 Brentwood Rd Ste 107
Raleigh, NC

Boring Started: 06-21-2022	Boring Completed: 06-21-2022
Drill Rig: Geoprobe 6712	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: E. Dinwiddie

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

BORING LOG NO. RI-SB-16

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 9

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
	SILTY CLAY (CL), dark brown and black, petroleum odor and gray staining, moist				14.0	RI-SB-16 (0-2) VOCs 8260
2.0	**CLAYEY SILT (ML)**, light brown and orange, petroleum odor observed, staining not observed, moist				48.5	RI-SB-16 (0-4) SVOCs 8270, Metals 6020
		5			175.6	RI-SB-16 (4-6)/ DUP-SB-02 VOCs 8260
6.0	**SILTY SAND (SM)**, light brown, odor and staining not observed, moist				351.9	
8.0	***Boring Terminated at 8 Feet***					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
Explore with us
2401 Brentwood Rd Ste 107
Raleigh, NC

Boring Started: 06-22-2022	Boring Completed: 06-22-2022
Drill Rig: Hand Auger	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: D. Foster

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

BORING LOG NO. RI-SB-17

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 9

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
0.5	**CONCRETE**					
	CLAYEY SAND (SC), brown and gray, petroleum odor and gray staining observed, moist				14.9	RI-SB-17 (0-2) VOCs 8260
					475	RI-SB-17 (0-6) SVOCs 8270, Metals 6020
5.0	**SILTY SAND (SM)**, light brown, slight odor observed, staining not observed, moist to wet at 10 feet bls	5			476.2	RI-SB-17 (2-4) VOCs 8260
					75	RI-SB-17 (4-6) VOCs 8260; RI-SB-17 (6-8) VOCs 8260
					228	RI-SB-17 (8-10) VOCs 8260
		10			632	
					118.3	
		15			102.4	
					77.4	
					24.3	
20.0	***Refusal at 20 Feet***	20				

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
Explore with us
2401 Brentwood Rd Ste 107
Raleigh, NC

Boring Started: 06-22-2022	Boring Completed: 06-22-2022
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: E. Dinwiddie

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

BORING LOG NO. RI-SB-18

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 9

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
0.5	**CONCRETE**					
	CLAYEY SAND (SC), brown and gray, odor and staining not observed, moist				<0.1	RI-SB-18 (0-6) SVOCs 8270, Metals 6020
3.0						
	CLAYEY SAND (SC), orangish brown, odor and staining not observed, moist				<0.1	RI-SB-18 (2-4) VOCs 8260
		5			0.1	
					1.9	RI-SB-18 (6-8) VOCs 8260
9.0						
	SILTY SAND (SM), light brown, odor and staining not observed, moist to wet at 10 feet bls				0.8	
		10			0.5	
					0.2	
		15			0.1	
					0.1	
					0.1	
20.0						
	Refusal at 20 Feet	20				

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
Explore with us
2401 Brentwood Rd Ste 107
Raleigh, NC

Boring Started: 06-22-2022	Boring Completed: 06-22-2022
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: E. Dinwiddie

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

BORING LOG NO. RI-SB-19

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 9

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
0.5	**CONCRETE**					
	CLAYEY SAND (SC), brown and gray, petroleum odor and gray staining observed, moist				0.7	RI-SB-19 (0-4) SVOCs 8270, Metals 6020
					1.4	RI-SB-19 (2-4)/ DUP-SB-03 VOCs 8260
5.0	**SILTY SAND (SM)**, light brown, slight odor observed, staining not observed, moist to wet at 10 feet bls	5			13.0	
					7.8	RI-SB-19 (6-8) VOCs 8260
					585.7	
		10			270	
					96.5	
		15			51.9	
					75.8	
					33.8	
20.0		20				
	Refusal at 20 Feet					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
Explore with us
2401 Brentwood Rd Ste 107
Raleigh, NC

Boring Started: 06-22-2022	Boring Completed: 06-22-2022
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: E. Dinwiddie

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

BORING LOG NO. RI-SB-20

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 9

GRAPHIC LOG	DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
	0.5	**CONCRETE**					
		SANDY CLAY (CL), brown and gray, odor and staining not observed, moist				<0.1	RI-SB-20 (0-2) VOCs 8260
						<0.1	RI-SB-20 (0-6) SVOCs 8270, Metals 6020
			5			1.4	RI-SB-20 (4-6) VOCs 8260
	6.0						
		SILTY SAND (SM), light brown, odor and staining not observed, moist				2.5	
						6.3	
	10.0		10				
		Boring Terminated at 10 Feet					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
Explore with us
2401 Brentwood Rd Ste 107
Raleigh, NC

Boring Started: 06-22-2022	Boring Completed: 06-22-2022
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: D. Foster

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

BORING LOG NO. RI-SB-21

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 9

GRAPHIC LOG	DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
	0.5	**CONCRETE**					
		CLAYEY SAND (SC), brown and gray, odor and staining not observed, moist				<0.1	RI-SB-20 (0-2) VOCs 8260
						<0.1	RI-SB-21 (0-4) SVOCs 8270, Metals 6020
	5.0					1.4	RI-SB-21 (2-4) VOCs 8260
		Boring Terminated at 5 Feet	5				

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
Explore with us
2401 Brentwood Rd Ste 107
Raleigh, NC

Boring Started: 06-22-2022	Boring Completed: 06-22-2022
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: D. Foster

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

BORING LOG NO. RI-SB-22

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 9

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
0.5	**CONCRETE**					
	SILTY CLAY (CL), gray and brown, odor and staining not observed, moist				1.2	RI-SB-24 (0-8) SVOCs 8270, Metals 6020
2.0	**CLAYEY SILT (ML)**, light brown, odor and staining not observed, moist					
					0.3	RI-SB-22 (2-4) VOCs 8260
		5			0.5	RI-SB-22 (4-6) VOCs 8260
					0.8	RI-SB-22 (6-8) VOCs 8260
					0.3	
10.0		10				
	Boring Terminated at 10 Feet					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
Explore with us
2401 Brentwood Rd Ste 107
Raleigh, NC

Boring Started: 06-22-2022	Boring Completed: 06-22-2022
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: D. Foster

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

BORING LOG NO. RI-SB-23

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 9

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
0.5	**ASPHALT**					
	CLAYEY SILT (ML), gray and black, odor and staining not observed, moist				26.9	
					22.3	
4.0	**CLAYEY SAND (SC)**, orangish brown, odor and staining not observed, moist	5			<0.1	RI-SB-23 (4-8) SVOCs 8270, Metals 6020
					<0.1	RI-SB-23 (6-8) VOCs 8260
					<0.1	
10.0	**CLAYEY SILT (ML)**, brown and gray, odor and staining not observed, moist	10			<0.1	
					<0.1	
		15			<0.1	
					<0.1	RI-SB-23 (16-18) VOCs 8260
					0.5	
20.0	***Boring Terminated at 20 Feet***	20				

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
Explore with us
2401 Brentwood Rd Ste 107
Raleigh, NC

Boring Started: 06-22-2022	Boring Completed: 06-22-2022
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: D. Foster

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

BORING LOG NO. RI-SB-24

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 9

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
0.5	**CONCRETE**					
	CLAYEY SAND (SC), brown and gray, odor and staining not observed, moist				1.8	RI-SB-24 (0-4) VOCs 8260
					<0.1	RI-SB-24 (0-6) SVOCs 8270, Metals 6020
5.0	**SILTY SAND (SM)**, light brown, odor and staining not observed, moist to wet at 10 feet bls	5			<0.1	
					<0.1	
					<0.1	RI-SB-24 (8-10) VOCs 8260
		10			<0.1	
12.0	***Boring Terminated at 12 Feet***					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
Explore with us
2401 Brentwood Rd Ste 107
Raleigh, NC

Boring Started: 06-24-2022	Boring Completed: 06-24-2022
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: E. Dinwiddie

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

BORING LOG NO. RI-GW-01a

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 10

GRAPHIC LOG	DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
		SILTY SAND (SM), brown, odor and staining not observed, dry					
	1.0	**CLAYEY SAND (SC)**, gray, odor and staining not observed, moist				<0.1	RI-GW-01A (0-4) Metals 6020
						<0.1	
	3.0	**SILTY SAND (SM)**, gray, odor and staining not observed, dry					
	3.5	***Refusal at 3.5 Feet***					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:
Evidence of groundwater not observed. Boring was not converted into a temporary well.

WATER LEVEL OBSERVATIONS

Terracon
Explore with us
2401 Brentwood Rd Ste 107
Raleigh, NC

Boring Started:	Boring Completed:
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: E. Dinwiddie

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

BORING LOG NO. RI-GW-01b

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 10

GRAPHIC LOG	DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
		SILTY SAND (SM), brown, odor and staining not observed, dry					
	1.0	**CLAYEY SAND (SC)**, gray, odor and staining not observed, moist				<0.1	
						<0.1	
	4.0	**SILTY SAND (SM)**, gray, odor and staining not observed, dry					
	4.5	***Refusal at 4.5 Feet***					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:
Evidence of groundwater not observed. Boring was not converted into a temporary well.

WATER LEVEL OBSERVATIONS

Terracon
Explore with us
2401 Brentwood Rd Ste 107
Raleigh, NC

Boring Started:	Boring Completed:
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: E. Dinwiddie

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

BORING LOG NO. RI-GW-01c

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 10

GRAPHIC LOG	DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
		SILTY SAND (SM), brown, no odor, dry				<0.1	
	1.0	**SILTY SAND (SM)**, gray, no odor, dry				<0.1	
	2.0	***Refusal at 2 Feet***					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:
Evidence of groundwater not observed. Boring was not converted into a temporary well.

WATER LEVEL OBSERVATIONS

Terracon
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2401 Brentwood Rd Ste 107
Raleigh, NC

Boring Started:	Boring Completed:
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: E. Dinwiddie

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

WELL LOG NO. RI-GW-01d

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 10

INSTALLATION DETAILS: Well Completion: Temporary Well

DEPTH	MATERIAL DESCRIPTION	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
	ASPHALT		
1.0			
1.5	**SILT (ML)**, reddish orange and light brown, odor and staining not observed	<0.1	RI-GW-01D (0-4) Metals 6020
	FAT CLAY (CH), greenish gray, odor and staining not observed	<0.1	
4.0			
	FAT CLAY WITH SAND (CH), greenish gray, odor and staining not observed	<0.1	
5			
7.5		<0.1	
	FAT CLAY WITH SAND (CH), light brown, odor and staining not observed		
9.0		<0.1	
10.0	**SAND (SP)**, light brown, odor and staining not observed		
10			
	SILT (ML), light brown and white, odor and staining not observed	<0.1	RI-GW-01D (11-13) TOC Walkley-Black
12.0			
12.5	**SILT (ML)**, light brown, odor and staining not observed	<0.1	
13.0	**WEATHERED ROCK**, white, odor and staining not observed		
	Refusal at 13 Feet		

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method: DPT

Abandonment Method: Boring backfilled with bentonite upon completion.

Notes:
feet bls: feet below land surface
TOC: Total organic carbon
Temporary 1-inch well set at 13 feet bls after boring completion.

WATER LEVEL OBSERVATIONS

Terracon
2401 Brentwood Rd Ste 107
Raleigh, NC

Well Started:	Well Completed:
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: D. Foster

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

WELL LOG NO. RI-GW-02

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 10

INSTALLATION DETAILS

Well Completion: Temporary Well

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
	TOPSOIL				<0.1	RI-GW-02 (0-4) Metals 6020
2.0	**SILTY CLAY (CL-ML)**, light brown, odor and staining not observed, moist				<0.1	
5.0	**LEAN CLAY (CL)**, some sand, orange, odor and staining not observed, moist	5			<0.1	
					<0.1	
8.0	**SILTY SAND (SM)**, light brown and light gray, odor and staining not observed, wet				<0.1	
		10			<0.1	
					<0.1	
		15			<0.1	RI-GW-02 (14-16) TOC Walkley-Black
16.0	***Refusal at 16 Feet***					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:
TOC: Total organic carbon
Temporary screen point set at 16 feet after boring completion.

WATER LEVEL OBSERVATIONS

Terracon
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2401 Brentwood Rd Ste 107
Raleigh, NC

Well Started:	Well Completed:
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: D. Foster

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

BORING LOG NO. RI-GW-03

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 10

GRAPHIC LOG	DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
		SILT (ML), trace sand, yellowish orange and light brown, odor and staining not observed, dry				<0.1	RI-GW-03 (0-6) Metals 6020
						<0.1	
			5			<0.1	
						<0.1	
	9.0					<0.1	
		Refusal at 9 Feet					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:
Evidence of groundwater not observed. Boring was not converted into a temporary well.

WATER LEVEL OBSERVATIONS

Terracon
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Raleigh, NC

Boring Started:	Boring Completed:
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: D. Foster

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

WELL LOG NO. RI-GW-04

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 10

INSTALLATION DETAILS

Well Completion: Temporary Well

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
0.5	**SILTY SAND (SM)**, brown, odor and staining not observed, dry					
	SANDY LEAN CLAY (CL), orangish brown, odor and staining not observed, moist				<0.1	RI-GW-04 (0-6) Metals 6020
3.0	**CLAYEY SAND (SC)**, reddish brown and orangish brown, odor and staining not observed, moist to wet at 8 feet bls				<0.1	
		5			<0.1	
					<0.1	
					<0.1	
		10			<0.1	
					<0.1	RI-GW-04 (12-15) TOC Walkley-Black
		15			<0.1	
16.0	Push screen point to 22 feet bls - no recovery					
		20				
22.0	***Refusal at 22 Feet***					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:
feet bls: feet below land surface
TOC: Total organic carbon
Temporary screen point set at 22 feet after boring completion.

WATER LEVEL OBSERVATIONS

Terracon
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Raleigh, NC

Well Started:	Well Completed:
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: E. Dinwiddie

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WELL LOG NO. RI-GW-05

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 10

INSTALLATION DETAILS

Well Completion: Temporary Well

DEPTH	MATERIAL DESCRIPTION	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
	SANDY LEAN CLAY (CL), light brown and orange, odor and staining not observed, dry to wet at 5 feet bls	0.1	RI-GW-05 (0-4) Metals 6020
		<0.1	
5		<0.1	
6.0	**SILTY CLAY (CL-ML)**, light brown and green, odor and staining not observed, wet		
7.0	**SILTY CLAY (CL-ML)**, light brown, odor and staining not observed, moist	<0.1	
		<0.1	RI-GW-05 (8-12) TOC Walkley-Black
10		<0.1	
		<0.1	
12.5	***Refusal at 12.5 Feet***		

GRAPHIC LOG | DEPTH (ft) | WATER LEVEL OBSERVATIONS | SAMPLE TYPE

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:
feet bls: feet below land surface
TOC: Total organic carbon
Temporary 1-inch well set at 12.5 feet bls after boring completion.

WATER LEVEL OBSERVATIONS

Terracon
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Raleigh, NC

Well Started:	Well Completed:
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: D. Foster

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

WELL LOG NO. RI-GW-06

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 10

INSTALLATION DETAILS

Well Completion: Temporary Well

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
	SANDY LEAN CLAY (CL), light brown, odor and staining not observed				19.0	
					<0.1	RI-GW-06 (0-6) Metals 6020
5.0		5			<0.1	
	LEAN CLAY (CL), light brown and orange, odor and staining not observed				<0.1	RI-GW-06 (6-8) TOC Walkley-Black
8.0						
	SILTY CLAY (CL-ML), light brown, odor and staining not observed				<0.1	
9.0						
	Refusal at 9 Feet					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:
feet bls: feet below land surface
TOC: Total organic carbon
Temporary 1-inch well set at 9 feet bls after boring completion.

WATER LEVEL OBSERVATIONS

Terracon
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Raleigh, NC

Well Started:	Well Completed:
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: D. Foster

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WELL LOG NO. RI-GW-07

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 10

INSTALLATION DETAILS

Well Completion: Temporary Well

DEPTH	MATERIAL DESCRIPTION	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
	SANDY CLAY (CL), dark brown and gray, odor and staining not observed	<0.1	RI-GW-07 (0-4) Metals 6020
2.0	**SILTY CLAY (CL-ML)**, light brown and orange, odor and staining not observed	<0.1	
		<0.1	
		<0.1	
		<0.1	
		<0.1	
		<0.1	
		<0.1	RI-GW-07 (14-16) TOC Walkley-Black
16.0			
	Push boring to 19 feet bls - no recovery		
19.0	***Refusal at 19 Feet***		

DEPTH (ft): 5, 10, 15

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:
feet bls: feet below land surface
TOC: Total organic carbon
Temporary 1-inch well set at 19 feet bls after boring completion.

WATER LEVEL OBSERVATIONS

Terracon
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Raleigh, NC

Well Started:	Well Completed:
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: D. Foster

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

WELL LOG NO. RI-GW-08

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 10

INSTALLATION DETAILS

Well Completion: Temporary Well

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
	SANDY CLAY (CL), dark brown and gray, odor and staining not observed				<0.1	
2.0	**SILTY CLAY (CL-ML)**, light brown and orange, odor and staining not observed				<0.1	
		5			<0.1	
					<0.1	
					<0.1	
		10			<0.1	
					<0.1	
					<0.1	
		15			<0.1	
16.5	***Refusal at 16.5 Feet***					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:
feet bls: feet below land surface
Temporary 1-inch well set at 16.5 feet bls after boring completion.

WATER LEVEL OBSERVATIONS

Terracon
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2401 Brentwood Rd Ste 107
Raleigh, NC

Well Started:	Well Completed:
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: E. Dinwiddie

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

WELL LOG NO. RI-GW-09

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 10

GRAPHIC LOG	DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
		SANDY CLAY (CL), dark brown and gray, odor and staining not observed					
	2.0	**SILTY CLAY (CL-ML)**, light brown and orange, odor and staining not observed	5 10				
	12.0	***Refusal at 12 Feet***					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
DPT

Abandonment Method:
Boring backfilled with bentonite upon completion.

Notes:
Evidence of groundwater not observed. Boring was not converted into a temporary well.

WATER LEVEL OBSERVATIONS

Terracon
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Raleigh, NC

Well Started:	Well Completed:
Drill Rig: Geoprobe 5410	Driller: Regional Probing Services
Project No.: 7021P145	Logged By: E. Dinwiddie

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

WELL LOG NO. MW-137

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 2

INSTALLATION DETAILS

Well Completion: Surface Mount

DEPTH	MATERIAL DESCRIPTION	OVA/PID (ppm)
0.5	**ASPHALT**, odor and staining not observed, dry	
7.0	**SANDY CLAY (CL-ML)**, brown to tan, odor and staining not observed, moist	<0.1
		<0.1
13.5	**SANDY SILT (ML)**, trace clay, brown to tan, odor and staining not observed, dry, very hard from 13-13.5 ft bls (weathered rock)	<0.1
	Auger Refusal at 13.5 Feet	

DEPTH (ft): 5, 10

WATER LEVEL OBSERVATIONS: ▽

SAMPLE TYPE

SAMPLE SENT TO LAB (ID NUMBER)

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method: 4-1/4-inch Auger

Abandonment Method:

Notes:

ft bls: feet below land surface
Samples collected intermittently via split spoon sampling methods, however, blow counts were not obtained.

WATER LEVEL OBSERVATIONS

▽ *3.36 ft bTOC on 8/8/2022*

Terracon
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2401 Brentwood Rd Ste 107
Raleigh, NC

Well Started: 07-18-2022	Well Completed: 07-18-2022
Drill Rig: Ingersoll Rand A300	Driller: Parratt-Wolff
Project No.: 7021P145	Logged By: C. Parra

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

WELL LOG NO. MW-138

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 2

INSTALLATION DETAILS

Well Completion: Surface Mount

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
	CLAYEY SILT (ML), orangish brown, odor and staining not observed, dry				<0.1	
					<0.1	
5.0	**SILTY CLAY (CL-ML)**, orangish brown, odor and staining not observed, moist	5				
					<0.1	
10.0	**CLAY (CL)**, orangish brown, odor and staining not observed, moist	10	▽			
					<0.1	
14.0	***Auger Refusal at 14 Feet***					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method: 4-1/4-inch Auger

Abandonment Method:

Notes:

ft bls: feet below land surface
Samples collected intermittently via split spoon sampling methods, however, blow counts were not obtained.

WATER LEVEL OBSERVATIONS

▽ *12.56 ft bTOC on 8/8/2022*

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Raleigh, NC

Well Started: 07-18-2022	Well Completed: 07-18-2022
Drill Rig: Ingersoll Rand A300	Driller: Parratt-Wolff
Project No.: 7021P145	Logged By: C. Parra

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

WELL LOG NO. MW-139

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

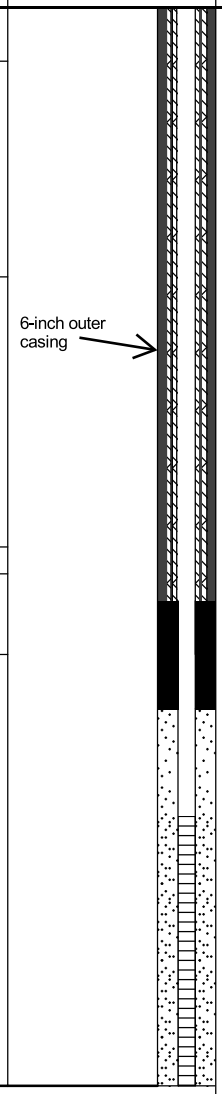
SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 2

INSTALLATION DETAILS

Well Completion: Surface Mount

DEPTH	MATERIAL DESCRIPTION	OVA/PID (ppm)
0.0–1.0	**FILL GRAVEL**	
1.0–5.0	**SANDY SILT (ML)**, light brown, odor and staining not observed, dry	<0.1; <0.1
5.0–10.0	**CLAYEY SAND (SC)**, light brown, odor and staining not observed, moist	<0.1
10.0–10.5	**SILTY CLAY (CL-ML)**, light brown to gray, odor and staining not observed, moist	
10.5–12.0	greenish gray, odor and staining not observed, auger refusal at 12 feet bls, set 6-inch outer casing at 12 feet bls and switch to air rotary hammer	
12.0–20.0	**META-MAFIC BEDROCK**, greenish gray, Used air rotary hammer from 12 to 20 feet bls. Fracture observed at 16 feet bls based on rock fragments with weather faces and high water output. Hard drilling after fracture.	
20.0	***Boring Terminated at 20 Feet***	



WATER LEVEL OBSERVATIONS

SAMPLE TYPE

SAMPLE SENT TO LAB (ID NUMBER)

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
4-1/4-inch Auger and air rotary hammer

Abandonment Method:

Notes:
feet bls: feet below land surface
Samples collected intermittently via split spoon sampling methods, however, blow counts were not obtained.
Type III monitoring well. 6-inch outer casing set at 12 feet bls.

WATER LEVEL OBSERVATIONS

7.25 ft bTOC on 8/8/2022

Terracon
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2401 Brentwood Rd Ste 107
Raleigh, NC

Well Started: 07-19-2022	Well Completed: 07-21-2022
Drill Rig: Ingersoll Rand A300	Driller: Parratt-Wolff
Project No.: 7021P145	Logged By: C. Parra

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

WELL LOG NO. MW-140

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 2

INSTALLATION DETAILS

Well Completion: Surface Mount

DEPTH	MATERIAL DESCRIPTION	OVA/PID (ppm)
	SILTY SAND (SM), tan and brown, odor and staining not observed, dry	<0.1
		13.7
		<0.1
		<0.1
16.0		
	SILTY SAND (SM), with gravel, brown, odor and staining not observed, dry, very hard from 16-22 ft bls (possible weathered rock), auger refusal at 22 feet bls, switch to air rotary hammer	<0.1
22.0		
	META-GRANITE BEDROCK, Used air rotary hammer from 22 to 50 feet bls. 6-inch outer casing set at 23.5 feet bls. Fractures not observed in bedrock during boring advancement	
50.0		
	Boring Terminated at 51 Feet	

6-inch outer casing

DEPTH (ft): 5, 10, 15, 20, 25, 30, 35, 40, 45, 50

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

SAMPLE SENT TO LAB (ID NUMBER)

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
4-1/4-inch Auger and air rotary hammer

Abandonment Method:

Notes:
feet bls: feet below land surface
Samples collected intermittently via split spoon sampling methods, however, blow counts were not obtained.
Type III monitoring well. 6-inch outer casing set at 23.5 feet bls.

WATER LEVEL OBSERVATIONS

18.19 ft bTOC on 8/8/2022

Terracon
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2401 Brentwood Rd Ste 107
Raleigh, NC

Well Started: 07-19-2022	Well Completed: 07-29-2022
Drill Rig: Ingersoll Rand A300	Driller: Parratt-Wolff
Project No.: 7021P145	Logged By: C. Parra

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

WELL LOG NO. MW-141

PROJECT: Tarheel Army Missile Plant Remedial Investigation - 2022

CLIENT: U.S. Army Corps of Engineers Savannah, Georgia

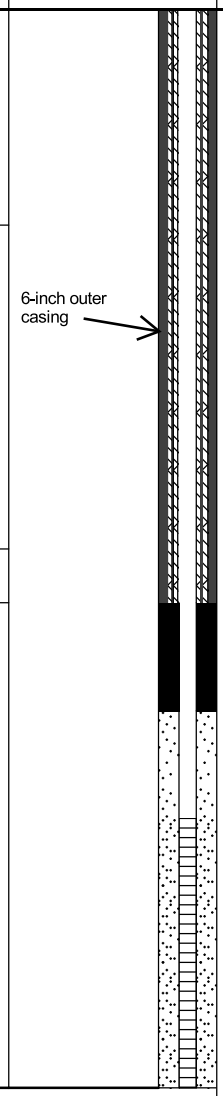
SITE: 204 N. Graham-Hopedale Rd Burlington, North Carolina

LOCATION See Figure 2

INSTALLATION DETAILS

Well Completion: Surface Mount

DEPTH	MATERIAL DESCRIPTION	OVA/PID (ppm)
	SANDY SILT (ML), red to orangish brown, odor and staining not observed, dry	<0.1
4.0		
	CLAYEY SILT (CL-ML), red and brown, odor and staining not observed, dry	<0.1
10.0		<0.1
11.0	**CLAYEY SILT (CL-ML)**, red to light brown, odor and staining not observed, dry, auger refusal at 11 ft bls, 6-inch outer casing set at 11 feet bls and switch to air rotary hammer	
	META-MAFIC BEDROCK, Used air rotary hammer from 11 to 20 feet bls. Water-bearing fracture observed at 16.5 feet bls.	
20.0		
	Boring Terminated at 20 Feet	



The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
4-1/4-inch Auger and air rotary hammer

Abandonment Method:

Notes:
feet bls: feet below land surface
Samples collected intermittently via split spoon sampling methods, however, blow counts were not obtained.
Type III monitoring well. 6-inch outer casing set at 11 feet bls.

WATER LEVEL OBSERVATIONS

12.94 ft bTOC on 8/8/2022

Terracon
Explore with us
2401 Brentwood Rd Ste 107
Raleigh, NC

Well Started: 07-20-2022	Well Completed: 07-22-2022
Drill Rig: Geoprobe 7822	Driller: Parratt-Wolff
Project No.: 7021P145	Logged By: C. Parra

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG TAMP_WELL AND SOIL BORING LOGS.GPJ TERRACON_DATATEMPLATE.GDT 12/16/22

Appendix I

Well Construction Records

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

Lawrence D. Opper

Well Contractor Name (or well owner personally abandoning well on his/her property)

NC Well Contractor Certification Number

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:	
☐Agricultural	☐Municipal/Public
☐Geothermal (Heating/Cooling Supply)	☐Residential Water Supply (single)
☐Industrial/Commercial	☐Residential Water Supply (shared)
☐Irrigation	
Non-Water Supply Well:	
☑Monitoring	☐Recovery
Injection Well:	
☐Aquifer Recharge	☐Groundwater Remediation
☐Aquifer Storage and Recovery	☐Salinity Barrier
☐Aquifer Test	☐Stormwater Drainage
☐Experimental Technology	☐Subsidence Control
☐Geothermal (Closed Loop)	☐Tracer
☐Geothermal (Heating/Cooling Return)	☐Other (explain under 7g)

4. Date well(s) abandoned: 6/23/2022-6/24/2022

5a. Well location:

Facility/Owner Name

Facility ID# (if applicable)

Physical Address, City, and Zip

County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36.0981223 **N** _____ **W**

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

*Attach well construction record(s) if available. For multiple injection or non-water supply wells **ONLY** with the same construction/abandonment, you can submit one form.*

6a. Well ID#: See 7g

6b. Total well depth: 9-24 **(ft.)**

6c. Borehole diameter: well dia: 1 **(in.)**

6d. Water level below ground surface: approx 8-12 **(ft.)**

6e. Outer casing length (if known): _____ **(ft.)**

6f. Inner casing/tubing length (if known): _____ **(ft.)**

6g. Screen length (if known): 4-10 **(ft.)**

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: 7

*For multiple injection or non-water supply wells **ONLY** with the same construction/abandonment, you can submit one form.*

7b. Approximate volume of water remaining in well(s): 0 **(gal.)**

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

☐ Neat Cement Grout	☑ Bentonite Chips or Pellets
☐ Sand Cement Grout	☐ Dry Clay
☐ Concrete Grout	☐ Drill Cuttings
☐ Specialty Grout	☐ Gravel
☐ Bentonite Slurry	☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

Bentonite .5 lbs/ft (5-12lbs/well)

7g. Provide a brief description of the abandonment procedure:

Removed well and backfilled boring with hydrated bentonite. Capped with concrete where applicable.

RI-GW-1 (13'), RI-GW-2 DPT (23'), RI-GW-4 DPT(24')

RI-GW-5 (13'), RI-GW-6 (9'), RI-GW-7 (19'), RI-GW-8 (16')

8. Certification:

Signature of Certified Well Contractor or Well Owner

Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. For All Wells: Submit this form within 30 days of completion of well abandonment to the following:

Division of Water Quality, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

10b. For Injection Wells: In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

Gary Ellingworth

Well Contractor Name

3367

NC Well Contractor Certification Number

Parratt-Wolff, Inc.

Company Name

2. Well Construction Permit #: _____

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

- ☐ Agricultural
- ☐ Municipal/Public
- ☐ Geothermal (Heating/Cooling Supply)
- ☐ Residential Water Supply (single)
- ☐ Industrial/Commercial
- ☐ Residential Water Supply (shared)
- ☐ Irrigation

Non-Water Supply Well:

- ☑ Monitoring
- ☐ Recovery

Injection Well:

- ☐ Aquifer Recharge
- ☐ Groundwater Remediation
- ☐ Aquifer Storage and Recovery
- ☐ Salinity Barrier
- ☐ Aquifer Test
- ☐ Stormwater Drainage
- ☐ Experimental Technology
- ☐ Subsidence Control
- ☐ Geothermal (Closed Loop)
- ☐ Tracer
- ☐ Geothermal (Heating/Cooling Return)
- ☐ Other (explain under #21 Remarks)

4. Date Well(s) Completed: 7-18-22 **Well ID#** MW-137

5a. Well Location:

Northside Presbyterian Church

Facility/Owner Name

Facility ID# (if applicable)

, Burlington

Physical Address, City, and Zip

Alamance

County

139783

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36.100211 N -79.407505 W

6. Is (are) the well(s): ☑ Permanent or ☐ Temporary

7. Is this a repair to an existing well: ☐ Yes or ☑ No

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. Number of wells constructed: 1

For multiple injection or non-water supply wells ONLY with the same construction, you can submit one form.

9. Total well depth below land surface: 13.8 (ft.)

For multiple wells list all depths if different (example- 3@200' and 2@100')

10. Static water level below top of casing: 13 (ft.)

If water level is above casing, use "-"

11. Borehole diameter: 2 (in.)

12. Well construction method: 4 1/4 HSA, 2" split spoons

(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) _____ **Method of test:** _____

13b. Disinfection type: _____ **Amount:** _____

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
0 ft.	13 ft.	Wet
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0 ft.	3.8 ft.	2 in.	sch40	pvc
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
3.8 ft.	13.8 ft.	2 in.	.010	sch40	pvc
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0 ft.	.5 ft.	Portland Cem	Tremie
.5 ft.	1.5 ft.	Bentonite Chi	Tremie
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
1.5 ft.	13.8 ft.	#1 Sand	Tremie
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS

22. Certification:

Gary Ellingworth 8-3-22

Signature of Certified Well Contractor Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C-0106 or 15A NCAC 02C-0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

Gary Ellingworth

Well Contractor Name

3367

NC Well Contractor Certification Number

Parratt-Wolff, Inc.

Company Name

2. Well Construction Permit #: _____

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

☐ Agricultural ☐ Municipal/Public

☐ Geothermal (Heating/Cooling Supply) ☐ Residential Water Supply (single)

☐ Industrial/Commercial ☐ Residential Water Supply (shared)

☐ Irrigation

Non-Water Supply Well:

☒ Monitoring ☐ Recovery

Injection Well:

☐ Aquifer Recharge ☐ Groundwater Remediation

☐ Aquifer Storage and Recovery ☐ Salinity Barrier

☐ Aquifer Test ☐ Stormwater Drainage

☐ Experimental Technology ☐ Subsidence Control

☐ Geothermal (Closed Loop) ☐ Tracer

☐ Geothermal (Heating/Cooling Return) ☐ Other (explain under #21 Remarks)

4. Date Well(s) Completed: 7-18-22 **Well ID#** MW-138

5a. Well Location:

Khalid Sayyed Shahid Ali

Facility/Owner Name

Facility ID# (if applicable)

301 North Cobb, Burlington

Physical Address, City, and Zip

Alamance

County

139479

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36.099512 N -79.411204 W

6. Is (are) the well(s): ☒ **Permanent** or ☐ **Temporary**

7. Is this a repair to an existing well: ☐ Yes or ☒ No

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. Number of wells constructed: 1

For multiple injection or non-water supply wells ONLY with the same construction, you can submit one form.

9. Total well depth below land surface: 14 **(ft.)**

For multiple wells list all depths of different (example- 3@200' and 2@100')

10. Static water level below top of casing: 9 **(ft.)**

If water level is above casing, use "+"

11. Borehole diameter: 2 **(in.)**

12. Well construction method: 4 1/4 HSA, 2" split spoons

(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) _____ **Method of test:** _____

13b. Disinfection type: _____ **Amount:** _____

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
0 ft.	9 ft.	Wet
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0 ft.	4 ft.	2 in.	sch40	pvc
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
4 ft.	14 ft.	2 in.	.010	sch40	pvc
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0 ft.	1 ft.	Portland Cem	Tremie
1 ft.	2 ft.	Bentonite Chi	Tremie
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
2 ft.	14 ft.	#1 Sand	Tremie
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS

8" FMC

2' Concrete Pad

22. Certification:

Gary Ellingworth 8-2-22

Signature of Certified Well Contractor Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0108 or 15A NCAC 02E .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:
Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

Gary Ellingworth

Well Contractor Name

3367

NC Well Contractor Certification Number

Parratt-Wolff, Inc.

Company Name

2. Well Construction Permit #: _____

List all applicable well permits (i.e. County, State, Variance, Aquifer, etc.)

3. Well Use (check well use):

Water Supply Well:

☐ Agricultural ☐ Municipal/Public

☐ Geothermal (Heating/Cooling Supply) ☐ Residential Water Supply (single)

☐ Industrial/Commercial ☐ Residential Water Supply (shared)

☐ Irrigation

Non-Water Supply Well:

☒ Monitoring ☐ Recovery

Injection Well:

☐ Aquifer Recharge ☐ Groundwater Remediation

☐ Aquifer Storage and Recovery ☐ Salinity Barrier

☐ Aquifer Test ☐ Stormwater Drainage

☐ Experimental Technology ☐ Subsidence Control

☐ Geothermal (Closed Loop) ☐ Tracer

☐ Geothermal (Heating/Cooling Return) ☐ Other (explain under #21 Remarks)

4. Date Well(s) Completed: 7-21-22 **Well ID#** MW-139

5a. Well Location:

Central Park Burlington LLC

Facility/Owner Name — Facility ID# (if applicable)

1708 10, Hilton Road Burlington

Physical Address, City, and Zip

Alamance — 139443

County — Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:
(If well field, one lat/long is sufficient)

36.098354 N -79.410708 W

6. Is (are) the well(s): ☒ Permanent or ☐ Temporary

7. Is this a repair to an existing well: ☐ Yes or ☒ No

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. Number of wells constructed: 1

For multiple injection or non-water supply wells ONLY with the same construction, you can submit one form.

9. Total well depth below land surface: 20 (ft.)

For multiple wells list all depths if different (example: 3@200' and 2@100')

10. Static water level below top of casing: unknown (ft.)

If water level is above casing, use "+"

11. Borehole diameter: 2 (in.)

12. Well construction method: 4 1/4 HSA, 2" split spoons; 8 1/4 HSA, 8" pvc, 8" Air Rotary

(i.e. digs, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) _____ **Method of test:** _____

13b. Disinfection type: _____ **Amount:** _____

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
ft.	ft.	
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0 ft.	12 ft.	6 in.	sch40	pvc

16. INNER CASING OR TUBING (sealed well)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0 ft.	15 ft.	2 in.	sch40	pvc
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
15 ft.	20 ft.	2 in.	.010	sch40	pvc
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0 ft.	12 ft.	Portland Cem	Tremie
0 ft.	11 ft.	Portland Cem	Tremie
11 ft.	13 ft.	Bentonite Chi	Tremie

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
13 ft.	20 ft.	#1 Sand	Tremie
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS

8" FMC

2' Concrete

22. Certification:

Gary Ellingworth — 8-2-22

Signature of Certified Well Contractor — Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0108 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

Virgil Wilson

Well Contractor Name

4473

NC Well Contractor Certification Number

Parratt-Wolff, Inc.

Company Name

2. Well Construction Permit #: _____

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:	
☐ Agricultural	☐ Municipal/Public
☐ Geothermal (Heating/Cooling Supply)	☐ Residential Water Supply (single)
☐ Industrial/Commercial	☐ Residential Water Supply (shared)
☐ Irrigation	
Non-Water Supply Well:	
☒ Monitoring	☐ Recovery
Injection Well:	
☐ Aquifer Recharge	☐ Groundwater Remediation
☐ Aquifer Storage and Recovery	☐ Salinity Barrier
☐ Aquifer Test	☐ Stormwater Drainage
☐ Experimental Technology	☐ Subsidence Control
☐ Geothermal (Closed Loop)	☐ Tracer
☐ Geothermal (Heating/Cooling Return)	☐ Other (explain under #21 Remarks)

4. Date Well(s) Completed: 7-29-22 **Well ID#** MW-140

5a. Well Location:

Norton Ronald Lee

Facility/Owner Name — Facility ID# (if applicable)

1708 10, Hilton Road Burlington

Physical Address, City, and Zip

Alamance — 139768

County — Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:
(if well field one lat/long is sufficient)

36.099685 N -79.409132 W

6. Is (are) the well(s): ☒ **Permanent** or ☐ **Temporary**

7. Is this a repair to an existing well: ☐ Yes or ☒ No

If this is a repair, fill out known well construction information and explain the nature of the repair under 21 remarks section or on the back of this form.

8. Number of wells constructed: 1

For multiple injection or non-water supply wells ONLY with the same construction, you can submit one form.

9. Total well depth below land surface: 50 (ft.)

For multiple wells list all depths if different (example- 3@200' and 2@100')

10. Static water level below top of casing: unknown (ft.)

If water level is above casing, use "+"

11. Borehole diameter: 2 (in.)

12. Well construction method: 4 1/4 HSA, 2" split spoons; 8 1/4 HSA, 8" pvc, 8" Air Rotary

(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) _____ **Method of test:** _____

13b. Disinfection type: _____ **Amount:** _____

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
ft.	ft.	
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0 ft.	23.5 ft.	6 in.	sch40	pvc

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0 ft.	40 ft.	2 in.	sch40	pvc
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
40 ft.	50 ft.	2 in.	.010	sch40	pvc
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0.5 ft.	26 ft.	Portland Cem	Tremie
26 ft.	28 ft.	Bentonite Chi	Tremie
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
28 ft.	51 ft.	#1 Sand	Tremie
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS

8" FMC

24" Sonotube

22. Certifications

Signature of Certified Well Contractor — Date: 7-31-22

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:
Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

Gary Ellingworth

Well Contractor Name

3367

NC Well Contractor Certification Number

Parratt-Wolff, Inc.

Company Name

2. Well Construction Permit #: _____

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

☐Agricultural ☐Municipal/Public

☐Geothermal (Heating/Cooling Supply) ☐Residential Water Supply (single)

☐Industrial/Commercial ☐Residential Water Supply (shared)

☐Irrigation

Non-Water Supply Well:

☑Monitoring ☐Recovery

Injection Well:

☐Aquifer Recharge ☐Groundwater Remediation

☐Aquifer Storage and Recovery ☐Salinity Barrier

☐Aquifer Test ☐Stormwater Drainage

☐Experimental Technology ☐Subsidence Control

☐Geothermal (Closed Loop) ☐Tracer

☐Geothermal (Heating/Cooling Return) ☐Other (explain under #21 Remarks)

4. Date Well(s) Completed: 7-22-22 **Well ID#** MW-141

5a. Well Location:

Piedmont Rescue Mission Inc

Facility/Owner Name _____ Facility ID# (if applicable)

1612 Hilton Road Burlington

Physical Address, City, and Zip

Alamance

County

139485

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:
(If well field, one lat/long is sufficient)

36.099685 N -79.410270 W

6. Is (are) the well(s): ☑**Permanent** or ☐**Temporary**

7. Is this a repair to an existing well: ☐Yes or ☑No

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. Number of wells constructed: 1

For multiple injection or non-water supply wells ONLY with the same construction, you can submit one form.

9. Total well depth below land surface: 20 (ft.)

For multiple wells list all depths if different (example- 3@200' and 2@100').

10. Static water level below top of casing: unknown (ft.)

If water level is above casing, use "+".

11. Borehole diameter: 2 (in.)

12. Well construction method: 4 1/4 HSA, 2" split spoons; & 4 1/4 HSA, 8" pvc, 8" Air Rotary

(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) _____ **Method of test:** _____

13b. Disinfectant type: _____ **Amount:** _____

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
ft.	ft.	
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0 ft.	11 ft.	6 in.	sch40	pvc

16. INNER CASING OR TUBING (continuous closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0 ft.	15 ft.	2 in.	sch40	pvc
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
15 ft.	20 ft.	2 in.	.010	sch40	pvc
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0 ft.	11 ft.	Portland Cem	Tremie
0 ft.	11 ft.	Portland Cem	Tremie
11 ft.	13 ft.	Bentonite Chi	Tremie

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
13 ft.	20 ft.	#1 Sand	Tremie
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS

8" FMC

2' Pad

22. Certification:

Gary Ellingworth 8-2-22

Signature of Certified Well Contractor Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:
Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

Appendix J

Groundwater Gauging and Sample Logs

Table 1
Groundwater Monitoring Well Construction Summary
Tarheel Army Missile Plant
240 Graham-Hopedale Road, Burlington, NC
Terracon Project No. 7021P145

WELL CONSTRUCTION DETAILS									HYDROGEOLOGY SUMMARY			
Well ID	Install Date	Well Construction	Drilling Method	Refusal	TOC (ft msl)	OC (ft bls)	Well Depth (ft bls)	Screen (ft bls)	Geologic Unit (see code)	Gauging Date	Water Depth (ft bTOC)	Water Elev. (ft msl)
MW-2	12/13/91	2" PVC	HSA	18.5	596.91		18.5	7-17	Saprolite		4.67	
MW-5	12/17/91	2" PVC	HSA	--	610.42	–	24	13.5 23.5	Saprolite		5 15.65	
MW-11	12/18/91	2" PVC	HSA	–	604.61	–	20.5	10-20	Saprolite		11 10.52	
MW-101	05/11/93	2" PVC	HSA/Air	16	604.80	--	24.9	14.9-24.9	Bedrock		101 13.84	
MW-102	05/11/93	2" PVC	HSA	-	595.76	--	16	6-16	Saprolite		102 6.21	
MW-103	05/11/93	2" PVC	HSA/Air	15	595.69	--	19	9-19	Sap/Bedrock		103 3.38	
MW-104	05/12/93	2" PVC	HSA/Air	6.5	602.90	--	27	17 27	Bedrock		104 24.27	
MW-105	05/12/93	2" PVC	HSA/Air	Unknown	608.31	--	27.5	17.5 27.5	Bedrock		105 22.30	
MW-106	05/17/93	2" PVC	HSA/Air	14	604.79	--	16.5	6.5-16.5	Sap/Bedrock		106 10.38	
MW-107	05/17/93	2" PVC	HSA	--	604.15	--	23	13-23	Saprolite		107 10.21	
MW 108	05/24/93	2" PVC	HSA	--	599.45	--	15.5	5.5-15.5	Saprolite		108 6.61	
MW 109	05/26/93	2" PVC	HSA	--	597.31		14.5	4.5-14.5	Sap/Bedrock		109 5.18	
MWC-1	12/07/93	2" PVC	HSA	--	NM		30	19.6 29	Saprolite		MWC-1	
MW-110	08/09/94	2" PVC	HSA/Air	15	603.25	–	35	25 35	Bedrock		110 21.56	
MW-111	08/09/94	2" PVC	HSA/Air	21	603.82	–	35	25-35	Bedrock		111 22.80	
MW-112	08/09/94	2" PVC	HSA/Air	13	602.63	–	35	25-35	Concrete?		112 9.23	
MW-113	02/07/95	2" PVC	HSA	–	603.06	–	28.6	18.6-28.6	Saprolite		113 9.82	
MW-114	04/04/95	2" PVC	HSA/Air	22.2	595.93	--	24	14-24	Sap/Bedrock		114 3.92	
MW-115	09/12/95	2" PVC	HSA/Air	13	596.51	--	14.5	4.5-14.5	Sap/Bedrock		115 4.50	
MW-116	09/11/95	2" PVC	HSA	–	603.76		33	23-33	Saprolite		116 10.44	
MW-117	09/12/95	2" PVC	HSA/Air	Variable	604.04		23	13 23	Sap/Bedrock		117 10.46	
MW-118	09/18/95	2" PVC	HSA	–	597.01	.	18	8 18	Saprolite		81 4.65	
PZ 1	04/03/98	1" PVC	HSA/Core	34.5	NM	--	45	37 45	Bedrock			
PT 1	05/31/04	6" PVC	Air	14	598.51	--	16	6-16	WR/Bedrock			
PT-2	05/31/04	6" PVC	Air	15	599.06	--	17	7-17	WR/Bedrock			
PT-3	05/31/04	6" PVC	Air	22	598.52	--	24	14-24	WR/Bedrock			
PT-4	05/31/04	6" PVC	Air	28	600.74		30	20-30	WR/Bedrock			
PT 5	05/31/04	6" PVC	Air	–	600.66	–	27	17 27	WR			
PT-6	05/31/04	6" PVC	Air	28	601.59	–	30	20-30	WR/Bedrock			
PT-7	05/31/04	6" PVC	Air	26	602.60	–	27	17-27	WR/Bedrock			
PT-8	05/31/04	6" PVC	Air	12	600.84		19	9-19	Sap/Bedrock			
TAMP MW1	07/29/15	1.5" PVC	HSA	11.3	585.93	–	11.3	6.3 11.3	Saprolite		1 5.97	
TAMP MW2	07/28/15	1.5" PVC	HSA	7.9	582.18	–	7.9	2.9 7.9	Saprolite		2 3.30	
TAMP MW3	07/29/15	1.5" PVC	HSA	6.75	576.56	–	6.75	1.75-6.75	Saprolite		3 5.71	
TAMP-MW4	07/29/15	1.5" PVC	HSA	7	577.53	–	7	2-7	Saprolite		4 NL	
TAMP-MW5	07/30/15	1.5" PVC	HSA	15.3	580.60	--	15.3	5.3-15.3	Saprolite		5 NL	
TAMP-MW6	07/30/15	1.5" PVC	HSA	10.4	574.03	–	10.4	5.4 10.4	Saprolite		6 NL	
TAMP-MW7	02/25/16	1.5" PVC	HSA	27.4	587.80	--	27.4	8.8-23.8	Saprolite		7 3.62	
TAMP-MW8	02/26/16	1.5" PVC	HSA	23.1	592.97	--	23.1	8-23	Saprolite		8 16.87	
MW-119	07/17/17	2" PVC	HSA/Air	11	580.18	--	20	10-20	Sap/WR		119 7.14	
MW-120	07/17/17	2" PVC	HSA/Air	25	604.73	25	36.5	31.5-36.5	Bedrock		120 10.81	
MW-121	07/18/17	2" PVC	HSA/Air	39	602.49	39	58	53-58	Bedrock		121 21.76	
MW-122	07/19/17	2" PVC	HSA/Air	8	587.12	–	36	26 36	Bedrock		122 12.61	
MW-123	07/18/17	2" PVC	HSA/Air	13	586.00	–	38	28-38	Bedrock		123 15.87	
MW-124	07/14/17	2" PVC	HSA/Air	10	575.29	23	45	35-45	Bedrock		124 5.86	
MW-125	--	2" PVC	HSA/Air	13	NM	--	53	NA	Bedrock		Dry - Well not installed	
MW-126	11/15/16	2" PVC	HSA	10	569.63	--	10	5-10	Sap/WR		126 9.17	
MW-127	01/25/19	2" PVC	HSA	--	578.73	–	19	9-19	Sap/WR		127 16.83	
MW-128	11/14/18	2" PVC	HSA	11	578.84	–	11	6-11	Sap/WR		128 10.18	
MW-129	01/24/19	2" PVC	HSA/Air	16	586.77	–	21	11-21	Sap/Bedrock		129 17.01	
MW-130	01/22/19	2" PVC	HSA	–	587.10		24	5-20	Saprolite		130 4.65	
MW-131	01/24/19	2" PVC	HSA	16	590.10	--	16	6-16	Saprolite		131 4.26	
MW-132	11/15/16	2" PVC	HSA	26	603.63	–	26	16-26	Saprolite		132 25.78	
MW 133	01/24/19	2" PVC	HSA/Air	12	578.60	17.5	30	20-30	Bedrock		133 16.74	
MW-134	–	2" PVC	HSA/Air	13	585.49	–	20	NA	Bedrock		Dry - Well not installed	13.84
MW-135	02/08/19	2" PVC	HSA/Air		598.09	–	25	15-25	Saprolite		135 19.21	
MW-136	--	2" PVC	HSA/Air	35.5	NM	41.3	71.3	Open Borehole	Bedrock		136 9.95	
MW-137	07/18/22	2" PVC	HSA	13.5	NM		13.5	3.5-13.5	Saprolite		137 3.36	
MW-138	07/18/22	2" PVC	HSA	14	NM	--	14	4-14	Saprolite		138 12.96	
MW-139	07/21/22	2" PVC	HSA/Air	12	NM	12	20	15-20	Bedrock		139 7.25	
MW 140	07/22/22	2" PVC	HSA/Air	22	NM	23.5	50	30-50	Bedrock		140 18.19	
MW 141	07/28/22	2" PVC	HSA/Air	11	NM	11	20	15-20	Bedrock		141 12.84	

Notes:
PVC - polyvinyl chloride.
HSA - hollow stem auger.
MR - mud rotary.
DPT - direct-push technology.
TOC - top of casing.
OC - outer casing.
ft msl - feet mean sea level.
ft bls - feet below land surface.
ft bTOC - feet below top of casing.
Elev. - elevation.
*Type II monitoring well (6" PVC OC).
**Set with temporary stainless steel outer casing.

Geologic Unit Codes:

MP-SP-7 Dry - total 11.80
MW-SP-3 2.9 9.41 4.80 ft bTOC
MP-1 10.26 ft bTOC
MP-2 10.27 ft bTOC
PZ-7 21.78 ft bTOC

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny 90's

Well ID: TAMP-MW-8
Sample Date: 8/8/22
Sampler Initials: CP
Sample Time: 0620

GAUGING DATA

Gauging Date: 8/8/22
Screen Interval (ft bls): 8-23
Total Depth (ft bTOC): 23.1
Depth to water (ft bTOC): 16.87
Stick-up length (ft ags): —
Water column length (ft): 6.23
Well Volume: 1.02

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
¾"	0.023	0.087

Sample Method
- [x] Peristaltic
- [ ] Bladder
- [ ] Bailer
- [ ] Grundfos
- [ ] Monsoon
- [ ] PDB

Purge Device
- [ ] Dedicated
- [x] Disposable
- [ ] Decontaminated

QA/QC Samples
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank

QA/QC Sample ID

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
1625	0.925	22.62	6.60	1.74	361		101.5	185	16.87
1640	1.85	22.25	5.93	1.89	356		106.1	185	
1645	2.775	22.38	5.88	2.04	377		104.4	185	
1650	3.7	22.20	5.85	2.10	377	95.7	104.0	185	
1655	4.625	23.16	5.85	2.53	349		103.2	185	
0815 → ~~1700~~						28.8			
0820						overrange			
0830	~~2 gal~~					overrange			
				TS					

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	6200	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes: YSI # 028189, Had to filter sample
8/9/22 1005 → metals sample

Signature: CP

Date: 8/8/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny 90s

Well ID: MW-2
Sample Date: 8/8/22
Sampler Initials: DF, TS
Sample Time: 1605

GAUGING DATA

Gauging Date: 8/8/22
Screen Interval (ft bls): 7-17
Total Depth (ft bTOC): 18.5
Depth to water (ft bTOC): 4.67
Stick-up length (ft ags):
Water column length (ft): 13.83
Well Volume: 2.25 gal

Well Diameter	Gal/ft *	L/ft
6"	1.47	5.58
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
¾"	0.023	0.087

Sample Method
- [x] Peristaltic
- [ ] Bladder
- [ ] Bailer
- [ ] Grundfos
- [ ] Monsoon
- [ ] PDB

Purge Device
- [ ] Dedicated
- [ ] Disposable
- [ ] Decontaminated

QA/QC Samples
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank

QA/QC Sample ID

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
1538	25							190	4.67
1548		21.73	6.99	153.7	0.180	10.3	166.3		
1553		21.73	6.03	153.8	0.181	3.83	160.2		
1558		21.66	6.07	154.4	0.181	4.67	155.5		
1603		21.87	6.09	152.6	0.181	5.09	149.4		

TS

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	6200	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes:

Signature: [signature]

Date: 8/8/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny 90s

Well ID: MW-05
Sample Date: 08/09/22
Sampler Initials: TS, DF
Sample Time: 0845

GAUGING DATA

Gauging Date: 08/08/22
Screen Interval (ft bls): 13.5 - 23.5
Total Depth (ft bTOC): 24
Depth to water (ft bTOC): 15.65
Stick-up length (ft ags):
Water column length (ft): 8.35
Well Volume: 1.36 gal

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
¾"	0.023	0.087

Sample Method
- [x] Peristaltic
- [ ] Bladder
- [ ] Bailer
- [ ] Grundfos
- [ ] Monsoon
- [ ] PDB

Purge Device
- [ ] Dedicated
- [ ] Disposable
- [ ] Decontaminated

QA/QC Samples
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank

QA/QC Sample ID

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
0816	25							190	15.65
0826		18.33	5.42	17.38	104	37.0	208.5	↓	↓
0831		18.49	5.68	17.19	103	14.3	197.0		
0836		18.41	5.75	17.27	102	12.5	196.9		
0841		18.40	5.77	17.30	101	7.59	198.2		

TS

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	6200	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes: YSI # 18938
Turbidity # 16070 C051333

Signature: [signature]

Date: 8/9/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny, 90s

Well ID: MW-11
Sample Date: 8/10/22
Sampler Initials: TS
Sample Time: ~~1042~~ 1450

GAUGING DATA

Gauging Date: 8/08/22
Screen Interval (ft bls): 10-20
Total Depth (ft bTOC): 20.5
Depth to water (ft bTOC): 10.82
Stick-up length (ft ags): —
Water column length (ft): 9.68
Well Volume: 1.57 gal

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
¾"	0.023	0.087

Sample Method		Purge Device	QA/QC Samples	QA/QC Sample ID
☒ Peristaltic	☐ Grundfos	☐ Dedicated	☐ Duplicate	
☐ Bladder	☐ Monsoon	☐ Disposable	☐ MS/MSD	
☐ Bailer	☐ PDB	☐ Decontaminated	☐ Equipment Blank	

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
1405	1.5							190	10.82
1415		22.83	5.73	10.85	0.186	over	186.2	↓	↓
1425		22.64	5.77	10.95	0.187	998	190.3		
1435		22.75	5.72	10.90	0.188	93	194.4		
1445						81.4			
1455						58.8			
1505						35.2			
1515						32.2			
1525						8.42			
		TS							

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	6200	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes:

Signature: [signature]

Date: 8/10/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny, 90s

Well ID: MW-101
Sample Date: 8/9/22
Sampler Initials: DF/TS
Sample Time: 1610

GAUGING DATA

Gauging Date: 08/08/22
Screen Interval (ft bls): 14.9 - 24.9
Total Depth (ft bTOC): 24.9
Depth to water (ft bTOC): 13.84
Stick-up length (ft ags):
Water column length (ft): 11.06
Well Volume: 1.80 gal

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.616
1"	0.041	0.154
¾"	0.023	0.087

Sample Method
- [x] Peristaltic
- [ ] Bladder
- [ ] Bailer
- [ ] Grundfos
- [ ] Monsoon
- [ ] PDB

Purge Device
- [ ] Dedicated
- [ ] Disposable
- [ ] Decontaminated

QA/QC Samples
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank

QA/QC Sample ID

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
1545	.26							200	13.84
1555		21.26	6.39	157.6	0.260	2.42	108.4		
1600		21.38	6.25	156.5	0.254	2.29	113.1		
1605		21.24	6.22	157.4	0.249	1.69	113.2		
				TS					

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	6200	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes:

Signature:

Date: 08/09/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny 90s

Well ID: MW-10Z
Sample Date: 8/9/22
Sampler Initials: DF
Sample Time: 1125

GAUGING DATA

Gauging Date: 8/8/22
Screen Interval (ft bls): 14.9 - 24.9
Total Depth (ft bTOC): 24.9
Depth to water (ft bTOC): 6.21
Stick-up length (ft ags):
Water column length (ft): 18.69
Well Volume: 3.04 gal

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
¼"	0.023	0.087

Sample Method		Purge Device	QA/QC Samples	QA/QC Sample ID
☑ Peristaltic	☐ Grundfos	☐ Dedicated	☐ Duplicate	
☐ Bladder	☐ Monsoon	☐ Disposable	☐ MS/MSD	
☐ Bailer	☐ PDB	☐ Decontaminated	☐ Equipment Blank	

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
1050	.25							200	6.21
1102		24.62	5.68	131.9	0.079	15.1	168.5		
1107		25.51	5.66	126.3	0.080	8.55	170.5		
1112		~~25.61~~ 25.61	6.64	125.7	0.079	7.89	170.5		
1117		25.72	5.64	124.9	0.079	3.24	171.5		
1122		25.74	5.65	124.9	0.079	3.16	171.8		
				TS					

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	6200	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes:

Signature: [signature]

Date: 8/9/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny 90s

Well ID: MW-103
Sample Date: 8/10/22
Sampler Initials: TS
Sample Time: 1335

GAUGING DATA

Gauging Date: 8/8/22
Screen Interval (ft bls): 9-19
Total Depth (ft bTOC): 19
Depth to water (ft bTOC): 9.38
Stick-up length (ft agl): —
Water column length (ft): 15.62
Well Volume: 2.54 gal

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
~~2"~~	~~0.163~~	~~0.616~~
1"	0.041	0.154
¾"	0.023	0.087

Sample Method
- [x] Peristaltic
- [ ] Bladder
- [ ] Bailer
- [ ] Grundfos
- [ ] Monsoon
- [ ] PDB

Purge Device
- [ ] Dedicated
- [ ] Disposable
- [ ] Decontaminated

QA/QC Samples
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank

QA/QC Sample ID

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
1310	.25							200	9.38
1320		24.41	6.29	9.67	0.263	6.98	93.6	↓	↓
1325		24.41	6.20	9.78	0.256	1.23	94.4		
1330		24.44	6.18	9.68	0.254	0.88	99.7		
			TS						

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	8260	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes:

Signature: [signature]

Date: 8/10/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny 90s

Well ID: MW-101c
Sample Date: 8/10/22
Sampler Initials: DF/TS
Sample Time: 1035

GAUGING DATA

Gauging Date: 8/8/22
Screen Interval (ft bls): 6.5-16.5
Total Depth (ft bTOC): 16.5
Depth to water (ft bTOC): 10.38
Stick-up length (ft ags):
Water column length (ft): 6.12
Well Volume: 0.99 gal

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
¾"	0.023	0.087

Sample Method		Purge Device	QA/QC Samples	QA/QC Sample ID
☑ Peristaltic	☐ Grundfos	☐ Dedicated	☐ Duplicate	
☐ Bladder	☐ Monsoon	☐ Disposable	☐ MS/MSD	
☐ Bailer	☐ PDB	☐ Decontaminated	☐ Equipment Blank	

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
1010									10.38
1020		21.08	6.77	138.2	0.219	9.08	-15.1		
1025		21.19	6.65	137.3	0.202	3.58	16.2		
1030		21.37	6.53	136.0	0.184	2.19	22.6		
				TS					

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	6200	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes:

Signature: DF

Date: 8/10/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: sunny 90s F

Well ID: MW-107
Sample Date: 8/10
Sampler Initials: ED
Sample Time: 1445

GAUGING DATA

Gauging Date: 8/09/22
Screen Interval (ft bls): 13-23
Total Depth (ft bTOC): 23
Depth to water (ft bTOC): 10.21
Stick-up length (ft ags): —
Water column length (ft): 12.79
Well Volume: 2.08

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
¾"	0.023	0.087

Sample Method
- [x] Peristaltic
- [ ] Bladder
- [ ] Bailer
- [ ] Grundfos
- [ ] Monsoon
- [ ] PDB

Purge Device
- [ ] Dedicated
- [x] Disposable
- [ ] Decontaminated

QA/QC Samples
- [x] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank

QA/QC Sample ID
DUP-GW-02

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
1400									
1405	1.0	25.70	7.95	0.25	331	—	68.3	200	—
1410	2.0	25.51	7.67	0.19	337	26.9	75.3	200	—
1415	3.0	25.40	7.51	0.17	329	13.2	67.1	200	—
1420	4.0	25.48	7.34	0.15	327	9.11	86.2	200	—
1425	5.0	25.50	7.17	0.13	326	5.76	61.1	200	—
1430	6.0	25.33	7.09	0.12	324	—	59.0	200	—
1435	7.0	25.37	6.98	0.14	322	—	58.7	200	—
1440	8.0	25.26	6.94	0.11	321	—	59.5	200	—
1445	9.0	25.56	6.89	0.11	320	2.60	58.5	200	—
				TS					

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	8260	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes:

Signature: ED

Date: 8/10/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny 90s

Well ID: MW-108
Sample Date: 08/10/22
Sampler Initials: TS, DF
Sample Time: 1305

GAUGING DATA

Gauging Date: 08/08/22
Screen Interval (ft bls): 5.5 - 15.5
Total Depth (ft bTOC): 15.5
Depth to water (ft bTOC): 6.61
Stick-up length (ft ags): —
Water column length (ft): 8.89
Well Volume: 1.44 gal

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
¾"	0.023	0.087

Sample Method
- [x] Peristaltic
- [ ] Bladder
- [ ] Bailer
- [ ] Grundfos
- [ ] Monsoon
- [ ] PDB

Purge Device
- [ ] Dedicated
- [ ] Disposable
- [ ] Decontaminated

QA/QC Samples
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank

QA/QC Sample ID

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
1229	25							150	6.61
1239		22.91	6.77	10.76	0.523	30.6	-106.7	↓	↓
1244		22.92	6.62	10.75	0.528	12.9	-105.0		
1249		22.94	6.50	10.75	0.537	~~107.6~~	-107.6		
1300						9.76			
			TS						

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	6200	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes:

Signature: [signature]

Date: 8/10/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: SUNNY 90s

Well ID: MW-109
Sample Date: 8/9/22
Sampler Initials: DF
Sample Time: 1445

GAUGING DATA

Gauging Date: 08/08/22
Screen Interval (ft bls): 4.5-14.5
Total Depth (ft bTOC): 14.5
Depth to water (ft bTOC): 5.18
Stick-up length (ft aga):
Water column length (ft): 9.32
Well Volume: 1.51 gal

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
¾"	0.023	0.087

Sample Method
- [x] Peristaltic
- [ ] Bladder
- [ ] Bailer
- [ ] Grundfos
- [ ] Monsoon
- [ ] PDB

Purge Device
- [ ] Dedicated
- [ ] Disposable
- [ ] Decontaminated

QA/QC Samples
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank

QA/QC Sample ID

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
1420	.25							200	5.18
1430		25.71	6.89	124.5	0.540	14.0	-69.1	↓	↓
1435		26.07	6.85	122.8	0.539	6.83	-70.9		
1440		25.61	6.82	125.6	0.529	5.70	-74.6		
				TS					

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	6200	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes:

Signature: DF

Date: 8/9/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny, 90s

Well ID: MW-11D
Sample Date: 08/08/22
Sampler Initials: TS, DF
Sample Time: 1050

GAUGING DATA

Gauging Date: 8/8/22
Screen Interval (ft bls): 25 - 35
Total Depth (ft bTOC): 35
Depth to water (ft bTOC): 21.56
Stick-up length (ft ags):
Water column length (ft): 13.44
Well Volume: 2.19 gal

Well Diameter	Gal/ft	L/ft
6"	1.47	5.58
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
½"	0.023	0.087

Sample Method		Purge Device	QA/QC Samples	QA/QC Sample ID
☒ Peristaltic	☐ Grundfos	☐ Dedicated	☐ Duplicate	
☐ Bladder	☐ Monsoon	☐ Disposable	☐ MS/MSD	
☐ Bailer	☐ PDB	☐ Decontaminated	☐ Equipment Blank	

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
1026	25							190	21.56
1036		21.20	6.23	~~14.08~~	123	9.36	~~120.0~~	↓	↓
1041		21.74	6.19	~~13.49~~	122	11.5	—		
1046		21.95	6.18	—	124	4.01	—		

TS

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	8260	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes:

Signature:

Date: 8/9/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny 90s

Well ID: MW-111
Sample Date: 08/09/22
Sampler Initials: TS, DF
Sample Time: 1250

GAUGING DATA

Gauging Date: 08/8/22
Screen Interval (ft bls): 25-35
Total Depth (ft bTOC): 35
Depth to water (ft bTOC): 22.8
Stick-up length (ft ags): +2
Water column length (ft): 12.2
Well Volume: 1.98

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
¾"	0.023	0.087

Sample Method		Purge Device	QA/QC Samples	QA/QC Sample ID
☒ Peristaltic	☐ Grundfos	☐ Dedicated	☐ Duplicate	
☐ Bladder	☐ Monsoon	☐ Disposable	☐ MS/MSD	
☐ Bailer	☐ PDB	☐ Decontaminated	☐ Equipment Blank	

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
1130	25							150	22.8
1140		23.20	5.98	12.11	114	OVER	152.5	↓	↓
1145		23.40	5.95	10.00	0.100	393	157.5		
1150		23.40	5.96	11.91	0.105	135	160.5		
1150						93.0			
1236						97.1			
1247						113			
			TS						

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	8260	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes:

Signature: [signature]

Date: 08/09/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny 90s

Well ID: MW-112
Sample Date: 8/9/22
Sampler Initials: DF/TS
Sample Time: 1715

GAUGING DATA

Gauging Date: 08/08/22
Screen Interval (ft bls): 20-35
Total Depth (ft bTOC): 35
Depth to water (ft bTOC): 9.23
Stick-up length (ft ags):
Water column length (ft): 25.77
Well Volume: 4.20 gal

Well Diameter	Gal/ft	Lift
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
¾"	0.023	0.087

Sample Method
- [x] Peristaltic
- [ ] Bladder
- [ ] Bailer
- [ ] Grundfos
- [ ] Monsoon
- [ ] PDB

Purge Device
- [ ] Dedicated
- [ ] Disposable
- [ ] Decontaminated

QA/QC Samples
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank

QA/QC Sample ID

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
1625	25							200	9.23
~~1635~~ 1640		20.08	6.30	167.9	0.151	++++	116.4		
~~1640~~ 1645		19.97	6.16	171.6	0.109	223	142.5		
1700		19.21	6.10	176.6	0.093	19.1	146.5		
1705						10.4			
1715						6.53			

TS

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	6200	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes: ~~[illegible]~~

Signature: DF

Date: 8/9/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny 90s

Well ID: MW-115
Sample Date: 8/8/22
Sampler Initials: DF, TS
Sample Time: 1725

GAUGING DATA

Gauging Date: 08/08/22
Screen Interval (ft bls): 4.5-14.5
Total Depth (ft bTOC): 14.5
Depth to water (ft bTOC): 4.50
Stick-up length (ft ags):
Water column length (ft): 10
Well Volume: 1.63gal

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.164
¾"	0.023	0.087

Sample Method
- [x] Peristaltic
- [ ] Bladder
- [ ] Bailer
- [ ] Grundfos
- [ ] Monsoon
- [ ] PDB

Purge Device
- [ ] Dedicated
- [ ] Disposable
- [ ] Decontaminated

QA/QC Samples
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank

QA/QC Sample ID

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
1653	25							190	4.50
1703		26.09	7.05	122.5	0.621	14.2	138.9	↓	↓
1708		25.93	6.97	122.6	0.622	9.88	143.1		
1713		26.41	6.92	119.4	0.630	5.31	132.1		

TS

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	8260	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes:

Signature: [illegible]

Date: 8/8/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny 90s

Well ID: MW-116
Sample Date: 8/10/22
Sampler Initials: DF / TS
Sample Time: 1156

GAUGING DATA

Gauging Date: 8/8/22
Screen Interval (ft bls): 23-33
Total Depth (ft bTOC): 33
Depth to water (ft bTOC): 10.44
Stick-up length (ft ags):
Water column length (ft): 22.56
Well Volume: 3.67 gal

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
¾"	0.023	0.087

Sample Method
- [x] Peristaltic
- [ ] Bladder
- [ ] Bailer
- [ ] Grundfos
- [ ] Monsoon
- [ ] PDB

Purge Device
- [ ] Dedicated
- [ ] Disposable
- [ ] Decontaminated

QA/QC Samples
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank

QA/QC Sample ID

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
1050	.25							200	10.44
1100		22.18	5.92	129.4	0.181	++++	124.7		
1110		23.89	6.08	118.6	0.187	++++	129.5		
1120		27.03	6.03	101.3	0.200	++++	137.5		
1130		20.25	5.97	144.7	0.171	18.1	142.1		
1135		20.16	6.02	144.9	0.171	9.32	138.1		
			TS						

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	6200	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes:

Signature: DF

Date: 8/10/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny, 90s

Well ID: MW-117
Sample Date: 08/09/22
Sampler Initials: TS, DF
Sample Time: 1515

GAUGING DATA

Gauging Date: 08/08/22
Screen Interval (ft bls): 13-23
Total Depth (ft bTOC): 23
Depth to water (ft bTOC): 10.46
Stick-up length (ft ags): —
Water column length (ft): 12.54
Well Volume: 2.04 gal

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
¾"	0.023	0.087

Sample Method
- [x] Peristaltic
- [ ] Bladder
- [ ] Bailer
- [ ] Grundfos
- [ ] Monsoon
- [ ] PDB

Purge Device
- [ ] Dedicated
- [ ] Disposable
- [ ] Decontaminated

QA/QC Samples
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank

QA/QC Sample ID

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
1450	25							150	10.46
1500		25.34	6.99	10.40	0.595	10.1	59.4	↓	↓
1505		25.23	7.01	10.54	0.587	5.34	60.7		
1510		25.33	7.02	10.45	0.582	4.37	60.6		

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	8260	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes:

Signature: [signature]

Date: 08/09/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: SUNNY 90s

Well ID: MW-118
Sample Date: 08/08/22
Sampler Initials: TS, DF
Sample Time: 1652

GAUGING DATA

Gauging Date: 08/08/22
Screen Interval (ft bls): 3-18
Total Depth (ft bTOC): 18
Depth to water (ft bTOC): 4.65
Stick-up length (ft ags):
Water column length (ft): 13.35
Well Volume: 2.17 gal

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
½"	0.023	0.087

Sample Method
- [x] Peristaltic
- [ ] Bladder
- [ ] Bailer
- [ ] Grundfos
- [ ] Monsoon
- [ ] PDB

Purge Device
- [ ] Dedicated
- [ ] Disposable
- [ ] Decontaminated

QA/QC Samples
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank

QA/QC Sample ID

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
1627	25							190	4.65
1637		21.90	6.33	13.39	0.001	26.7	20.7		
1642		21.46	6.30	13.82	0.001	17.7	15.8		
1647		21.18	6.26	14.10	0.001	7.55	18.5		
1652									
				TS					

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	8260	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes:

Signature: [signature]

Date: 08/08/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny, 90s°

Well ID: MW-119
Sample Date: 8/9/22
Sampler Initials: ED
Sample Time: 1630

GAUGING DATA

Gauging Date: 8/9/22
Screen Interval (ft bls): 10-20
Total Depth (ft bTOC): 20
Depth to water (ft bTOC): 9.14
Stick-up length (ft ags): —
Water column length (ft): 10.86
Well Volume: 1.77 gal

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
¾"	0.023	0.087

Sample Method		Purge Device	QA/QC Samples	QA/QC Sample ID
☒ Peristaltic	☐ Grundfos	☐ Dedicated	☐ Duplicate	
☐ Bladder	☐ Monsoon	☒ Disposable	☒ MS/MSD	MS-GW-02 @ 1635
☐ Bailer	☐ PDB	☐ Decontaminated	☐ Equipment Blank	MSD-GW-02 @ 1640

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
1610	—	—							—
1615	0.75	21.25	6.27	1.71	891	—	123.6	150	—
1620	1.5	21.05	6.35	1.76	886	—	120.9	150	—
1625	2.25	21.04	6.35	1.77	886	521	121.2	150	—
				TS					

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	8260	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes:

Signature: ED

Date: 8/9/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny 90sF

Well ID: MW-120
Sample Date: 8/10
Sampler Initials: EP
Sample Time: 1300

GAUGING DATA

Gauging Date: 8/8/22
Screen Interval (ft bls): 31.5-36.5
Total Depth (ft bTOC): 36.5
Depth to water (ft bTOC): 21.74
Stick-up length (ft ags):
Water column length (ft): 14.74
Well Volume: 2.40 gal

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
¾"	0.023	0.087

Sample Method
- [x] Peristaltic
- [ ] Bladder
- [ ] Bailer
- [ ] Grundfos
- [ ] Monsoon
- [ ] PDB

Purge Device
- [ ] Dedicated
- [ ] Disposable
- [ ] Decontaminated

QA/QC Samples
- [x] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank

QA/QC Sample ID
Dup-GW-01

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
1220									
1225	1.0	22.32	11.61	1.87	1220	—	190.4	200	—
1230	2.0	22.92	11.68	1.67	1203	—	182.8	200	—
1240	4.0	22.86	11.62	1.27	1009	—	167.6	200	—
1245	5.0	22.89	11.55	0.96	969	—	165.2	200	—
1250	6.0	23.64	11.58	0.87	985	—	160.7	200	—
1255	7.0	22.91	11.67	1.00	999	2.52	154.1	200	—
1300	8.0	23.02	11.65	0.95	1010	2.78	160.3	200	—
				TS					

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	6200	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes:

Signature: E.D.

Date: 8/10/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny, 90s

Well ID: MW-121
Sample Date: 08/09/22
Sampler Initials: TS, DF
Sample Time: 1005

GAUGING DATA

Gauging Date: 08/08/22
Screen Interval (ft bls): 53-58
Total Depth (ft bTOC): 58
Depth to water (ft bTOC): 21.76
Stick-up length (ft ags):
Water column length (ft): 36.24
Well Volume: 5.90 gal

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
¾"	0.023	0.087

Sample Method
- [x] Peristaltic
- [ ] Bladder
- [ ] Bailer
- [ ] Grundfos
- [ ] Monsoon
- [ ] PDB

Purge Device
- [ ] Dedicated
- [ ] Disposable
- [ ] Decontaminated

QA/QC Samples
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank

QA/QC Sample ID

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
0921	25							190	21.76
0931		21.97	7.27	13.27	277	81.1	-63.5	↓	↓
0936		22.82	7.18	13.18	247	64.0	-31.2		
0941		22.12	7.02	13.12	229	50.6	-3.2		
0950		22.04	6.80	13.22	205	10.9	34.0		
				TS					

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	6200	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes:

Signature: [signature]

Date: 08/09/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny 80sF

Well ID: MW-122
Sample Date: 8/9/22
Sampler Initials: ED
Sample Time: 1745

GAUGING DATA

Gauging Date: 8/8/22
Screen Interval (ft bls): 26-36
Total Depth (ft bTOC): 36
Depth to water (ft bTOC): 12.61
Stick-up length (ft ags): —
Water column length (ft): 23.39
Well Volume: 3.81

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
¾"	0.023	0.087

Sample Method
- [x] Peristaltic
- [ ] Bladder
- [ ] Bailer
- [ ] Grundfos
- [ ] Monsoon
- [ ] PDB

Purge Device
- [ ] Dedicated
- [x] Disposable
- [ ] Decontaminated

QA/QC Samples
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank

QA/QC Sample ID

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
1710									
1715	0.75	22.10	6.91	0.33	616	—	114	150	—
1725	2.25	21.50	6.86	0.36	617	—	129.8	150	—
1735	3.75	21.64	6.85	0.46	603	—	126.7	150	—
				TS					

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	8260	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes:

Signature: [illegible]

Date: 8/9/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny, 90s

Well ID: MW-124
Sample Date: 08/10/22
Sampler Initials: ED
Sample Time: 1005

GAUGING DATA

Gauging Date: 8/8
Screen Interval (ft bls): 35-45
Total Depth (ft bTOC): 45
Depth to water (ft bTOC): 5.36
Stick-up length (ft ags): –
Water column length (ft): 39.14
Well Volume: 4.37 gal

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
¾"	0.023	0.087

Sample Method
- [x] Peristaltic
- [ ] Bladder
- [ ] Bailer
- [ ] Grundfos
- [ ] Monsoon
- [ ] PDB

Purge Device
- [ ] Dedicated
- [x] Disposable
- [ ] Decontaminated

QA/QC Samples
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank

QA/QC Sample ID

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
925									
930	1.0	19.36	7.97	0.19	293	–	151.5	200	–
940	3.0	19.54	7.50	0.17	298	–	143.5	200	–
950	5.0	19.32	7.23	0.07	297	–	136.9	200	–
1000	7.0	19.32	7.16	0.07	295	–	135.4	200	–
1005	8.0	19.29	7.15	0.04	295	–	135.1	200	–
				TS					

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	8260	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes:

Signature: ED

Date: 08/10/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny 90s F

Well ID: MW-12
Sample Date: 8/9/22
Sampler Initials: ED
Sample Time: 1530

GAUGING DATA

Gauging Date: 8/8/22
Screen Interval (ft bls): 9-19
Total Depth (ft bTOC): 19
Depth to water (ft bTOC): 16.83
Stick-up length (ft agl): —
Water column length (ft): 2.17
Well Volume: 0.35 gal

Well Diameter	Gal/ft	L/ft
6"	1.47	5.58
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
½"	0.023	0.087

Sample Method
- [x] Peristaltic
- [ ] Bladder
- [ ] Bailer
- [ ] Grundfos
- [ ] Monsoon
- [ ] PDB

Purge Device
- [ ] Dedicated
- [x] Disposable
- [ ] Decontaminated

QA/QC Samples
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank

QA/QC Sample ID

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
1500									
1505	~~14.44~~ 2	20.00	5.64	2.02	272	—	141.1	400	—
1510	3	19.95	5.69	1.49	273	—	136.1	200	—
1515	4	19.91	5.78	0.77	273	—	130.7	200	—
1520	5	19.71	5.81	0.48	273	—	114.9	200	—
1525	6	19.60	5.80	0.40	273	—	110.0	200	—
				TS					

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	8260	40ml / VOA	3	HCL	14 days
~~SVOCs~~	~~8270~~	1L / Glass Amber	2	none	14 days
~~Metals~~	~~200.7~~	250ml / Plastic	1	HNO3	30 days
~~Total Organic Carbon~~	~~SM 5310C~~	250ml / Plastic	1	H2SO4	28 days
~~Dissolved Gas (ME&E)~~	~~RSK-175~~	40ml / VOA	2	HCl	14 days

Notes: YSI # 28189

Signature: [signature]

Date: 8/9/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny 90s

Well ID: MW-130
Sample Date: 8/9/22
Sampler Initials: CP
Sample Time: ~~1055~~ 1050

GAUGING DATA

Gauging Date: 8/8/22
Screen Interval (ft bls): 5-20
Total Depth (ft bTOC): 24
Depth to water (ft bTOC): 4.65
Stick-up length (ft ags): -
Water column length (ft): 19.35
Well Volume: 3.15

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
¾"	0.023	0.087

Sample Method
- [x] Peristaltic
- [ ] Bladder
- [ ] Bailer
- [ ] Grundfos
- [ ] Monsoon
- [ ] PDB

Purge Device
- [ ] Dedicated
- [x] Disposable
- [ ] Decontaminated

QA/QC Samples
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank

QA/QC Sample ID

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
1030	~~2.46~~ 0.525	22.16	5.94	0.52	388	280	174.6	175	4.65
1035	1.4	22.10	5.94	0.32	382	19.2	165.7	175	
1040	2.28	22.65	6.00	0.26	383	14.3	153.2	175	
1045	3.12	21.51	5.93	0.22	368	10.4	134.4	175	
1050	3.97	21.47	5.93	0.21	366		139.6	175	
1055						9.23			
				TS					

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	8260	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes: YST # 028189

Signature: CP

Date: 8/9/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny 90's

Well ID: MW-131
Sample Date: 8/9/22
Sampler Initials: CP
Sample Time: 1150

GAUGING DATA

Gauging Date: 8/8/22
Screen Interval (ft bls): 6-16
Total Depth (ft bTOC): 16
Depth to water (ft bTOC): 4.26
Stick-up length (ft ags): -
Water column length (ft): 11.74
Well Volume: 1.91

Well Diameter	Gal/ft	L/ft
6"	1.47	5.58
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
½"	0.023	0.087

Sample Method
- [x] Peristaltic
- [ ] Bladder
- [ ] Bailer
- [ ] Grundfos
- [ ] Monsoon
- [ ] PDB

Purge Device
- [ ] Dedicated
- [x] Disposable
- [ ] Decontaminated

QA/QC Samples
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank

QA/QC Sample ID

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
1135	0.54	20.60	6.05	0.17	410	7.32	164.7	180	4.26
1140	1.44	21.11	6.12	0.8	413		154.0	180	
1145	2.34	21.77	6.15	2.9	419		139.0	180	
1150	3.24	21.89	6.16	2.2	420	outage	136.3	180	
1200						outage			
1210									
1215						96.4			
1220						29.6			
						29.3			
				TS					

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	8260	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes: YSI # 028189

Signature: CP

Date: 8/9/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: ~~Sunny, 90's~~ Sunny, 90's

Well ID: MW-132
Sample Date: 08/10/22
Sampler Initials: TD, DF
Sample Time: 0905

GAUGING DATA

Gauging Date: 08/08/22
Screen Interval (ft bls): 16 - 26
Total Depth (ft bTOC): 26
Depth to water (ft bTOC): 25.78
Stick-up length (ft ags):
Water column length (ft): 0.22
Well Volume: 0.03 gal

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
¾"	0.023	0.087

Sample Method
- [x] Peristaltic
- [ ] Bladder
- [ ] Bailer
- [ ] Grundfos
- [ ] Monsoon
- [ ] PDB

Purge Device
- [ ] Dedicated
- [ ] Disposable
- [ ] Decontaminated

QA/QC Samples
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank

QA/QC Sample ID

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
0815	25							150	25.78
0825		19.37	4.95	13.95	0.043	198	254.2	↓	↓
0835		19.24	5.22	14.14	0.038	22.8	242.1		
0840		19.49	5.17	13.94	0.035	12.1	242.5		
0845		19.48	5.15	13.96	0.033	11.4	245.8		
0850		19.45	5.15	13.90	0.032	14.0	247.1		
				TS					

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	8260	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes:

Signature: [signature]

Date: 8/10/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny, 90s°F

Well ID: MW-133
Sample Date: 8/9/22
Sampler Initials: ED
Sample Time: 1545

GAUGING DATA

Gauging Date: 8/8/22
Screen Interval (ft bls): 20-30
Total Depth (ft bTOC): 30
Depth to water (ft bTOC): 16.74
Stick-up length (ft ags): —
Water column length (ft): 13.26
Well Volume: 2.16 gal

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.164
¾"	0.023	0.087

Sample Method
- [x] Peristaltic
- [ ] Bladder
- [ ] Bailer
- [ ] Grundfos
- [ ] Monsoon
- [ ] PDB

Purge Device
- [ ] Dedicated
- [x] Disposable
- [ ] Decontaminated

QA/QC Samples
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank

QA/QC Sample ID

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
1510									
1515	1.0							200	—
1520	2							200	—
1530	4	21.36	6.08	0.31	495	—	104.4	200	—
1535	5	22.21	6.20	0.17	504	—	102.1	200	—
1540	6	22.37	6.21	0.15	501	—	103.4	200	—
1545	7	22.72	6.21	0.15	500	—	104.4	200	—
				TS					

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	8260	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes: YSI # 28129

Signature: [signature] **Date:** 8/9/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny, 90sF

Well ID: MW-136
Sample Date: 8/10
Sampler Initials: ED
Sample Time: 1635

GAUGING DATA

Gauging Date: 8/8/22
Screen Interval (ft bls): ~~71.3~~ open borehole
Total Depth (ft bTOC): 71.3
Depth to water (ft bTOC): 9.95
Stick-up length (ft ags): 1
Water column length (ft): 61.35
Well Volume: 10gal

Well Diameter	Gal/ft	L/ft
~~8"~~	~~1.47~~	5.56
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
¾"	0.023	0.087

Sample Method		Purge Device	QA/QC Samples	QA/QC Sample ID
☐ Peristaltic	☐ Grundfos	☐ Dedicated	☐ Duplicate	
☐ Bladder	☑ Monsoon	☒ Disposable	☐ MS/MSD	
☐ Bailer	☐ PDB	☒ Decontaminated	☐ Equipment Blank	

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
1610	—								
1615	1.0	24.71	12.50	5.60	7469	—	90.9	200	—
1620		27.88	12.59	5.09	8312	—	73.0		—
1625		30.08	12.61	4.82	8653	—	54.7		—
1630		31.18	12.57	4.57	8809	—	~~45.7~~		—
				TS					

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	6200	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes:

Signature: [signature]

Date: 8/10/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny 90's

Well ID: MW-L37
Sample Date: 8/8/22
Sampler Initials: CR
Sample Time: 1600

GAUGING DATA

Gauging Date: 8/8/22
Screen Interval (ft bls): 3.5-13.5
Total Depth (ft bTOC): 13.5
Depth to water (ft bTOC): 3.36
Stick-up length (ft ags): –
Water column length (ft): 10.14
Well Volume: 1.65

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.616
1"	0.041	0.154
¾"	0.023	0.087

Sample Method		Purge Device	QA/QC Samples	QA/QC Sample ID
☑ Peristaltic	☐ Grundfos	☐ Dedicated	☐ Duplicate	
☐ Bladder	☐ Monsoon	☒ Disposable	☐ MS/MSD	
☐ Baller	☐ PDB	☐ Decontaminated	☐ Equipment Blank	

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
1546	0.875	29.48	6.58	0.10	761	7.02	25.1	175	3.36
1545	1.75	29.98	6.50	0.25	756		21.6	175	
1550	3.5	30.87	6.54	1.15	754		22.1	175	
1555	5.25	29.73	6.50	1.57	734	~~3.71~~	31.9	175	
1600	7	30.20	6.50	1.72	745	3.71	35.8	175	
				TS					

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	8260	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes: YSI #028189

Signature: CR

Date: 8/8/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny, 90s F

Well ID: MW-13S
Sample Date: 8/9/22
Sampler Initials: ED
Sample Time: 1430

GAUGING DATA

Gauging Date: 8/3/22
Screen Interval (ft bls): 4-14
Total Depth (ft bTOC): 14
Depth to water (ft bTOC): 12.56
Stick-up length (ft ags): —
Water column length (ft): 1.44
Well Volume: 0.239 gal

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
¾"	0.023	0.087

Sample Method		Purge Device	QA/QC Samples	QA/QC Sample ID
☒ Peristaltic	☐ Grundfos	☐ Dedicated	☐ Duplicate	
☐ Bladder	☐ Monsoon	☒ Disposable	☐ MS/MSD	
☐ Bailer	☐ PDB	☐ Decontaminated	☐ Equipment Blank	

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
1415	—								
1420	0.75	22.17	5.93	3.32	237	—	146.2	150	—
1425	1.5	23.05	5.91	2.76	236	—	120.3	125	—
1430	2.0	25.07	5.91	2.99	226	—	115.7	125	—
				TS					

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	6200	40ml / VOA	3	HCL	14 days
~~SVOCs~~	8270	1L / Glass Amber	2	none	14 days
~~Metals~~	200.7	250ml / Plastic	1	HNO3	30 days
~~Total Organic Carbon~~	SM 5310C	250ml / Plastic	1	H2SO4	28 days
~~Dissolved Gas (ME&E)~~	RSK-175	40ml / VOA	2	HCl	14 days

Notes:

Signature: ED

Date: 8/9/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny 90s

Well ID: MW-139
Sample Date: 8/10
Sampler Initials: ED
Sample Time: 1100

GAUGING DATA

Gauging Date: 8/8
Screen Interval (ft bls): 15-20
Total Depth (ft bTOC): 20
Depth to water (ft bTOC): 7.25
Stick-up length (ft ags): —
Water column length (ft): 12.75
Well Volume: 2.07 gal

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
½"	0.023	0.087

Sample Method		Purge Device	QA/QC Samples	QA/QC Sample ID
☒ Peristaltic	☐ Grundfos	☐ Dedicated	☐ Duplicate	
☐ Bladder	☐ Monsoon	☒ Disposable	☐ MS/MSD	
☐ Bailer	☐ PDB	☐ Decontaminated	☐ Equipment Blank	

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
1020	0	—	—	—	—	—	—	—	—
1025	1.0	20.77	6.56	1.07	179	—	124.1	200	—
1030	2.0	20.84	6.30	1.14	191	—	126.0	200	—
1035	3.0	20.80	6.17	1.19	191	—	124.1	200	—
1040	4.0	20.60	6.00	1.18	182	—	125.4	200	—
1045	5.0	20.52	5.94	1.17	182	—	122.2	200	—
1050	6.0	20.43	5.89	1.15	180	—	122.4	200	—
1055	7.0	20.43	5.84	1.11	173	1.84	120.2	200	—
1100	8.0	20.40	5.83	1.14	172	1.70	120.7	200	—
				TS					

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	8260	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes:

Signature: ED

Date: 08/10/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: Sunny 90's

Well ID: MW-14D
Sample Date: 8/8/22
Sampler Initials: CP
Sample Time: 1900

GAUGING DATA

Gauging Date: 8/8/22
Screen Interval (ft bls): 30-50
Total Depth (ft bTOC): 50
Depth to water (ft bTOC): 18.19
Stick-up length (ft ags): --
Water column length (ft): 31.81
Well Volume: 5.19

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
¾"	0.023	0.087

Sample Method		Purge Device	QA/QC Samples	QA/QC Sample ID
☐ Peristaltic	☐ Grundfos	☐ Dedicated	☐ Duplicate	
☐ Bladder	☒ Monsoon	☒ Disposable	☐ MS/MSD	
☐ Bailer	☐ PDB	☒ Decontaminated	☐ Equipment Blank	

FIELD PARAMETERS

	Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
8/8	1740	0.023	21.92	6.79	5.80	605		156.5	150	
	1745	0.77	23.08	6.98	5.42	622		143.2	150	
	1750	1.52	23.93	7.07	5.13	634		140.0	150	
	1755	2.27	24.31	7.10	5.09	639		138.4	150	
	1800	3.02	20.82	7.07	6.74	590	68.2	142.5	150	
8/9	815						over range			
	830	2 gal					over range			
	0845						79.8			
	0900						37.1			
	0910						56.4			
	0920						29.4			

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	6200	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes: YSI # 028189. hard to filter sample
Metals Sample Time / date: 8/9/22 0930

Signature: CP

Date: 8/8/22

Groundwater Sampling Log

Terracon

Site Name: TAMP
Project Number: 7021P145
Site Location: Burlington, NC
Weather: sunny 90s

Well ID: MW-141
Sample Date: 8/10
Sampler Initials: ED
Sample Time: 845

GAUGING DATA

Gauging Date: 8/8/22
Screen Interval (ft bls): 15-20
Total Depth (ft bTOC): 20
Depth to water (ft bTOC): 12.94
Stick-up length (ft ags): —
Water column length (ft): 7.06
Well Volume: 1.15 gal

Well Diameter	Gal/ft	L/ft
6"	1.47	5.56
4"	0.653	2.47
2"	0.163	0.618
1"	0.041	0.154
¾"	0.023	0.087

Sample Method
- [x] Peristaltic
- [ ] Bladder
- [ ] Bailer
- [ ] Grundfos
- [ ] Monsoon
- [ ] PDB

Purge Device
- [ ] Dedicated
- [x] Disposable
- [ ] Decontaminated

QA/QC Samples
- [ ] Duplicate
- [ ] MS/MSD
- [ ] Equipment Blank

QA/QC Sample ID

FIELD PARAMETERS

Time	Purge Vol. (Liter)	Temp (°C)	pH (SU)	DO (mg/L)	Cond. (µmhos/cm)	Turbidity (NTU)	ORP (mV)	Flow (ml/min)	Water Depth (ft bTOC)
815									
820	2	18.64	7.02	1.43	364	—	158.9	400	—
825									
830	4	20.00	7.03	1.06	371	2.08	125.6	200	—
845	6	20.12	6.95	0.35	372	1.41	123.1	>200	—
			TS						

LABORATORY ANALYSIS

Analytical Parameter	Method	Bottle Size/Type	No. Bottles	Preservative	Hold Time
VOCs	6200	40ml / VOA	3	HCL	14 days
SVOCs	8270	1L / Glass Amber	2	none	14 days
Metals	200.7	250ml / Plastic	1	HNO3	30 days
Total Organic Carbon	SM 5310C	250ml / Plastic	1	H2SO4	28 days
Dissolved Gas (ME&E)	RSK-175	40ml / VOA	2	HCl	14 days

Notes:

Signature: ED

Date: 8/10/22

Table 1
Groundwater Monitoring Well Construction Summary
Tarheel Army Missile Plant
240 Graham-Hopedale Road, Burlington, NC
Terracon Project No. 7021P145

WELL CONSTRUCTION DETAILS										HYDROGEOLOGY SUMMARY			
Well ID	Install Date	Well Construction	Drilling Method	Refusal	TOC (Arcadis) (ft msl)	TOC (Terracon) (ft msl)	OC (ft bls)	Well Depth (ft bls)	Screen (ft bls)	Geologic Unit (see code)	Gauging Date	Water Depth (ft bTOC)	Water Elev. (ft msl)
MP-1	--	2" PVC	--	--		--	--	-- 16	-- 5.5-15.5	--	MP-1	10.68	
MP-2	--	2" PVC	--	--		--	--	-- 16	5.5-15.5	--	MP-2	10.74	needs well cover
MW-SP-3	--	2" PVC	--	--		--	--	--	2-9	--	MW-SP-3	4.96	
MW-2	12/13/91	2" PVC	HSA	18.5	596.91	--	--	18.5	7-17	Saprolite	MW-2	5.28	
MW-5	12/17/91	2" PVC	HSA	--	610.42	--	--	24	13.5-23.5	Saprolite	MW-5	16.21	
MW-11	12/18/91	2" PVC	HSA	--	604.61	--	--	20.5	10-20	Saprolite	MW-11	11.24	
MW-101	05/11/93	2" PVC	HSA/Air	16	604.80	--	--	24.9	14.9-24.9	Bedrock	MW-101	14.46	
MW-102	05/11/93	2" PVC	HSA	--	595.76	--	--	16	6-16	Saprolite	MW-102	6.149	
MW-103	05/11/93	2" PVC	HSA/Air	15	595.69	--	--	19	9-19	Sap/Bedrock	MW-103	3.46	
MW-104	05/12/93	2" PVC	HSA/Air	6.5	602.90	--	--	27	17-27	Bedrock	MW-104	24.45	
MW-105	05/12/93	2" PVC	HSA/Air	Unknown	608.31	--	--	27.5	17.5-27.5	Bedrock	MW-105	22.57	
MW-106	05/17/93	2" PVC	HSA/Air	14	604.79	--	--	16.5	6.5-16.5	Sap/Bedrock	MW-106	10.03	
MW-107	05/17/93	2" PVC	HSA	--	604.15	--	--	23	13-23	Saprolite	MW-107	10.08	needs well cover
MW-108	05/24/93	2" PVC	HSA	--	599.45	--	--	15.5	5.5-15.5	Saprolite	MW-108	6.83	
MW-109	05/26/93	2" PVC	HSA	--	597.31	--	--	14.5	4.5-14.5	Sap/Bedrock	MW-109	5.31	
MWC-1	12/07/93	2" PVC	HSA	--	NM	--	--	30	19.6-29	Saprolite	MWC-1		
MW-110	08/09/94	2" PVC	HSA/Air	15	603.25	--	--	35	25-35	Bedrock	MW-110	21.75	
MW-111	08/09/94	2" PVC	HSA/Air	21	603.82	--	--	35	25-35	Bedrock	MW-111	23.20	2to-foton observed
MW-112	08/09/94	2" PVC	HSA/Air	13	602.63	--	--	35	25-35	Concrete?	MW-112	29.64	
MW-113	02/07/95	2" PVC	HSA	--	603.06	--	--	28.6	18.6-28.6	Saprolite	MW-113	10.11	
MW-114	04/04/95	2" PVC	HSA/Air	22.2	595.93	--	--	24	14-24	Sap/Bedrock	MW-114	4.71	
MW-115	09/12/95	2" PVC	HSA/Air	13	596.51	--	--	14.5	4.5-14.5	Sap/Bedrock	MW-115	4.34	
MW-116	09/11/95	2" PVC	HSA	--	603.76	--	--	33	23-33	Saprolite	MW-116	10.83	needs well cover
MW-117	09/12/95	2" PVC	HSA/Air	Variable	604.04	--	--	23	13-23	Sap/Bedrock	MW-117	10.51	needs well cover
MW-118	09/18/95	2" PVC	HSA	--	597.01	--	--	18	8-18	Saprolite	MW-118	4.71	
PZ-1	04/03/98	1" PVC	HSA/Core	34.5	NM	--	--	45	37-45	Bedrock	PZ-1	21.97	
PT-1	05/31/04	6" PVC	Air	14	598.51	--	--	16	6-16	WR/Bedrock	PT-1		
PT-2	05/31/04	6" PVC	Air	15	599.06	--	--	17	7-17	WR/Bedrock	PT-2		
PT-3	05/31/04	6" PVC	Air	22	598.52	--	--	24	14-24	WR/Bedrock	PT-3		
PT-4	05/31/04	6" PVC	Air	28	600.74	--	--	30	20-30	WR/Bedrock	PT-4		
PT-5	05/31/04	6" PVC	Air	--	600.66	--	--	27	17-27	WR	PT-5		
PT-6	05/31/04	6" PVC	Air	28	601.59	--	--	30	20-30	WR/Bedrock	PT-6		
PT-7	05/31/04	6" PVC	Air	26	602.60	--	--	27	17-27	WR/Bedrock	PT-7		
PT-8	05/31/04	6" PVC	Air	12	600.84	--	--	19	9-19	Sap/Bedrock	PT-8		
TAMP-MW1	07/29/15	1.5" PVC	HSA	11.3	585.93	--	--	11.3	6.3-11.3	Saprolite	TAMP-MW1	6.20	Needs new pad
TAMP-MW2	07/28/15	1.5" PVC	HSA	7.9	582.18	--	--	7.9	2.9-7.9	Saprolite	TAMP-MW2	3.66	
TAMP-MW3	07/29/15	1.5" PVC	HSA	6.75	576.56	576.58	--	6.75	1.75-6.75	Saprolite	TAMP-MW3	3.78	
TAMP-MW4	07/29/15	1.5" PVC	HSA	7	577.53	--	--	7	2-7	Saprolite	TAMP-MW4		
TAMP-MW5	07/30/15	1.5" PVC	HSA	15.3	580.60	--	--	15.3	5.3-15.3	Saprolite	TAMP-MW5		
TAMP-MW6	07/30/15	1.5" PVC	HSA	10.4	574.00	--	--	10.4	5.4-10.4	Saprolite	TAMP-MW6		
TAMP-MW7	02/25/16	1.5" PVC	HSA	27.4	587.90	588.00	--	27.4	8.8-23.8	Saprolite	TAMP-MW7	3.68	
TAMP-MW8	02/26/16	1.5" PVC	HSA	23.1	592.97	593.02	--	23.1	8-23	Saprolite	TAMP-MW8	16.98	
MW-119	07/17/17	2" PVC	HSA/Air	11	580.18	--	--	20	10-20	Sap/WR	MW-119	8.67	
MW-120	07/17/17	2" PVC	HSA/Air	25	604.73	--	25	36.5	31.5-36.5	Bedrock	MW-120	11.24	
MW-121	07/18/17	2" PVC	HSA/Air	39	602.49	--	39	58	53-58	Bedrock	MW-121	21.72	
MW-122	07/19/17	2" PVC	HSA/Air	8	587.12	--	--	36	26-36	Bedrock	MW-122	12.58	
MW-123	07/18/17	2" PVC	HSA/Air	13	586.00	586.05	--	38	28-38	Bedrock	MW-123	15.84	
MW-124	07/14/17	2" PVC	HSA/Air	10	575.29	575.25	23	45	35-45	Bedrock	MW-124	9.89	
MW-125	--	2" PVC	HSA/Air	13	NM	--	--	53	NA	Bedrock	MW-125	Dry - Well not installed	
MW-126	11/15/16	2" PVC	HSA	10	569.63	--	--	10	5-10	Sap/WR	MW-126	9.85	
MW-127	01/25/19	2" PVC	HSA	--	578.73	--	--	19	9-19	Sap/WR	MW-127	16.67	
MW-128	11/14/18	2" PVC	HSA	11	578.84	--	--	11	6-11	Sap/WR	MW-128	10.18	
MW-129	01/24/19	2" PVC	HSA/Air	16	586.77	587.06	--	21	11-21	Sap/Bedrock	MW-129	17.09	
MW-130	01/22/19	2" PVC	HSA	--	587.10	587.44	--	24	5-20	Saprolite	MW-130	4.66	
MW-131	01/24/19	2" PVC	HSA	16	590.10	--	--	16	6-16	Saprolite	MW-131	4.25	
MW-132	11/15/16	2" PVC	HSA	26	603.63	--	--	26	16-26	Saprolite	MW-132	26.05	— 1.94' stickup
MW-133	01/24/19	2" PVC	HSA/Air	12	578.60	--	17.5	30	20-30	Bedrock	MW-133	16.63	
MW-134	--	2" PVC	HSA/Air	13	585.49	--	--	~~20~~ 30	20-30 NA	Bedrock	MW-134	14.08	
MW-135	02/08/19	2" PVC	HSA/Air	--	598.09	--	--	25	15-25	Saprolite	MW-135	19.54	
MW-136	--	2" PVC	HSA/Air	35.5	NM	--	41.3	71.3	Open Borehole	Bedrock	MW-136	10.59	— 0.6' stickup
MW-137	07/18/22	2" PVC	HSA	13.5	587.55	587.55	--	13.5	3.5-13.5	Saprolite	MW-137	3.79	
MW-138	07/18/22	2" PVC	HSA	14	581.37	581.37	--	14	4-14	Saprolite	MW-138	12.86	
MW-139	07/21/22	2" PVC	HSA/Air	12	579.22	579.22	12	20	15-20	Bedrock	MW-139	7.28	
MW-140	07/22/22	2" PVC	HSA/Air	22	592.78	592.78	23.5	50	30-50	Bedrock	MW-140	17.09	
MW-141	07/28/22	2" PVC	HSA/Air	11	580.43	580.43	11	20	15-20	Bedrock	MW-141	12.28	

Notes:
PVC - polyvinyl chloride.
HSA - hollow stem auger.
MR - mud rotary.
DPT - direct-push technology.
TOC - top of casing.
OC - outer casing.
ft msl - feet mean sea level.
ft bls - feet below land surface.
ft bTOC - feet below top of casing.
Elev. - elevation.
*Type III monitoring well (6" PVC OC).
**Set with temporary stainless steel outer casing.

Geologic Unit Codes:

Appendix K

Survey Data

RLS SURVEYING & CONSULTING

August 25, 2022

Ethan Dinwiddie, PG
Terracon, Inc.
2401 Brentwood Road, Suite 107
Raleigh, North Carolina 27604

I hereby certify to the best of my knowledge the information below is a true and accurate location of the existing monitoring wells at 204 N. Graham-Hopedale Road, Burlington, North Carolina. This survey was performed on 8/15/2022.

Raw Description	Northing (Feet)	Easting (Feet)	Point Elevation (Feet)	Latitude	Longitude
TAMP-MW-3 casing	854,974.91	1,878,505.87	576.58	N 36°05'54.28"	W 79°24'40.44"
ground			576.98		
TAMP-MW-7 casing	855,453.04	1,879,512.02	588.00	N 36°05'59.05"	W 79°24'28.21"
ground			588.22		
TAMP-MW-8 casing	855,432.05	1,879,130.87	593.02	N 36°05'58.83"	W79°24'32.85"
ground			593.24		
MW-123 casing	855,410.86	1,878,425.62	586.05	N 36°05'58.59"	W 79°24'41.44"
ground			586.38		
MW-124 casing	855,415.27	1,878,632.41	575.25	N 36°05'58.64"	W 79°24'38.92"
ground			575.70		
MW-129 casing	855,430.41	1,878,922.44	587.06	N 36°05'58.80"	W 79°24'35.39"
ground			587.36		
MW-130 casing	855,455.66	1,879,389.61	587.44	N 36°05'59.07"	W 79°24'29.70"
ground			587.71		
MW-137 casing	855,590.15	1,879,567.25	587.55	N 36°06'00.41"	W 79°24'27.54"
ground			587.87		
MW-138 casing	855,351.67	1,878,519.30	581.37	N 36°05'58.01	W 79°24'40.30"
ground			581.70		
MW-139 casing	854,903.95	1,878,667.30	579.22	N 36°05'53.59"	W 79°24'38.47"
ground			579.47		
MW-140 casing	855,443.10	1,879,121.07	592.78	N 36°05'58.94"	W 79°24'32.97"
ground			593.03		
MW-141 casing	855,357.40	1,878,828.83	580.43	N 36°05'58.08"	W 79°24'36.53"
ground			580.68		

RLS SURVEYING & CONSULTING

Raw Description	Northing (Feet)	Easting (Feet)	Point Elevation (Feet)	Latitude	Longitude
SW-01	854,908.86	1,878,607.20	568.88	N 36°05'53.63"	W 79°24'39.21"
SW-1A	854,780.66	1,878,671.67	572.34	N 36°05'52.37"	W 79°24'38.41"
SW-1B	854,788.30	1,878,678.08	573.93	N 36°05'52.45"	W 79°24'38.34"
SW-02	855,424.07	1,878,712.79	563.93	N 36°05'58.73"	W 79°24'37.94"
SW-02A	855,134.19	1,878,619.49	566.43	N 36°05'55.86"	W 79°24'39.07"
SW-3	855,629.93	1,878,706.90	560.03	N 36°06'00.77"	W 79°24'38.03"
SW-3A	856,241.45	1,878,595.24	552.09	N 36°06'06.81"	W 79°24'39.42"

Kim R. Lilly, PLS L-3612 CFS

Regional Land Surveyors, Inc.
8642 W. Market Street, Suite 100
Greensboro, NC 27409
klilly@RegionalLandSurveyors.com
Phone: 336.665.8155 ext. 105
Fax: 336.665.8156

NORTH CAROLINA PROFESSIONAL SEAL L-3612 LAND SURVEYOR KIM R. LILLY

8-26-22

Appendix L

Waste Profiles and Disposal Manifests for Investigative-Derived Wastes

A&D Environmental Services, Inc.
2718 Uwharrie Rd., Archdale, NC 27263
336-434-7750 FAX: 336-434-7752

Reserved for Facility Use Approval Date: _____ By: _____ Expiration Date: 1 yr from Approval Date

☐ Solidification ☐ Recovery **Profile Number:** _____

A. Billing Information

Company **Terracon** Account # _____
Address **2401 Brentwood Road, Ste 107**
City/State **Raleigh, NC** Zip **27604** Contact **Ethan Dinwiddie**
Phone **919-451-2291** Fax _____

B. Generator Information/Location of Waste

Generator Name Former Tarheel Army Missle Plant Site Contact _____
Address 204 Graham-Hopedale Road
City/State Burlington, NC Zip 27217
Contact Phone _____ EPD ID NCVSQG
Type of Business _____ SIC Code _____

C. Waste Description

Common Name of Waste IDW-Liquids
Process Generating Waste Investigation Derived Waste

D. Physical Properties

Physical State	Odor	Color	Viscosity	Specific Gravity
☐ 100% Solid	☑ None	Describe:	☐ Low	
☑ 100% Liquid	☐ Mild	Dirty	☐ Medium	8.35 lb/gallon
☐ Sludge	☐ Strong		☑ High	
____ % Free Liquid	Describe: _____			

Flash Point		pH		Water	
☐ <73 F	☐ 140-199 F	☐ < 2	☐ 9.1 - 12.4	☐ < 5%	☐ 30-80%
☐ 73-99 F	☑ >199 F	☐ 2.1 - 4.9	☐ > 12.5	☐ 5-10%	☑ 80-100%
☐ 100-139 F	☐ N/A	☑ 5 - 9	☐ N/A	☐ 10-30%	☐ N/A

Is this waste incompatibile with other material? ☑ No ☐ Yes If Yes, explain: _____

E. Volume

Anticipated Volume: 13 ☐ Drums ☐ 5-Gallon ☐ 30-Gallon ☑ 55-Gallon ☐ Tote
☐ Bulk ☐ Tanker ☐ Pump Truck ☐ Other: _____

Estimated Frequency: ☐ Weekly ☐ Semimonthly ☐ Monthly ☐ Quarterly ☑ Other Year

F. Constituents

Total must be equal to 100%. All constituents, including debris must be identified.

Constituents	Actual %	Range
IDW-Liquids(see analytical)	100%	
	100%	

G. Other Hazards

☐ Radioactive
☐ Water Reactive
☐ Oxidizer
☐ OSHA
☐ Carcinogen
☐ Explosive
☐ Pesticide
☐ Polymerizable
☐ Organic Peroxide
☐ Infectious
☐ Pryophoric

H. Process Flow Chart

Using the space provided, draw a flow chart showing how waste is generated

I. Constituents

These values are based on ☑ Generator Knowledge ☑ Analytical Results ☐ MSDS

All analytical data provided relevant to this profile must be conducted by laboratories that have NELAP/NELAC accreditation.

Accreditation Number: _____ Name: _____

Address: _____ Phone: _____

Inorganic

Metals		Level	(mg/l)
D004	Arsenic	5.0	**0.0018**
D005	Barium	100.0	**0.067**
D006	Cadmium	1.0	< 0.0005
D007	Chromium	5.0	**0.072**
D008	Lead	5.0	**0.0023**
D009	Mercury	0.2	< 0.0002
D010	Selenium	1.0	**0.0066**
D011	Silver	5.0	< 0.001

Other	**Conc.**
Ammonia	n/a
Phosphorus	n/a
Formaldehyde	n/a
Total Solids	n/a
PCBs	n/a
Copper	n/a
Nickel	n/a
Zinc	n/a

Pesticides/Herbicides		Level	(mg/l)
D012	Endrin		n/a
D013	Lindane		n/a
D014	Methoxychlor		n/a
D015	Toxaphene		n/a
D016	2,4-D		n/a
D017	2,4,5-TP		n/a
D020	Chlordane		n/a
D031	Heptachlor		n/a

Organic

Volatile Compounds		Level	(mg/l)
D018	Benzene	0.5	**0.0061**
D019	Carbon Tetrachloride	0.5	< 0.001
D021	Chlorobenzene	100.0	< 0.001
D022	Chloroform	6.0	< 0.001
D028	1,2-Dichloroethane	0.5	**0.00064**
D029	1,1-Dichloroethylene	0.7	< 0.001
D035	Methyl Ethyl Ketone	200.0	< 0.010
D039	Tetrachloroethylene	0.7	**0.052**
D040	Trichloroethylene	0.5	**0.16**
D043	Vinyl Chloride	0.2	**0.0011**

Semi-Volatile Compounds		Level	(mg/l)
D023	o-Cresol	200.0	< 0.008
D024	m-Cresol	200.0	n/a
D025	p-Cresol	200.0	< 0.02
D026	Cresol	200.0	n/a
D027	1,4-Dichlorobenzene	7.5	< 0.001
D030	2,4-Dinitrotoluene	0.13	< 0.008
D032	Hexchlorobenzene	0.13	< 0.008
D033	Hexachlorobutadiene	0.5	< 0.008
D034	Hexachloroethane	3.0	< 0.004
D036	Nitrobenzene	2.0	< 0.008
D037	Pentachlorophenol	100.0	< 0.025
D038	Pyridine	5.0	n/a
D041	2,4,5-Trichlorophenol	400.0	< 0.008
D042	2,4,6-Trichlorophenol	2.0	< 0.008

J. General Information

1 ☑ No ☐ Yes Is this waste a hazardous material as defined in 49 CFR Section 172.101?
If yes, include shipping name, placard hazard class and packaging group:

_____

2 ☑ No ☐ Yes Is this waste regulated as a reportable quantity as defined in 49 CFR Section 172.101 Appendix A?

3 ☑ No ☐ Yes Is this waste a marine pollutant as defined in 49 CFR Section 172.101 Appendix B?

4 ☑ No ☐ Yes Is this hazardous waste, as determined by performing the Hazardos Waste Determination prescribed at CFR262.11? (Attach Documentation)

5 ☑ No ☐ Yes Does this waste contain any amount of Listed Hazardous Waste in 40 CFR 261.31, Hazardous Waste from Non-specific Sources; 261.32, Hazardous Waste from Specific Sources; and 261.33, Discarded Commercial Chemical Products, Off specification Species, Container Residues, and Spill Residues?

6 ☑ No ☐ Yes Does waste fail any of the four Hazardous Waste Characteristics of ignitibility, corrosivity, reactivity, and toxicity, as defined in 40 CFR 261.21, 261.22, 261.23, 261.23, respectively?

7 ☑ No ☐ Yes Is this waste state regulated? If Yes, define: _____

8 ☐ No ☑ Yes Are Material Safety Data Sheets and/or all analytical data relevant to this profile data sheet attached?

9 ☑ No ☐ Yes Is this waste derived from an Investigation of an Undergroud Storage Tank release (IDW)?

K. Sample

Has a sample been included? ☐ Yes ☑ No If yes, sampled by: _____ Date: _____

L. Generator's Certification

I hereby certify that all information submitted in this and attached documents is correct to the best of my knowledge. I also certify that any samples submitted are representative of the actual waste. If A&D Environmental Services discovers a descrepancy during the approval process, Generator grants A&D Environmental Services the authority to amend the profile, as A&D Environmental Services LLC deems necessary, to reflect the descrepancy.

Generator Signature	Print Name	Date
Digitally signed by TAPLEY.TRACEY.A.1063235772 Date: 2022.12.15 14:18:03 -05'00'	Tracey Tapley	12/15/2022

A&D Environmental Services, Inc.
2718 Uwharrie Rd., Archdale, NC 27263
336-434-7750 FAX: 336-434-7752

Reserved for Facility Use Approval Date: _____ By: _____ Expiration Date: 1 yr from Approval Date

☐ Solidification ☐ Recovery **Profile Number:** _____

A. Billing Information

Company **Terracon** Account # _____
Address **2401 Brentwood Road, Ste 107**
City/State **Raleigh, NC** Zip **27604** Contact **Ethan Dinwiddie**
Phone **919-451-2291** Fax _____

B. Generator Information/Location of Waste

Generator Name Former Tarheel Army Missile Plant Site Contact _____
Address 204 Graham-Hopedale Road
City/State Burlington, NC Zip 27217
Contact Phone _____ EPD ID NCVSQG
Type of Business _____ SIC Code _____

C. Waste Description

Common Name of Waste IDW-Solids
Process Generating Waste Investigation Derived Waste

D. Physical Properties

Physical State	Odor	Color	Viscosity	Specific Gravity
☑ 100% Solid	☑ None	Describe: Dirt	☐ Low	>9 lb/gallon
☐ 100% Liquid	☐ Mild		☐ Medium	
☐ Sludge	☐ Strong		☑ High	
____ % Free Liquid	Describe: _____			

Flash Point		pH		Water	
☐ <73 F	☐ 140-199 F	☐ < 2	☐ 9.1 - 12.4	☑ < 5%	☐ 30-80%
☐ 73-99 F	☑ >199 F	☐ 2.1 - 4.9	☐ > 12.5	☐ 5-10%	☐ 80-100%
☐ 100-139 F	☐ N/A	☑ 5 - 9	☐ N/A	☐ 10-30%	☐ N/A

Is this waste incompatibile with other material? ☑ No ☐ Yes If Yes, explain: _____

E. Volume

Anticipated Volume: 15 ☐ Drums ☐ 5-Gallon ☐ 30-Gallon ☑ 55-Gallon ☐ Tote
☐ Bulk ☐ Tanker ☐ Pump Truck ☐ Other: _____

Estimated Frequency: ☐ Weekly ☐ Semimonthly ☐ Monthly ☐ Quarterly ☑ Other Year

F. Constituents

Total must be equal to 100%. All constituents, including debris must be identified.

Constituents	Actual %	Range
IDW-Solids(see analytical)	100%	
	100%	

G. Other Hazards

☐ Radioactive
☐ Water Reactive
☐ Oxidizer
☐ OSHA
☐ Carcinogen
☐ Explosive
☐ Pesticide
☐ Polymerizable
☐ Organic Peroxide
☐ Infectious
☐ Pryophoric

H. Process Flow Chart

Using the space provided, draw a flow chart showing how waste is generated

I. Constituents

These values are based on ☑ Generator Knowledge ☑ Analytical Results ☐ MSDS

All analytical data provided relevant to this profile must be conducted by laboratories that have NELAP/NELAC accreditation.

Accreditation Number: _____ Name: _____

Address: _____ Phone: _____

Inorganic

Metals		Level	(mg/l)
D004	Arsenic	5.0	**0.15**
D005	Barium	100.0	**7**
D006	Cadmium	1.0	**0.0013**
D007	Chromium	5.0	**2.65**
D008	Lead	5.0	**0.395**
D009	Mercury	0.2	n/a
D010	Selenium	1.0	< 0.6
D011	Silver	5.0	< 0.11

Other	**Conc.**
Ammonia	n/a
Phosphorus	n/a
Formaldehyde	n/a
Total Solids	n/a
PCBs	n/a
Copper	n/a
Nickel	n/a
Zinc	n/a

Pesticides/Herbicides		Level	(mg/l)
D012	Endrin		n/a
D013	Lindane		n/a
D014	Methoxychlor		n/a
D015	Toxaphene		n/a
D016	2,4-D		n/a
D017	2,4,5-TP		n/a
D020	Chlordane		n/a
D031	Heptachlor		n/a

Organic

Volatile Compounds		Level	(mg/l)
D018	Benzene	0.5	< 0.00365
D019	Carbon Tetrachloride	0.5	< 0.00365
D021	Chlorobenzene	100.0	< 0.00365
D022	Chloroform	6.0	< 0.00365
D028	1,2-Dichloroethane	0.5	< 0.00365
D029	1,1-Dichloroethylene	0.7	< 0.00365
D035	Methyl Ethyl Ketone	200.0	< 0.0145
D039	Tetrachloroethylene	0.7	< 0.00365
D040	Trichloroethylene	0.5	**0.0025**
D043	Vinyl Chloride	0.2	< 0.00075

Semi-Volatile Compounds		Level	(mg/l)
D023	o-Cresol	200.0	< 0.0042
D024	m-Cresol	200.0	n/a
D025	p-Cresol	200.0	< 0.0085
D026	Cresol	200.0	n/a
D027	1,4-Dichlorobenzene	7.5	< 0.00365
D030	2,4-Dinitrotoluene	0.13	< 0.0085
D032	Hexchlorobenzene	0.13	< 0.0042
D033	Hexachlorobutadiene	0.5	< 0.0042
D034	Hexachloroethane	3.0	< 0.0042
D036	Nitrobenzene	2.0	< 0.0042
D037	Pentachlorophenol	100.0	< 0.0215
D038	Pyridine	5.0	n/a
D041	2,4,5-Trichlorophenol	400.0	< 0.0042
D042	2,4,6-Trichlorophenol	2.0	< 0.0042

J. General Information

1 ☑ No ☐ Yes Is this waste a hazardous material as defined in 49 CFR Section 172.101?
If yes, include shipping name, placard hazard class and packaging group:

_____

2 ☑ No ☐ Yes Is this waste regulated as a reportable quantity as defined in 49 CFR Section 172.101 Appendix A?

3 ☑ No ☐ Yes Is this waste a marine pollutant as defined in 49 CFR Section 172.101 Appendix B?

4 ☑ No ☐ Yes Is this hazardous waste, as determined by performing the Hazardos Waste Determination prescribed at CFR262.11? (Attach Documentation)

5 ☑ No ☐ Yes Does this waste contain any amount of Listed Hazardous Waste in 40 CFR 261.31, Hazardous Waste from Non-specific Sources; 261.32, Hazardous Waste from Specific Sources; and 261.33, Discarded Commercial Chemical Products, Off specification Species, Container Residues, and Spill Residues?

6 ☑ No ☐ Yes Does waste fail any of the four Hazardous Waste Characteristics of ignitibility, corrosivity, reactivity, and toxicity, as defined in 40 CFR 261.21, 261.22, 261.23, 261.23, respectively?

7 ☑ No ☐ Yes Is this waste state regulated? If Yes, define: _____

8 ☐ No ☑ Yes Are Material Safety Data Sheets and/or all analytical data relevant to this profile data sheet attached?

9 ☑ No ☐ Yes Is this waste derived from an Investigation of an Undergroud Storage Tank release (IDW)?

K. Sample

Has a sample been included? ☐ Yes ☑ No If yes, sampled by: _____ Date: _____

L. Generator's Certification

I hereby certify that all information submitted in this and attached documents is correct to the best of my knowledge. I also certify that any samples submitted are representative of the actual waste. If A&D Environmental Services discovers a descrepancy during the approval process, Generator grants A&D Environmental Services the authority to amend the profile, as A&D Environmental Services LLC deems necessary, to reflect the descrepancy.

Generator Signature	Print Name	Date
Digitally signed by TAPLEY.TRACEY.A.1063235772 Date: 2022.12.15 14:17:27 -05'00'	Tracey Tapley	12/15/2022

A&D Environmental Services — Bill of Lading / Material Manifest

A&D Job No:	Generator ID Number	Page 1 of	Emergency Response Phone	Tracking Number
2212-0167		1	800-255-3924-M180007951	41683

Generator's Name and Mailing Address: Former Tarheel Army Missle Plant, 204 Graham-Hopedale Road, Burlington, NC 27

Generator's site address (if different from mailing address):

Generator's Phone: 919-451-2291

Transporter 1 [ ] 2 [X] Company Name: A&D Environmental Services, Inc. — US EPA ID No: NCD986232221

Transporter 1 [ ] 2 [ ] Company Name: — US EPA ID No:

[X] Designated Facility
A&D Environmental Services, Inc.
2718 Uwharrie Road
Archdale, NC 27263
336-434-7750
NCD986232221

[ ] Designated Facility
A&D Environmental Services, Inc.
3149 Lear Drive
Burlington, NC 27215
336-229-0058
NCR000138628

[ ] Designated Facility (Please insert facility information below)

HM	Hazardous Materials Shipping Name and Description (if applicable)	No.	Type	QTY	Wt/Vol	Profile Number
	Non-Regulated Material (IDW-Solids)	15	DM	7500	P	NC2022-~~0105~~ 0306
	Non-Regulated Material (IDW-Liquids)	13	DM	4500	P	NC2022-0313

	Petroleum Products for Recycle		No.	Type	QTY	Wt/Vol	Profile Number
X	NA1993, Diesel fuel, 3, III	EGR# 128					
X	NA 1993, Fuel oil (No. 1,2,4,5 or 6), 3, III	EGR# 128					
X	UN1203, Gasoline, 3, II	EGR# 128					
	USED OIL (Not a USDOT Hazardous Material)						
	Petroleum Contact Water (Not a USDOT Hazardous Material)						

Universal Waste Lamps, Batteries, Ballasts, and Electronics for Recycle

HM	No.	Type	Est. Wt.	Count	Shipping Name and Description (if applicable)		Common Name	Discrepancy
X					RQ, UN3506, Mercury contained in manufactured articles, 8 (6.1)	ERG# 172	Mercury Devices	
X					RQ, UN3432, Polychlorinated biphenyls, solid, 9, II	EGR# 171	TSCA Exempt PCB Lamp Ballasts	
X					UN2800, Batteries, wet non-spillable, 8	EGR# 154	Sealed Lead Acid Batteries	
X					UN2794, Batteries, wet, filled with acid, 8	EGR# 154	Lead Acid Batteries	
X					UN2795, Batteries, wet, filled with alkali, 8	EGR# 154	Wet NiCad Batteries	
X					UN3090, Lithium metal batteries, 9	EGR# 138	Lithium Metal Batteries	
X					UN3480, Lithium ion batteries, 9	EGR# 147	Lithium Ion Batteries	
					Batteries, dry, sealed n.o.s.		Alkaline Batteries	
					Batteries, dry, sealed n.o.s.		Dry NiCad Batteries	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164 (e)		Florescent lamps (4-Ft. and Under)	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164 (e)		Florescent lamps (Over 4-Ft.)	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164 (e)		Circular/U-tube lamps	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164 (e)		Compact Lamps	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164 (e)		Shielded Lamps	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164 (e)		HID/MV/UV Lamps	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164 (e)		Incandescent Lamps	
					Non-PCB Light Ballasts for Recycle (Not DOT-Regulated)		Non-PCB Light Ballasts/Capacitors	
					Electronic Equipment for Recycle (Not DOT-Regulated)		e-Waste	

Shipper's Certification: This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transport according to the applicable regulations of the Department of Transportation. I further certify that none of the materials described above are hazardous waste as defined by EPA 40CFR Part 261 or any applicable state law, and unless specifically identified above the materials contain less than 1,000 ppm total halogens and do not contain quantifiable levels (2ppm) of PCBs as defined by EPA 40 CFR Parts 279 and 761.

Shipper's/ Offeror's Printed/Typed Name	Signature	Month	Day	Year
Tracey Tapley	[signature]	12	27	22

Transporter 1 Printed/Typed Name	Signature	Month	Day	Year
David Cobb	[signature]	12	27	22

Transporter 2 Printed/Typed Name	Signature	Month	Day	Year

Discrepancy Indication / Additional Information:

Designated Facility Certification: I hereby acknowledge receipt of the materials covered by this manifest except for any discrepancy indicated above.

Printed/Typed Name	Signature	Month	Day	Year

DESIGNATED FACILITY TO GENERATOR

Appendix M

Data Validation Narratives

Tarheel Army Missile Plant
Surface Water Data Validation Summary
March 21, 2022

The data review was conducted in accordance with the Tarheel Army Missile Plant Uniform Federal Policy Quality Assurance Project Plan (QAPP) (February 2022), Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3, and method requirements. Results are considered usable as qualified. This section presents the overall assessment of the data with respect to the PARCC parameters (precision, accuracy, representativeness, completeness, comparability) and sensitivity.

TABLE 1: SUMMARY OF SAMPLES FOR THEGROUNDWATER EVENT

Sample ID	Laboratory ID	QC Designation	Analyses
SW-3A	XC22020-001		VOCs
SW-3	XC22020-002		
SW-3B	XC22020-003		
SW-2	XC22020-004		
SW-2A	XC22020-005		
SW-1	XC22020-006		
SW-1A	XC22020-007	Not Analyzed	
DUP-SW-01	XC22020-008	Field Duplicate to sample SW-2	
TB-01	XC22020-009	Trip Blank	

ID – Identification QC – Quality Control VOCs – Volatile Organic Compounds

1.1 PRECISION

Precision is a measure of agreement among replicate (or between duplicate) or co-located sample measurements of the same analyte. The closer the numerical values of the measurements are to each other, the more precise the measurement. Precision for a single analyte was expressed as a relative percent difference (RPD) or absolute difference between field duplicate results.

One field duplicate sample were collected in association with this event. A matrix spike and matrix spike duplicate (MS/MSD) was not performed on a site-specific sample for this sampling event. The comparison between results of the field duplicate pairs met the criteria listed below.

- If the parent sample and duplicate values are >5xLOQ, then <30% RPD for water and vapor samples (<50% soil).

- If the parent sample or duplicate sample value is <5xLOQ, then absolute difference is <2xLOQ for water (<3.5xLOQ for soil and soil vapor).

No results were qualified as estimated or as unusable based on the precision between the field indicating acceptable precision was demonstrated.

1.2 ACCURACY

Accuracy is a measure of bias in a measurement system. The closer the value of the measurement agrees with the true value, the more accurate the measurement. This was expressed as the percent recoveries of surrogate recoveries and recoveries of target analytes in the laboratory control samples. A MS/MSD was not performed on a site-specific sample for this sampling event.

No results were rejected or qualified as estimated based on the accuracy between the LCS recoveries or surrogate recoveries; indicating acceptable accuracy was demonstrated with respect to the analytical method and matrix.

1.3 REPRESENTATIVENESS

Representativeness is the degree to which data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or an environmental condition. The design of, and rationale for, the sampling program (in terms of the purpose for sampling, selecting the sampling locations, the number of samples to be collected, the ambient conditions for sample collection, the frequencies and timing for sampling, and the sampling techniques) assures that the environmental condition has been sufficiently represented. Representativeness was maintained during the sampling effort by completing the sampling using similar sampling procedures and in accordance with the approved QAPP and work plan

The agreement between the field duplicate results was also used to assess representativeness. The close agreement between the duplicate results is considered to indicate that the samples collected are adequately representative of the medium sampled.

1.4 COMPARABILITY

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared to another. For this project, comparability was achieved by collecting samples following the approved QAPP; analyzing the samples using standard analytical methodologies with reporting limits that met screening level criteria to the extent attainable, using common traceable calibration and reference materials; and reporting the analytical results in appropriate and consistent units.

1.5 COMPLETENESS

Completeness is a measure of the number of valid measurements obtained in relation to the total number of measurements planned. Completeness is expressed as the percentage of valid or usable measurements to planned measurements. The data are considered usable as qualified. The completeness for this sampling event was 100% satisfying the QAPP requirement of 90%.

1.6 Sensitivity

The laboratory reported detectable results between the MDL and the limit of quantitation (LOQ). To reflect the higher degree of uncertainty associated with values reported between the MDL and LOQ, these results were qualified as (“J”).

Tarheel Army Missile Plant
Data Validation Summary

Data Package Number: XC22020
Sampling Event Dates: March 21, 2022

The table below summarizes the data package and sample identifications discussed in this data review.

Field Identification	Sample Type	Laboratory Identification	Matrix	Analyses
				VOCs
SW-3A	SA	XC22020-001	Surface Water	X
SW-3	SA	XC22020-002	Surface Water	X
SW-3B	SA	XC22020-003	Surface Water	X
SW-2	SA	XC22020-004	Surface Water	X
SW-2A	SA	XC22020-005	Surface Water	X
SW-1	SA	XC22020-006	Surface Water	X
SW-1A	SA	XC22020-007	Surface Water	--
DUP-SW-01	FD	XC22020-008	Surface Water	X
TB-01	TB	XC22020-009	Water	X

Sample Type: FD- Field Duplicate SA – Sample TB – Trip Blank
Analyses: VOCs (Method 8260D)– Volatile Organic Compounds -- not analyzed

The data review was conducted in accordance with the Tarheel Army Missile Plant Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) (February 2022), Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3, and method requirements.

General Overall Assessment:

_____ Data are usable without qualification.
__X__ Data are usable with qualification
_____ Some or all data are unusable for any purpose (detailed below).

Case Narrative Comments: Any laboratory case narrative comments concerning data qualification were addressed in the table below.

Trace level detects, reported between the method detection limit (DL) and the limit of quantitation (LOQ), have been qualified as estimated (J) by the laboratory. The other occurrences of data qualification are covered in the following table.

Review Parameter	Criteria Met?	Comment
Chain of Custody & Sample Receipt	Yes	The samples were received by Pace Analytical Service, LLC (Pace) West Columbia, South Carolina in good condition and were consistent with the accompanying chain of custody (COC).

Review Parameter	Criteria Met?	Comment
		The cooler temperatures upon receipt was within the recommended ≤6 degrees Celsius (°C) temperature range. Sample SW-1A was received at the laboratory; however, Pace was instructed not to analyze the sample per instructions from the client.
Holding Times	Yes	The analysis was conducted within the holding time requirements for the methods.
Laboratory Blanks • Method Blank	Yes	No target analytes were detected within the method blanks.
Matrix Quality Control • Matrix Spike/ Matrix Spike Duplicate None reported in this data package • Laboratory Duplicate None in this data package	NA	**Matrix Spike/ Matrix Spike Duplicate (MS/MSD)** A MS/MSD was not reported in this data package. **Laboratory Duplicate** A laboratory duplicate was not reported in this data package.
Method Quality Control • Surrogates (VOCs)	Yes	The surrogate recoveries were within the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3 limits.
Field Quality Control • Trip Blank TB-01 • Field Duplicate SW-2/DUP-SW-01 • Equipment Blank None reported in this package	Yes	**Trip Blank (VOCs Only)** Target analytes were not detected in the trip blank**.** **Field Duplicate** The comparison between results of the field duplicate pairs met the applicable evaluation criteria listed below: • If the parent sample and duplicate values are >5xLOQ, then <30% RPD for water and vapor samples (<50% soil). • If the parent sample or duplicate sample value is <5xLOQ, then absolute difference is <2xLOQ for water (<3.5xLOQ for soil and soil vapor). **Equipment Blank** An equipment was not required for this sampling event.
Reporting limits met?	Yes	No samples were analyzed at a dilution.
Laboratory Control Sample	Yes	One laboratory control sample (LCS) per method per analytical batch was prepared and analyzed. The LCS recoveries were within DoD QSM Version 5.3 limits.

> - Greater Than
< - Less Than
≤ - Less Than or Equal To
± - Plus or Minus
°C – Degrees Celsius
% - Percent
COC – Chain of Custody
DL – Detection Limit
DoD – Department of defense
LCS – Laboratory Control Sample
LOQ – Limit of Quantitation
MS/MSD – Matrix Spike/ Matrix Spike Duplicate
NA – Not Applicable
QSM – Quality Systems Manual
RL – Reporting Limit
RPDs – Relative Percent Differences
VOCs – Volatile Organic Compounds

Tarheel Army Missile Plant
Soil Data Validation Summary

The data review was conducted in accordance with the Tarheel Army Missile Plant Uniform Federal Policy Quality Assurance Project Plan (QAPP) (February 2022), Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3, guidance from DoD Data Validation Guidelines, and method requirements. Results are considered usable as qualified. This section presents the overall assessment of the data with respect to the PARCC parameters (precision, accuracy, representativeness, completeness, comparability) and sensitivity. The individual review narratives are attached.

TABLE 1:
SUMMARY OF SAMPLES

Data Package	Sample ID	Laboratory ID	QC Designation	Analyses
XF22018	RI-SB-01 (2-8)	XF22018-001		SVOCs, Metals
	RI-SB-02 (2-6)	XF22018-002		
	RI-SB-03 (2-6)	XF22018-003		
	RI-SB-05 (2-8)	XF22018-004		
	RI-SB-06 (4-8)	XF22018-005		
	RI-SB-07 (2-6)	XF22018-006		
	RI-SB-08 (2-6)	XF22018-007		
	RI-SB-09b (2-8)	XF22018-008		
	RI-SB-11 (10-12)	XF22018-010		
	RI-SB-10 (6-10)	XF22018-011	MS/MSD - Metals	
	EB-01	XF22018-012	Equipment Blank	VOCs, SVOCs, Metals*
	RI-SB-12(2-6)	XF22018-013		SVOCs, Metals
XF22021	RI-SB-07 (2-4)	XF22021-001		VOCs
	RI-SB-07 (12-14)	XF22021-002		
	RI-SB-08 (4-6)	XF22021-003		
	RI-SB-08 (6-8)	XF22021-004		
	RI-SB-09a (1-4)	XF22021-005		
	RI-SB-09b (6-8)	XF22021-006		
	RI-SB-09b (10-12)	XF22021-007		
	RI-SB-10 (2-4)	XF22021-008		
	RI-SB-10 (18-20)	XF22021-009	MS/MSD - VOCs	
	RI-SB-11 (4-6)	XF22021-010		
	RI-SB-11 (10-12)	XF22021-011		
	RI-SB-12 (2-4)	XF22021-012		
	TB-02	XF22021-013	Trip Blank	

Data Package	Sample ID	Laboratory ID	QC Designation	Analyses
XF22026	RI-SB-01 (4-6)	XF22026-001		VOCs
	RI-SB-01 (10-12)	XF22026-002		
	RI-SB-02 (4-6)	XF22026-003		
	RI-SB-02 (6-8)	XF22026-004		
	RI-SB-03 (6-8)	XF22026-005		
	RI-SB-03 (16-18)	XF22026-006		
	RI-SB-04 (6-8)	XF2206-007		
	RI-SB-04 (14-16)	XF22026-008		
	RI-SB-05 (2-4)	XF22026-009		
	RI-SB-05 (10-12)	XF22026-010		
	RI-SB-06 (4-6)	XF22026-011		
	RI-SB-06 (16-18)	XF22026-012		
	RI-SB-02 (2-4)	XF22026-013		
	TB-01	XF22026-014	Trip Blank	
	DUP-SB-01	XF22026-015	Field Duplicate to Sample RI-SB-02 (6-8)	
XF24009	RI-SB-13 (2-4)	XF24009-001		VOCs
	RI-SB-13 (4-6)	XF24009-002		
	RI-SB-13 (10-12)	XF24009-003		
	RI-SB-14 (0-2)	XF24009-004		
	RI-SB-14 (10-12)	XF24009-005		
	RI-SB-15 (2-4)	XF24009-006		
	RI-SB-15 (12-14)	XF24009-007		
	FB-01	XF24009-008	Field Blank	
	TB-03	XF24009-009	Trip Blank	
	RI-SB-16 (0-2)	XF24009-010		
	RI-SB-16 (4-6)	XF24009-011		
	DUP-SB-02	XF24009-012	Field Duplicate to Sample RI-SB-16 (4-6)	
XF24011	RI-SB-20 (0-2)	XF24011-001		VOCs
	RI-SB-20 (4-6)	XF24011-002	MS/MSD - VOCs	
	RI-SB-21 (0-2)	XF24011-003		
	RI-SB-21 (2-4)	XF24011-004		
	RI-SB-22 (2-4)	XF24011-005		
	RI-SB-22 (4-6)	XF24011-006		
	RI-SB-22 (6-8)	XF24011-007		
	RI-SB-23 (6-8)	XF24011-008		
	RI-SB-23 (16-18)	XF24011-009		
	EB-02	XF24011-010	Equipment Blank	VOCs, SVOCS, Metals*
	TB-05	XF24011-011	Trip Blank	VOCs

Data Package	Sample ID	Laboratory ID	QC Designation	Analyses
XF24012	RI-SB-13 (2-6)	XF24012-001	MS/MSD – Metals	SVOCs, Metals
	RI-SB-14 (0-4)	XF24012-002		
	RI-SB-15 (2-4)	XF24012-003		
	RI-SB-16 (0-4)	XF24012-004		
	RI-SB-17 (0-6)	XF24012-005		
	RI-SB-18 (0-6)	XF24012-006		
	RI-SB-19 (0-4)	XF24012-007		
	RI-SB-20 (0-6)	XF24012-008		
	RI-SB-21 (0-4)	XF24012-009		
	RI-SB-22 (0-8)	XF24012-010		
	RI-SB-23 (4-8)	XF24012-011		
	DUP-SB-02	XF24012-012	Field duplicate to sample RI-SB-16 (0-4)	
	DUP-SB-03	XF24012-013	Field duplicate to sample RI-SB-19 (0-4)	
XF25016	RI-GW-02 (0-4)	XF25016-001		Metals
	RI-GW-02 (14-16)	XF25016-002		TOC
	RI-GW-03 (0-6)	XF25016-003		Metals
	RI-GW-04 (0-6)	XF25016-004		Metals
	RI-GW-04 (12-15)	XF25016-005		TOC
	RI-GW-05 (0-4)	XF25016-006		Metals
	RI-GW-05 (8-12)	XF25016-007		TOC
	RI-GW-06 (0-6)	XF25016-008		Metals
	RI-GW-06 (6-8)	XF25016-009		TOC
	RI-GW-07 (0-4)	XF25016-010		Metals
	RI-GW-07 (14-16)	XF25016-011		TOC
	RI-GW-24 (0-4)	XF25016-012	MS/MSD – SVOCs, Metals	SVOCs, Metals
XF25020	RI-GW-01	XF25020-001		VOCs
	RI-GW-02	XF25020-002	MS/MSD - VOCs	
	RI-GW-04	XF25020-003		
	R-GW-05	XF25020-004		
	RI-GW-06	XF25020-005		
	RI-GW-07	XF25020-006		
	RI-GW-08	XF25020-007		
	DUP-GW-01	XF25020-008	Duplicate to RI-GW-02	
	TB-06	XF25020-009	Trip Blank	
	FB-02	XF25020-010	Field Blank	
	FB-03	XF25020-011	Field Blank	
	EB-03	XF25020-012	Equipment Blank	
	RB-SB-24 (0-4)	XF25020-013		

Data Package	Sample ID	Laboratory ID	QC Designation	Analyses
	RB-SB-24 (8-10)	XF25020-014		
	RI-GW-01a (0-4)	XF25020-015		Metals
	RI-GW-01D (0-4)	XF25020-016		
	RI-GW-01D (11-13)	XF25020-017	MS/MSD - Metals	
XF27007	RI-SB-17(0-2)	XF27007-001		VOCs
	RI-SB-17 (2.4)	XF27007-002		
	RI-SB-17 (4-6)	XF27007-003		
	RI-SB-17 (6-8)	XF27007-004		
	RI-SB-17 (8-10)	XF27007-05		
	RI-SB-18 (2-4)	XF27007-006		
	RI-SB-18 (6-8)	XF27007-007		
	RI-SB-19 (2-4)	XF27007-008		
	RI-SB-19 (6-8)	XF27007-009		
	TB-04	XF27007-010	Trip Blank	
	DUP-SB-03	XF27007-011	Field Duplicate to RI-SB-19 (2-4)	

ID – Identification QC – Quality Control VOCs – Volatile Organic Compounds
MS/MSD – Matrix Spike/Matrix Spike Duplicate
SVOCs (Method 8270E) – Semivolatile Organic Compounds
Metals (Method 6020B) – Arsenic, Barium, Cadmium, Chromium, Lead, Silver, Selenium
*Metals including Mercury by 7470A

1.1 PRECISION

Precision is a measure of agreement among replicate (or between duplicate) or co-located sample measurements of the same analyte. The closer the numerical values of the measurements are to each other, the more precise the measurement. Precision for a single analyte was expressed as a relative percent difference (RPD) or absolute difference between matrix spike (MS) and matrix spike duplicate (MSD) results, laboratory duplicate samples, and field duplicate results.

MS/MSDs were performed on site-specific samples for this sampling event as presented in Table 1. The following field duplicate samples were collected in association with this event.

Data Package	Parent Identification	Analyses	Field Duplicate Identification
XF22018	RI-SB-02 (6-8)	VOCs	DUP-SB-01
XF24012	RI-SB-16 (0-4)	SVOCs, Metals	DUP-SB-02
XF24009	RI-SB-16 (4-6)	VOCs	
XF27007	RI-SB-19 (2-4)	VOCs	DUP-SB-03
XF24012	RI-SB-19 (0-4)	SVOCs, Metals	
XF25020	RI-GW-02	VOCs	DUP-GW-02

Results for organics were not qualified based on MS/MSD results alone. The outliers could be a result of the heterogeneity of the sample matrix or extraction efficiencies. The metals results

associated with MS/MSD RPDs outside acceptance criteria were qualified. With one exception, the comparison between results of the field duplicate pairs met the applicable evaluation criteria.

No results were rejected based on the precision between the field duplicate or the MS/MSDs results indicating acceptable precision was demonstrated. Results qualified as estimated based on field duplicate and MS/MSD results are considered usable for meeting project objectives as data usability was not adversely affected. Results are mostly likely outside the acceptance limits due to the heterogeneity of the sample matrix.

1.2 ACCURACY

Accuracy is a measure of bias in a measurement system. The closer the value of the measurement agrees with the true value, the more accurate the measurement. This was expressed as the percent recoveries of surrogate recoveries and recoveries of target analytes in the laboratory control samples (LCS) and site-specific MS/MSD samples. MS/MSD were performed on site-specific samples for this sampling event as listed in Table 1.

Ninety-seven percent (%) of the surrogate recoveries and 98% of the LCS recoveries were within the acceptance limits. Several MSMSD recoveries and/or RPDs were outside the acceptance limits for VOCs and SVOCs and several recoveries were below 10%. However, results for organics were not qualified based on MS/MSD results alone. The outliers could be a result of the heterogeneity of the sample matrix or extraction efficiencies. The metals results associated with MS/MSD recoveries outside acceptance limits were qualified.

No results were qualified as unusable based on accuracy. Result qualified as estimated based on the LCS recoveries, MS/MSD recoveries, or surrogate recoveries are considered usable as qualified; indicating acceptable accuracy was demonstrated with respect to the analytical method and matrix.

1.3 REPRESENTATIVENESS

Representativeness is the degree to which data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or an environmental condition. The design of, and rationale for, the sampling program (in terms of the purpose for sampling, selecting the sampling locations, the number of samples to be collected, the ambient conditions for sample collection, the frequencies and timing for sampling, and the sampling techniques) assures that the environmental condition has been sufficiently represented. Representativeness was maintained during the sampling effort by completing the sampling using similar sampling procedures and in accordance with the approved QAPP and work plan.

The agreement between the field duplicate results was also used to assess representativeness. The close agreement between the duplicate results is considered to indicate that the samples collected are adequately representative of the medium sampled.

1.4 COMPARABILITY

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared to another. For this project, comparability was achieved by collecting samples following the approved QAPP; analyzing the samples using standard analytical methodologies with reporting limits that met screening level criteria to the extent attainable, using common traceable calibration and reference materials; and reporting the analytical results in appropriate and consistent units.

1.5 COMPLETENESS

Completeness is a measure of the number of valid measurements obtained in relation to the total number of measurements planned. Completeness is expressed as the percentage of valid or usable measurements to planned measurements. The data are considered usable as qualified. The completeness for this sampling event was 100% satisfying the QAPP requirement of 90%.

However, for the soil samples, the Resource Conservation and Recovery Act (RCRA) eight metals analysis was requested on the COC. The laboratory inadvertently did not analyze and report mercury for the soil samples. Based on previous investigations, mercury was not identified as a constituent of potential concern for the site.

1.6 SENSITIVITY

The laboratory reported detectable results between the detection limit (DL) and the limit of quantitation (LOQ). To reflect the higher degree of uncertainty associated with values reported between the DL and LOQ, these results were qualified as (“J”). The laboratory reported the results nondetect at the limit of detection (LOD) on the data sheets. However, the results are reported as nondetect to the LOQ in the electronic data tables. Several samples were analyzed at dilutions due to target analyte concentrations or matrix interferences. The LOQs have been elevated to reflect the dilution; therefore, results reported as nondetect at elevated LOQs will need to be elevated during the human health and ecological risk evaluation.

Tarheel Army Missile Plant
Data Validation Summary

Data Package Number: XF22018
Sampling Event Dates: June 20th and 21st, 2022

The table below summarizes the data package and sample identifications discussed in this data review.

Field Identification	Sample Type	Laboratory Identification	Matrix	Analyses		
				VOCs	SVOCs	Metals
RI-SB-01 (2-8)	SA	XF22018-001	Soil	--	X	X
RI-SB-02 (2-6)	SA	XF22018-002	Soil	--	X	X
RI-SB-03 (2-6)	SA	XF22018-003	Soil	--	X	X
RI-SB-05 (2-8)	SA	XF22018-004	Soil	--	X	X
RI-SB-06 (4-8)	SA	XF22018-005	Soil	--	X	X
RI-SB-07 (2-6)	SA	XF22018-006	Soil	--	X	X
RI-SB-08 (2-6)	SA	XF22018-007	Soil	--	X	X
RI-SB-09b (2-8)	SA	XF22018-008	Soil	--	X	X
RI-SB-11 (10-12)	SA	XF22018-010	Soil	--	X	X
RI-SB-10 (6-10)	SA	XF22018-011	Soil	--	X	X
EB-01	EB	XF22018-012	Water	X	X	X*
RI-SB-12(2-6)	SA	XF22018-013	Soil	--	X	X

Sample Type: FD- Field Duplicate SA – Sample EB – Equipment Blank
Analyses: VOCs (Method 8260D)– Volatile Organic Compounds -- not analyzed
SVOCs (Method 8270E) – Semivolatile Organic Compounds
Metals (Method 6020B) – Arsenic, Barium, Cadmium, Chromium, Lead, Silver, Selenium
*Metals including Mercury by 7470A

The data review was conducted in accordance with the Tarheel Army Missile Plant Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) (February 2022), Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3, and method requirements.

General Overall Assessment:

_____ Data are usable without qualification.
__X__ Data are usable with qualification
_____ Some or all data are unusable for any purpose (detailed below).

Case Narrative Comments: Any laboratory case narrative comments concerning data qualification were addressed in the table below.

Trace level detects, reported between the method detection limit (DL) and the limit of quantitation (LOQ), have been qualified as estimated (J) by the laboratory. The other occurrences of data qualification are covered in the following table.

Review Parameter	Criteria Met?	Comment
Chain of Custody & Sample Receipt	No	The samples were received by Pace Analytical Service, LLC (Pace) West Columbia, South Carolina in good condition and were consistent with the accompanying chain of custody (COC). The cooler temperatures upon receipt was within the recommended ≤6 degrees Celsius (°C) temperature range. Sample RI-SB-12(2-6) was received at the laboratory; however, was not listed on the COC. The sample was logged in for the sample containers received. For the soil samples, the Resource Conservation and Recovery Act (RCRA) eight metals analysis was requested on the COC. The laboratory inadvertently did not analyze and report mercury.
Holding Times	Yes	The analysis was conducted within the holding time requirements for the methods.
Laboratory Blanks • Method Blank	No	With the exceptions listed in Table 1, no target analytes were detected within the method blanks.
Matrix Quality Control • Matrix Spike/ Matrix Spike Duplicate (MS/MSD) RI-SB-10 (6-10) - Metals EB-01 – Not evaluated (non-site sample) • Laboratory Duplicate None in this data package	No	**Matrix Spike/ Matrix Spike Duplicate** With the exception in Table 2, the MS/MSD recoveries and relative percent differences (RPDs) were within the laboratory acceptance limits. Results in the native sample greater than four times the concentration of the spike added during digestions/extractions are not considered to be a representative measure of accuracy. Further action with respect to spike recovery evaluation or qualification of data was not considered necessary. **Laboratory Duplicate** A laboratory duplicate was not reported in this data package.
Method Quality Control • Surrogates - Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs)	Yes	The surrogate recoveries were within the Department of Defense (DoD) Quality Systems Manual (QSM) version 5.3 limits.
Field Quality Control • Trip Blank NA • Field Duplicate None reported in this data package • Equipment Blank EB-01 • Field Blank None reported in this data package	No	**Trip Blank (VOCs Only)** A trip blank was not required as VOCs were not requested on the site samples. **Field Duplicate** A field duplicate was not reported in this data package. **Equipment Blank** With exceptions listed in Table 3, no target analytes were not detected in the equipment blank. **Field Blank** A field blank was not reported in this data package.

Review Parameter	Criteria Met?	Comment
LOQs met?	No	For SVOCs, samples RI-SB-03 (2-6) and RI-SB-12(2-6) were diluted due to appearance or extract color. For Metals (6020), due to sample matrix effect on the internal standard (ISTD), a dilution was required for the following samples: RI-SB-02 (2-0), RI-SB-03 (2-6), RI-SB-05 (2-8), RI-SB-06 (4-8), RI-SB-07 (2-6), RI-SB-09b (2-8), RI-SB-11 (10-12), and RI-SB-10 (6-10). The LOQs have been elevated to reflect the dilution and results were reported as nondetect at elevated LOQs.
Laboratory Control Sample (LCS)	Yes	One LCS per method per analytical batch was prepared and analyzed. With the exceptions listed in Table 4, the LCS recoveries were within DoD QSM version 5.3 limits.
Other issues identified in the Case Narrative: • Initial Calibration Verification (ICV) • Continuing Calibration Verification (CCV)	No	For SVOCs, the ICV for nitrobenzene associated with the samples reported in this package recovered above the below control limit. Therefore, the associated results were reported as estimated (J-) to reflect the potential low bias. For VOCs, the CCV associated with sample XF22018-012 (EB-01) for analytes: Acetone and 2-Butanone recovered above the upper control limit. The sample associated with this CCV were non-detect for the analytes; therefore, the data qualification was not considered necessary.

> - Greater Than
< - Less Than
≤ - Less Than or Equal To
± - Plus or Minus
°C – Degrees Celsius
% - Percent
CCV – Continuing Calibration Verification
COC – Chain of Custody
DL – Detection Limit
DoD – Department of defense
ICV – Initial Calibration Verification
J- - Estimated with a potential low bias
LCS – Laboratory Control Sample
LOQ – Limit of Quantitation
MS/MSD – Matrix Spike/ Matrix Spike Duplicate
NA – Not Applicable
QSM – Quality Systems Manual
RCRA - Resource Conservation and Recovery Act
RPDs – Relative Percent Differences
SVOCs – Semivolatile Organic Compounds
VOCs – Volatile Organic Compounds

Table 1: Blank Outliers and Resultant Data Qualification

Associated Samples	Analyte	Concentration	Qualification
VOCs			
MB XQ46528-001	Carbon Disulfide	0.43 µg/L	None. The associated result was reported as nondetect.
SVOCs			
MB XQ45818-001	Naphthalene	0.16 µg/L	The associated results (EB-01) was qualified as nondetect (U)

µg/L – Micrograms per Liter
MB – Method Blank
SVOCs – Semivoltaile Organic Compounds
VOCs – Volatile Organic Compounds

Table 2: Matrix Spike Recovery and/or RPD Outliers and Resultant Data Qualification

Samples	Analyte	MS %R	MSD %R	%R (Limits)	RPD (%)	RPD Limit (%)	Data Qualification
Metals							
RI-SB-10 (6-10)	Barium	**26**	**20**	86-116	3.1	20	The associated results were qualified as estimated (J-) to reflect the potential low bias.
	Lead	**26**	**18**	84-118	**41**	20	
	Arsenic	89	112	82-118	**55**	20	The associated results were qualified as estimated (J) to reflect the potential indeterminate bias suggested by the imprecision in MS/MSD results.
	Cadmium	85	94	86-116	**45**	20	
	Chromium	99	**155**	83-119	**39**	20	The associated result was qualified as estimated (J+) to reflect the potential high bias.
	Selenium	83	106	80-119	**55**	20	The associated results were qualified as estimated (J) to reflect the potential indeterminate bias suggested by the imprecision in MS/MSD results.
	Silver	110	**130**	83-118	**50**	20	

J – Estimated with an indeterminate bias
J - - Estimated with a potential low bias
MS – Matrix Spike
RPD – Relative Percent Difference
J+ - Estimated with a potential high bias
%R – Percent Recovery
Matrix Spike Duplicate – Matrix Spike Duplicate

Table 3: Equipment and Field Blank Outliers and Resultant Data Qualification

Blank Identification/Data Package	Blank Type	Analyte	Concentration µg/L	Qualification
EB-01 (XC22018)	Equipment Blank	*Methylene Chloride*	1.7	Per the guidance validation, the associated results reported at concentrations <5x the blank contamination (<10x common laboratory contaminate) after accounting for the preparation value to convert from water to soil units and adjusting for percent solid could potentially be biased high.
		Acetone	12	
		Caprolactam	1.1	
		Phenol	1.8	
		Pyrene	0.061	
		Fluoranthene	0.046	
		2-Methylnaphthalene	0.041	
		Barium	1.3	
		Lead	2.3	
EB-02 (XF24011)		*Methylene Chloride*	0.96	
		Acetone	12	
		Caprolactam	3.6	
		Di-N-Butylphthalate	0.64	
EB-03 (XF25020)		*Methylene Chloride*	2.0	
		Acetone	12	
FB-01 (XF24009)	Field Blank	**Acetone**	11	
		Methylene Chloride	1.5	
FB-02 (XF25020)		**Acetone**	15	
		Methylene Chloride	0.8	
FB-03 (XF25020)		**Acetone**	9.9	
		Methylene Chloride	2.1	

Italic – Common Laboratory Contaminant **Bold – Detected in soil samples**
< - less than
µg/L – micrograms per liter

Table 4: Laboratory Control Sample Recovery and Resultant Data Qualification

Associated Samples	Analyte	%R	%R (Limits)	Data Qualification
VOCs				
LCS XQ46528-002	Acetone	**170**	39-160	The associated result was qualified as estimated (J+) to reflect the potential high bias.
SVOCs				
LCS XQ45818-002	bis(2-Ethylhexyl)phthalate	**150**	50-150	None. The potential bias was considered to be high, and the associated sample results were reported as non-detect.

LCS – Laboratory Control Sample
J+ - Estimated with a potential high bias
%R – Percent Recovery
SVOCs – Semivolatile Organic Compounds
VOCs – Volatile Organic Compounds

Tarheel Army Missile Plant
Data Validation Summary

Data Package Number: XF22021
Sampling Event Dates: June 20, 2022

The table below summarizes the data package and sample identifications discussed in this data review.

Field Identification	Sample Type	Laboratory Identification	Matrix	Analyses		
				VOCs	SVOCs	Metals
RI-SB-07 (2-4)	SA	XF22021-001	Soil	X	--	--
RI-SB-07 (12-14)	SA	XF22021-002	Soil	X	--	--
RI-SB-08 (4-6)	SA	XF22021-003	Soil	X	--	--
RI-SB-08 (6-8)	SA	XF22021-004	Soil	X	--	--
RI-SB-09a (1-4)	SA	XF22021-005	Soil	X	--	--
RI-SB-09b (6-8)	SA	XF22021-006	Soil	X	--	--
RI-SB-09b (10-12)	SA	XF22021-007	Soil	X	--	--
RI-SB-10 (2-4)	SA	XF22021-008	Soil	X	--	--
RI-SB-10 (18-20)	SA	XF22021-009	Soil	X	--	--
RI-SB-11 (4-6)	SA	XF22021-010	Soil	X	--	--
RI-SB-11 (10-12)	SA	XF22021-011	Soil	X	--	--
RI-SB-12 (2-4)	SA	XF22021-012	Soil	X	--	--
TB-02	TB	XF22021-013	Water	X	--	--

Sample Type: FD- Field Duplicate SA – Sample TB – Trip Blank
Analyses: VOCs (Method 8260D)– Volatile Organic Compounds -- not analyzed
SVOCs (Method 8270E) – Semivolatile Organic Compounds
Metals (Method 6020B) – Arsenic, Barium, Cadmium, Chromium, Lead, Silver, Selenium
*Metals including Mercury by 7470A

The data review was conducted in accordance with the Tarheel Army Missile Plant Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) (February 2022), Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3, and method requirements.

General Overall Assessment:

_____ Data are usable without qualification.
__X__ Data are usable with qualification
_____ Some or all data are unusable for any purpose (detailed below).

Case Narrative Comments: Any laboratory case narrative comments concerning data qualification were addressed in the table below.

Trace level detects, reported between the method detection limit (DL) and the limit of quantitation (LOQ), have been qualified as estimated (J) by the laboratory. The other occurrences of data qualification are covered in the following table.

Review Parameter	Criteria Met?	Comment
Chain of Custody & Sample Receipt	Yes	The samples were received by Pace Analytical Service, LLC (Pace) West Columbia, South Carolina in good condition and were consistent with the accompanying chain of custody (COC). The cooler temperatures upon receipt was within the recommended ≤6 degrees Celsius (°C) temperature range.
Holding Times	Yes	The analysis was conducted within the holding time requirements for the methods.
Laboratory Blanks • Method Blank	Yes	No target analytes were detected within the method blanks.
Matrix Quality Control • Matrix Spike/ Matrix Spike Duplicate (MS/MSD) RI-SB-10 (18-20) • Laboratory Duplicate None in this data package	No	**Matrix Spike/ Matrix Spike Duplicate** With the exceptions in Table 1, The MS/MSD recoveries and relative percent differences (RPDs) were within the laboratory acceptance limits. Results in the native sample greater than four times the concentration of the spike added during digestions/extractions are not considered to be a representative measure of accuracy. Further action with respect to spike recovery evaluation or qualification of data was not considered necessary. **Laboratory Duplicate** A laboratory duplicate was not reported in this data package.
Method Quality Control • Surrogates - Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs)	No	With one exception, the surrogate recoveries were within the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3 limits. For VOCs the surrogate Toluene-d8 for sample RI-SB-09a(1-4), exceeded the upper limited of the acceptance range. The detected results were qualified as estimated (J+) to reflect the potential high bias.
Field Quality Control • Trip Blank TB-01 • Field Duplicate None reported in this data package • Equipment Blank None in this data package • Field Blank None reported in this data package	Yes	**Trip Blank (VOCs Only)** No target analytes were detected in the trip blank sample. **Field Duplicate** A field duplicate sample was not reported in this data package. **Equipment Blank** An equipment was not reported is this data package. **Field Blank** A field blank was not reported in this data package.
LOQs?	Yes	No results were reported as non-detect at elevated limit of quantitation (LOQ).

Review Parameter	Criteria Met?	Comment
Laboratory Control Sample (LCS)	No	One LCS per method per analytical batch was prepared and analyzed. With the exceptions listed in Table 2, the LCS recoveries were within DoD QSM Version 5.3 limits.
Other issues identified in the Case Narrative: • Initial Calibration Verification (ICV) • Continuing Calibration Verification (CCV)	No	Trichloroethene was reported as an estimated value in sample RI-SB-08 (4-6) above the upper calibration level. The sample was re-analyzed from the medium level (methanol) vial, but was not reported as the result as below the LOQ. Therefore, the reported trichloroethene result was qualified as estimated (J). The ICV for dichlorodifluoromethane associated with the soil samples exceeded the acceptance criterion. As the associated results were reported as nondetect and the potential bias is considered to be high, data qualification was not considered necessary. The CCV for dichlorodifluoromethane, chloromethane, and vinyl chloride associated with the soil samples for batch 46389 exceeded the acceptance criteria. As the associated results were reported as nondetect and the potential bias is considered to be high, data qualification was not considered necessary. The CCV for dichlorodifluoromethane, chloromethane, bromomethane, and chloroethane associated with the soil samples for batch 46673 exceeded the acceptance criteria. As the associated results were reported as nondetect and the potential bias is considered to be high, data qualification was not considered necessary. The closing CCV for chloromethane for batch 46673 exceeded the acceptance criterion. As the associated results were reported as nondetect and the potential bias is considered to be high, data qualification was not considered necessary. The CCV associated with the trip blank for acetone exceeded the criterion. As the associated result was reported as nondetect and the potential bias is considered to be high, data qualification was not considered necessary.

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< - Less Than
≤ - Less Than or Equal To
± - Plus or Minus
°C – Degrees Celsius
% - Percent
CCV – Continuing Calibration Verification
COC – Chain of Custody
DL – Detection Limit
DoD – Department of defense
ICV – Initial Calibration Verification
J - Estimated with an indeterminate bias
J+ - Estimated with a potential high bias
LCS – Laboratory Control Sample
LOQ – Limit of Quantitation
MS/MSD – Matrix Spike/ Matrix Spike Duplicate
NA – Not Applicable
QSM – Quality Systems Manual
RL – Reporting Limit
RPDs – Relative Percent Differences
SVOCs – Semivolatile Organic Compounds
VOCs – Volatile Organic Compounds

Table 1: Matrix Spike Recovery Outliers and Resultant Data Qualification

Associated Samples	Analyte	%R	%R (Limits)	RPD	RPD (Limit)	Data Qualification
VOCs						
RI-SB-10 (18-20)	Several MS/MSD recoveries and RPDs were outside the acceptance limits. Results for organics are not qualified based on MS/MSD results alone. The outliers could be a result of the heterogeneity of the sample matrix or extraction efficiencies. Therefore, the results could be estimated based on the accuracy and imprecision.					

%R – Percent Recovery MS/MSD – Matrix Spike/Matrix Spike duplicate Sample
RPD – Relative Percent Difference

Table 2: Laboratory Control Sample Recovery and Resultant Data Qualification

Associated Samples	Analyte	%R	%R (Limits)	Data Qualification
VOCs				
LCS XQ46389-002	Chloromethane	**137**	50-136	None. The potential bias was considered to be high, and the associated sample results were reported as non-detect.
	Dichlorodifluoromethane	**165**	29-149	
LCS XQ46673-002	Chloromethane	**142**	50-136	
	Dichlorodifluoromethane	**150**	29-149	
	Vinyl Chloride	**143**	56-135	

LCS – Laboratory Control Sample %R – Percent Recovery
SVOCs – Semivolatile Organic Compounds VOCs – Volatile Organic Compounds

Tarheel Army Missile Plant
Data Validation Summary

Data Package Number: XF22026
Sampling Event Dates: June 20th and 21st, 2022

The table below summarizes the data package and sample identifications discussed in this data review.

Field Identification	Sample Type	Laboratory Identification	Matrix	Analyses		
				VOCs	SVOCs	Metals
RI-SB-01 (4-6)	SA	XF22026-001	Soil	X	--	--
RI-SB-01 (10-12)	SA	XF22026-002	Soil	X	--	--
RI-SB-02 (4-6)	SA	XF22026-003	Soil	X	--	--
RI-SB-02 (6-8)	SA	XF22026-004	Soil	X	--	--
RI-SB-03 (6-8)	SA	XF22026-005	Soil	X	--	--
RI-SB-03 (16-18)	SA	XF22026-006	Soil	X	--	--
RI-SB-04 (6-8)	SA	XF2206-007	Soil	X	--	--
RI-SB-04 (14-16)	SA	XF22026-008	Soil	X	--	--
RI-SB-05 (2-4)	SA	XF22026-009	Soil	X	--	--
RI-SB-05 (10-12)	SA	XF22026-010	Soil	X	--	--
RI-SB-06 (4-6)	SA	XF22026-011	Soil	X	--	--
RI-SB-06 (16-18)	SA	XF22026-012	Soil	X	--	--
RI-SB-02 (2-4)	SA	XF22026-013	Soil	X	--	--
TB-01	TB	XF22026-014	Water	X	--	--
DUP-SB-01	FD	XF22026-015	Soil	X	--	--

Sample Type: FD- Field Duplicate SA – Sample TB – Trip Blank
Analyses: VOCs (Method 8260D)– Volatile Organic Compounds -- not analyzed
SVOCs (Method 8270E) – Semivolatile Organic Compounds
Metals (Method 6020B) – Arsenic, Barium, Cadmium, Chromium, Lead, Silver, Selenium
*Metals including Mercury by 7470A

The data review was conducted in accordance with the Tarheel Army Missile Plant Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) (February 2022), Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3, and method requirements.

General Overall Assessment:

_____ Data are usable without qualification.
__X__ Data are usable with qualification
_____ Some or all data are unusable for any purpose (detailed below).

Case Narrative Comments: Any laboratory case narrative comments concerning data qualification were addressed in the table below.

Trace level detects, reported between the method detection limit (DL) and the limit of quantitation (LOQ), have been qualified as estimated (J) by the laboratory. The other occurrences of data qualification are covered in the following table.

Review Parameter	Criteria Met?	Comment
Chain of Custody & Sample Receipt	Yes	The samples were received by Pace Analytical Service, LLC (Pace) West Columbia, South Carolina in good condition and were consistent with the accompanying chain of custody (COC). The cooler temperatures upon receipt was within the recommended ≤6 degrees Celsius (°C) temperature range.
Holding Times	Yes	The analysis was conducted within the holding time requirements for the methods.
Laboratory Blanks • Method Blank	Yes	No target analytes were detected within the method blanks.
Matrix Quality Control • Matrix Spike/ Matrix Spike Duplicate (MS/MSD) None in this data package • Laboratory Duplicate None in this data package	NA	**Matrix Spike/ Matrix Spike Duplicate** A MS/MSD was not reported in this data package. **Laboratory Duplicate** A laboratory duplicate was not reported in this data package.
Method Quality Control • Surrogates – Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs)	Yes	The surrogate recoveries were within the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3 limits.
Field Quality Control • Trip Blank TB-01 • Field Duplicate DUB-SB-01/ RI-SB-02 (6-8) • Equipment Blank None in this data package • Field Blank None reported in this data package	Yes	**Trip Blank (VOCs Only)** No target analytes were detected in the trip blank sample. **Field Duplicate** The comparison between results of the field duplicate pairs met the applicable evaluation criteria listed below: • If the parent sample and duplicate values are >5x limit of quantitation (LOQ), then <30% RPD for water and vapor samples (<50% soil). • If the parent sample or duplicate sample value is <5xLOQ, then absolute difference is <2xLOQ for water (<3.5xLOQ for soil and soil vapor). **Equipment Blank** An equipment was not reported is this data package. **Field Blank** A field blank was not reported in this data package.
LOQs met?	Yes	No results were reported as non-detect at elevated LOQ.

Review Parameter	Criteria Met?	Comment
Laboratory Control Sample (LCS)	No	One LCS per method per analytical batch was prepared and analyzed. With the exceptions listed in Table 1, the LCS recoveries were within DoD QSM Version 5.3 limits.
Other issues identified in the Case Narrtive: • Initial Calibration Verification (ICV) • Continuing Calibration Verification (CCV)		The ICV for dichlorodifluoromethane associated with the soil samples exceeded the acceptance criterion. As the associated results were reported as nondetect and the potential bias is considered to be high, data qualification was not considered necessary. The CCV for dichlorodifluoromethane, chloromethane, and vinyl chloride associated with the soil samples for batch 46389 exceeded the acceptance criteria. As the associated results were reported as nondetect and the potential bias is considered to be high, data qualification was not considered necessary. The CCV for dichlorodifluoromethane, chloromethane, bromomethane, and chloroethane associated with the soil samples for batch 46673 exceeded the acceptance criteria. As the associated results were reported as nondetect and the potential bias is considered to be high, data qualification was not considered necessary. The closing CCV for chloromethane for batch 46673 exceeded the acceptance criterion. As the associated results were reported as nondetect and the potential bias is considered to be high, data qualification was not considered necessary. The CCV associated with the trip blank for acetone exceeded the criterion. As the associated result was reported as nondetect and the potential bias is considered to be high, data qualification was not considered necessary.

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% - Percent
CCV – Continuing Calibration Verification
COC – Chain of Custody
DL – Detection Limit
DoD – Department of defense
ICV – Initial Calibration Verification
J- - Estimated with a potential low bias
LCS – Laboratory Control Sample
LOQ – Limit of Quantitation
MS/MSD – Matrix Spike/ Matrix Spike Duplicate
NA – Not Applicable
QSM – Quality Systems Manual
RPDs – Relative Percent Differences
SVOCs – Semivolatile Organic Compounds
VOCs – Volatile Organic Compounds

Table 1: Laboratory Control Sample Recovery and Resultant Data Qualification

Associated Samples	Analyte	%R	%R (Limits)	Data Qualification
VOCs				
LCS XQ46389-002	Chloromethane	**137**	50-136	None. The potential bias was considered to be high, and the associated sample results were reported as non-detect.
	Dichlorodifluoromethane	**166**	29-149	
LCS XQ46673-002	Chloromethane	**142**	50-136	
	Dichlorodifluoromethane	**150**	29-149	
	Vinyl Chloride	**143**	56-135	

LCS – Laboratory Control Sample %R – Percent Recovery VOCs – Volatile Organic Compounds

Tarheel Army Missile Plant
Data Validation Summary

Data Package Number: XF24009
Sampling Event Dates: June 21st and 22nd, 2022

The table below summarizes the data package and sample identifications discussed in this data review.

Field Identification	Sample Type	Laboratory Identification	Matrix	Analyses		
				VOCs	SVOCs	Metals
RI-SB-13 (2-4)	SA	XF24009-001	Soil	X	--	--
RI-SB-13 (4-6)	SA	XF24009-002	Soil	X	--	--
RI-SB-13 (10-12)	SA	XF24009-003	Soil	X	--	--
RI-SB-14 (0-2)	SA	XF24009-004	Soil	X	--	--
RI-SB-14 (10-12)	SA	XF24009-005	Soil	X	--	--
RI-SB-15 (2-4)	SA	XF24009-006	Soil	X	--	--
RI-SB-15 (12-14)	SA	XF24009-007	Soil	X	--	--
FB-01	FB	XF24009-008	Water	X	--	--
TB-03	TB	XF24009-009	Water	X	--	--
RI-SB-16 (0-2)	SA	XF24009-010	Soil	X	--	--
RI-SB-16 (4-6)	SA	XF24009-011	Soil	X	--	--
DUP-SB-02	SA	XF24009-012	Soil	X	--	--

Sample Type: FD- Field Duplicate SA – Sample TB – Trip Blank
FB – Field Blank
Analyses: VOCs (Method 8260D)– Volatile Organic Compounds -- not analyzed
SVOCs (Method 8270E) – Semivolatile Organic Compounds
Metals (Method 6020B) – Arsenic, Barium, Cadmium, Chromium, Lead, Silver, Selenium
*Metals including Mercury by 7470A

The data review was conducted in accordance with the Tarheel Army Missile Plant Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) (February 2022), Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3, and method requirements.

General Overall Assessment:

_____ Data are usable without qualification.
__X__ Data are usable with qualification
_____ Some or all data are unusable for any purpose (detailed below).

Case Narrative Comments: Any laboratory case narrative comments concerning data qualification were addressed in the table below.

Trace level detects, reported between the method detection limit (DL) and the limit of quantitation (LOQ), have been qualified as estimated (J) by the laboratory. The other occurrences of data qualification are covered in the following table.

Review Parameter	Criteria Met?	Comment
Chain of Custody & Sample Receipt	Yes	The samples were received by Pace Analytical Service, LLC (Pace) West Columbia, South Carolina in good condition and were consistent with the accompanying chain of custody (COC). The cooler temperatures upon receipt was within the recommended ≤6 degrees Celsius (°C) temperature range.
Holding Times	Yes	The analysis was conducted within the holding time requirements for the methods.
Laboratory Blanks • Method Blank	Yes	No target analytes were detected within the method blanks.
Matrix Quality Control • Matrix Spike/ Matrix Spike Duplicate (MS/MSD) RI-SB-15 (2-4) • Laboratory Duplicate None in this data package	No	**Matrix Spike/ Matrix Spike Duplicate** With the exception in Table 1, the MS/MSD recoveries and relative percent differences (RPDs) were within the laboratory acceptance limits. Results in the native sample greater than four times the concentration of the spike added during digestions/extractions are not considered to be a representative measure of accuracy. Further action with respect to spike recovery evaluation or qualification of data was not considered necessary.. **Laboratory Duplicate** A laboratory duplicate was not reported in this data package.
Method Quality Control • Surrogates – Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs)	Yes	With one exception, the surrogate recoveries were within the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3 limits.
Field Quality Control • Trip Blank TB-03 • Field Duplicate DUB-SB-02/ RI-SB-16 (0-2) • Equipment Blank None in this data package • Field Blank FB-01	No	**Trip Blank (VOCs Only)** No target analytes were detected in the trip blank sample. **Field Duplicate** The comparison between results of the field duplicate pairs met the applicable evaluation criteria listed below: • If the parent sample and duplicate values are >5x limit of quantitation (LOQ), then <30% RPD for water and vapor samples (<50% soil). • If the parent sample or duplicate sample value is <5xLOQ, then absolute difference is <2xLOQ for water (<3.5xLOQ for soil and soil vapor). **Equipment Blank** An equipment was not reported is this data package.

Review Parameter	Criteria Met?	Comment
		Field Blank (VOCs Only) With the exceptions in Table 2, no target analytes were detected in the field blank sample.
LOQs met?	Yes	No results were reported as non-detect at elevated limit of quantitation (LOQ). For VOCs for sample DUP-SB-02, cis-1,2-dichloroethene was reported as detected above the calibration range. The sample was re-analyzed from the medium level (methanol) vial, but was not reported due to the result being below the LOQ. Therefore, as only the low level was reported, the cis-1,2-dichloroethene result was qualified as estimated (J).
Laboratory Control Sample (LCS)	No	One LCS per method per analytical batch was prepared and analyzed. With the exceptions listed in Table 3, the LCS recoveries were within DoD QSM Version 5.3 limits.
Other issues identified in the Case Narrtive: • Initial Calibration Verification (ICV) • Continuing Calibration Verification (CCV)		The ICV for dichlorodifluoromethane associated with the soil samples for batch 46673 exceeded the acceptance criterion. As the associated results were reported as nondetect and the potential bias is considered to be high, data qualification was not considered necessary. The CCV for dichlorodifluoromethane, chloromethane, bromomethane, vinyl chloride, and chloroethane associated with the soil samples for batch 46673 exceeded the acceptance criteria. As the associated results were reported as nondetect and the potential bias is considered to be high, data qualification was not considered necessary. The closing CCV for chloromethane for batch 46673 exceeded the acceptance criterion. As the associated results were reported as nondetect and the potential bias is considered to be high, data qualification was not considered necessary.

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< - Less Than
≤ - Less Than or Equal To
± - Plus or Minus
°C – Degrees Celsius
% - Percent
CCV – Continuing Calibration Verification
COC – Chain of Custody
DL – Detection Limit
DoD – Department of defense
ICV – Initial Calibration Verification
J - Estimated with a potential low bias
LCS – Laboratory Control Sample
LOQ – Limit of Quantitation
MS/MSD – Matrix Spike/ Matrix Spike Duplicate
µg/L – microgram per liters
NA – Not Applicable
QSM – Quality Systems Manual
RL – Reporting Limit
RPDs – Relative Percent Differences
SVOCs – Semivolatile Organic Compounds
VOCs – Volatile Organic Compounds

Table 1: Matrix Spike Recovery Outliers and Resultant Data Qualification

Associated Samples	Analyte	%R	%R (Limits)	RPD	RPD (Limit)	Data Qualification
VOCs						
RI-SB-15 (2-4)	Several MS/MSD recoveries and RPDs were outside the acceptance limits. Results for organics are not qualified based on MS/MSD results alone. The outliers could be a result of the heterogeneity of the sample matrix or extraction efficiencies. Therefore, the results could be estimated based on the accuracy and imprecision.					

%R – Percent Recovery MS/MSD – Matrix Spike/Matrix Spike duplicate Sample
RPD – Relative Percent Difference

Table 2: Equipment and Field Blank Outliers and Resultant Data Qualification

Blank Identification/Data Package	Blank Type	Analyte	Concentration µg/L	Qualification
EB-01 (XC22018)	Equipment Blank	*Methylene Chloride*	1.7	Per the guidance validation, the associated results reported at concentrations <5x the blank contamination (<10x common laboratory contaminate) after accounting for the preparation value to convert from water to soil units and adjusting for percent solid could potentially be biased high.
		Acetone	12	
		Caprolactam	1.1	
		Phenol	1.8	
		Pyrene	0.061	
		Fluoranthene	0.046	
		2-Methylnaphthalene	0.041	
		Barium	1.3	
		Lead	2.3	
EB-02 (XF24011)		*Methylene Chloride*	0.96	
		Acetone	12	
		Caprolactam	3.6	
		Di-N-Butylphthalate	0.64	
EB-03 (XF25020)		*Methylene Chloride*	2.0	
		Acetone	12	
FB-01 (XF24009)	Field Blank	**Acetone**	11	
		Methylene Chloride	1.5	
FB-02 (XF25020)		**Acetone**	15	
		Methylene Chloride	0.8	
FB-03 (XF25020)		**Acetone**	9.9	
		Methylene Chloride	2.1	

Italic – Common Laboratory Contaminant **Bold – Detected in soil samples**
< - less than
µg/L – micrograms per liter

Table 3: Laboratory Control Sample Recovery and Resultant Data Qualification

Associated Samples	Analyte	%R	%R (Limits) RPD (Limit)	Data Qualification
VOCs				
LCS XQ46330-002/003	2-Butanone	94/120	56-143 **23** (20)	The associated 2-butanone results were qualified as estimated (J) to reflect the imprecision.
LCS XQ46673-002	Chloromethane	**142**	50-136	None. The potential bias was considered to be high, and the associated sample results were reported as non-detect.
	Dichlorodifluoromethane	**150**	29-149	
	Vinyl Chloride	**143**	56-135	

LCS – Laboratory Control Sample %R – Percent Recovery VOCs – Volatile Organic Compounds
RPD – Relative Percent Difference J - Estimated

Tarheel Army Missile Plant
Data Validation Summary

Data Package Number: XF24011
Sampling Event Dates: June 22nd, 2022

The table below summarizes the data package and sample identifications discussed in this data review.

Field Identification	Sample Type	Laboratory Identification	Matrix	Analyses		
				VOCs	SVOCs	Metals
RI-SB-20 (0-2)	SA	XF24011-001	Soil	X	--	--
RI-SB-20 (4-6)	SA	XF24011-002	Soil	X	--	--
RI-SB-21 (0-2)	SA	XF24011-003	Soil	X	--	--
RI-SB-21 (2-4)	SA	XF24011-004	Soil	X	--	--
RI-SB-22 (2-4)	SA	XF24011-005	Soil	X	--	--
RI-SB-22 (4-6)	SA	XF24011-006	Soil	X	--	--
RI-SB-22 (6-8)	SA	XF24011-007	Soil	X	--	--
RI-SB-23 (6-8)	SA	XF24011-008	Soil	X	--	--
RI-SB-23 (16-18)	SA	XF24011-009	Soil	X	--	--
EB-02	EB	XF24011-010	Water	X	X	X*
TB-05	TB	XF24011-011	Water	X	--	--

Sample Type: FD- Field Duplicate SA – Sample TB – Trip Blank
FB – Field Blank
Analyses: VOCs (Method 8260D)– Volatile Organic Compounds -- not analyzed
SVOCs (Method 8270E) – Semivolatile Organic Compounds
Metals (Method 6020B) – Arsenic, Barium, Cadmium, Chromium, Lead, Silver, Selenium
*Metals including Mercury by 7470A

The data review was conducted in accordance with the Tarheel Army Missile Plant Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) (February 2022), Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3, and method requirements.

General Overall Assessment:

_____ Data are usable without qualification.
__X__ Data are usable with qualification
_____ Some or all data are unusable for any purpose (detailed below).

Case Narrative Comments: Any laboratory case narrative comments concerning data qualification were addressed in the table below.

Trace level detects, reported between the method detection limit (DL) and the limit of quantitation (LOQ), have been qualified as estimated (J) by the laboratory. The other occurrences of data qualification are covered in the following table.

Review Parameter	Criteria Met?	Comment
Chain of Custody & Sample Receipt	Yes	The samples were received by Pace Analytical Service, LLC (Pace) West Columbia, South Carolina in good condition and were consistent with the accompanying chain of custody (COC). The cooler temperatures upon receipt was within the recommended ≤6 degrees Celsius (°C) temperature range.
Holding Times	Yes	The analysis was conducted within the holding time requirements for the methods.
Laboratory Blanks • Method Blank	Yes	No target analytes were detected within the method blanks.
Matrix Quality Control • Matrix Spike/ Matrix Spike Duplicate (MS/MSD) RI-SB-20 (4-6) EB-02 – Not evaluated non-site sample • Laboratory Duplicate None in this data package	No	**Matrix Spike/ Matrix Spike Duplicate** With the exceptions in Table 1, the MS/MSD recoveries and relative percent differences (RPDs) were within the laboratory acceptance limits. Results in the native sample greater than four times the concentration of the spike added during digestions/extractions are not considered to be a representative measure of accuracy. Further action with respect to spike recovery evaluation or qualification of data was not considered necessary. **Laboratory Duplicate** A laboratory duplicate was not reported in this data package.
Method Quality Control • Surrogates – Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs)	Yes	The surrogate recoveries were within the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3 limits.
Field Quality Control • Trip Blank TB-05 • Field Duplicate None reported in this package • Equipment Blank EB-02 • Field Blank None reported in this data package	No	**Trip Blank (VOCs Only)** No target analytes were detected in the trip blank sample. **Field Duplicate** A field duplicate sample was not reported in this data package. **Equipment Blank** With exceptions in Table 2, target analytes were detected in the equipment blank sample. **Field Blank (VOCs Only)** A field blank was not reported in this data package.
LOQs met?	Yes	No results were reported as non-detect at elevated limit of quantitation (LOQ).
Laboratory Control Sample (LCS)	No	One LCS per method per analytical batch was prepared and analyzed. With the exceptions listed in Table 3, the LCS recoveries were within DoD QSM Version 5.3 limits. The RPD between the LCS and LCSD for 2-Butanone for samples associated with 46330 exceeded the acceptance criterion of ±20% with a recovery of 23%. The associated 2-butanone results for TB-

Review Parameter	Criteria Met?	Comment
		05 and EB-02 were qualified as estimated (J) to reflect the imprecision.
Other issues identified in the Case Narrative: • Initial Calibration Verification (ICV) • Continuing Calibration Verification (CCV)	No	For VOCs for samples RI-SB-22 (2-4) and RI-SB-22 (4-6), cis-1,2-dichloroethene was reported as detected above the calibration range. The sample was re-analyzed from the medium level (methanol) vial, but was not reported due to the result being below the LOQ. Therefore, as only the low level was reported, the cis-1,2-dichloroethene result was qualified as estimated (J). The ICV associated with samples reported in batch 46672 exceeded control criteria for analytes: Chloromethane (135%), Vinyl chloride (135%), Bromomethane (124%), Chloroethane (123%), Trichlorofluoromethane (128%), 2-Butanone (125%), and Tetrachloroethene (121%). The CCV associated with analytical batch 46672 for Vinyl Chloride (22%) recovered above the upper control limit. The associated detected results were qualified as estimated (J+) to reflect the potential high bias. The CCV associated with sample RI-SB-23 (16-18) for analytes: Dichlorodifluoromethane (51%), Chloromethane (42%), Bromomethane (24%), and Chloroethane (23%), Vinyl Chloride, (43%) recovered above the upper control limit. The closing CCV for Chloromethane (53%) recovered above the upper control limit. The ICV associated exceeded control criteria for analytes: Dichlorodifluoromethane (128%). As the potential bias is considered to be high and the sample results associated with the CCVs were non-detect for the affected analytes; data qualification was not considered necessary. The ICV associated with sample EB-02 was below the DOD control limits of 80-120 for analytes: Nitrobenzene (79%). Therefore, the nitrobenzene result for EB-02 was qualified as estimated (J-) to reflect the potential low bias. The CCV associated with sample EB-02 for analytes: ocresol, acetophenone, and di-n-octylphthalate recovered above the upper control limit. As the potential bias is considered to be high and the sample results associated with the CCVs were non-detect for the affected analytes; data qualification was not considered necessary.

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CCV – Continuing Calibration Verification
COC – Chain of Custody
DL – Detection Limit
DoD – Department of defense
ICV – Initial Calibration Verification
J – Estimated with an indeterminate bias
J- - Estimated with a potential low bias
J+ - Estimated with a potential high bias
LCS – Laboratory Control Sample
LOQ – Limit of Quantitation
MS/MSD – Matrix Spike/ Matrix Spike Duplicate
NA – Not Applicable
QSM – Quality Systems Manual
RPDs – Relative Percent Differences
SVOCs – Semivolatile Organic Compounds
VOCs – Volatile Organic Compounds

Table 1: Matrix Spike Recovery Outliers and Resultant Data Qualification

Samples	Analyte	%R	%R (Limits)	RPD (Limit)	Qualification
VOCs					
RI-SB-20 (4-6)	Several target analytes MS/MSD recoveries and/or RPDs were outside the acceptance limits. Results for organics are not qualified based on MS/MSD results alone. The outliers could be a result of the heterogeneity of the sample matrix.				

% R – percent recovery **RPD – relative percent difference** **VOCs – Volatile Organic Compounds**

Table 2: Equipment and Field Blank Outliers and Resultant Data Qualification

Blank Identification/Data Package	Blank Type	Analyte	Concentration µg/L	Qualification
EB-01 (XC22018)	Equipment Blank	*Methylene Chloride*	1.7	Per the guidance validation, the associated results reported at concentrations <5x the blank contamination (<10x common laboratory contaminate) after accounting for the preparation value to convert from water to soil units and adjusting for percent solid could potentially be biased high.
		Acetone	12	
		Caprolactam	1.1	
		Phenol	1.8	
		Pyrene	0.061	
		Fluoranthene	0.046	
		2-Methylnaphthalene	0.041	
		Barium	1.3	
		Lead	2.3	
EB-02 (XF24011)		*Methylene Chloride*	0.96	
		Acetone	12	
		Caprolactam	3.6	
		Di-N-Butylphthalate	0.64	
EB-03 (XF25020)		*Methylene Chloride*	2.0	
		Acetone	12	
FB-01 (XF24009)	Field Blank	**Acetone**	11	
		Methylene Chloride	1.5	
FB-02 (XF25020)		**Acetone**	15	
		Methylene Chloride	0.8	
FB-03 (XF25020)		**Acetone**	9.9	
		Methylene Chloride	2.1	

Italic – Common Laboratory Contaminant **Bold – Detected in soil samples**
< - less than
µg/L – micrograms per liter

Table 3: Laboratory Control Sample Recovery and Resultant Data Qualification

Associated Samples	Analyte	%R	%R (Limits)	Data Qualification
VOCs				
LCS XQ46673-002	Chloromethane	**142**	50-136	None. The potential bias was considered to be high, and the associated sample results were reported as non-detect.
	Dichlorodifluoromethane	**150**	29-149	
	Vinyl Chloride	**143**	56-135	

LCS – Laboratory Control Sample
%R – Percent Recovery
SVOCs – Semivolatile Organic Compounds
VOCs – Volatile Organic Compounds

Tarheel Army Missile Plant
Data Validation Summary

Data Package Number: X241012
Sampling Event Dates: June 22nd and 23rd, 2022

The table below summarizes the data package and sample identifications discussed in this data review.

Field Identification	Sample Type	Laboratory Identification	Matrix	Analyses		
				VOCs	SVOCs	Metals
RI-SB-13 (2-6)	SA	XF24012-001	Soil	--	X	X
RI-SB-14 (0-4)	SA	XF24012-002	Soil	--	X	X
RI-SB-15 (2-4)	SA	XF24012-003	Soil	--	X	X
RI-SB-16 (0-4)	SA	XF24012-004	Soil	--	X	X
RI-SB-17 (0-6)	SA	XF24012-005	Soil	--	X	X
RI-SB-18 (0-6)	SA	XF24012-006	Soil	--	X	X
RI-SB-19 (0-4)	SA	XF24012-007	Soil	--	X	X
RI-SB-20 (0-6)	SA	XF24012-008	Soil	--	X	X
RI-SB-21 (0-4)	SA	XF24012-009	Soil	--	X	X
RI-SB-22 (0-8)	SA	XF24012-010	Soil	--	X	X
RI-SB-23 (4-8)	SA	XF24012-011	Soil	--	X	X
DUP-SB-02	FD	XF24012-012	Soil	--	X	X
DUP-SB-03	FD	XF24012-013	Soil	--	X	X

Sample Type: FD- Field Duplicate SA – Sample TB – Trip Blank
Analyses: VOCs (Method 8260D)– Volatile Organic Compounds -- not analyzed
SVOCs (Method 8270E) – Semivolatile Organic Compounds
Metals (Method 6020B) – Arsenic, Barium, Cadmium, Chromium, Lead, Silver, Selenium
*Metals including Mercury by 7470A

The data review was conducted in accordance with the Tarheel Army Missile Plant Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) (February 2022), Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3, and method requirements.

General Overall Assessment:

_____ Data are usable without qualification.
__X__ Data are usable with qualification
_____ Some or all data are unusable for any purpose (detailed below).

Case Narrative Comments: Any laboratory case narrative comments concerning data qualification were addressed in the table below.

Trace level detects, reported between the method detection limit (DL) and the limit of quantitation (LOQ), have been qualified as estimated (J) by the laboratory. The other occurrences of data qualification are covered in the following table.

Review Parameter	Criteria Met?	Comment
Chain of Custody & Sample Receipt	No	The samples were received by Pace Analytical Service, LLC (Pace) West Columbia, South Carolina in good condition and were consistent with the accompanying chain of custody (COC). The cooler temperatures upon receipt was within the recommended ≤6 degrees Celsius (°C) temperature range. For the soil samples, the Resource Conservation and Recovery Act (RCRA) eight metals analysis was requested on the COC. The laboratory inadvertently did not analyze and report mercury
Holding Times	Yes	The analysis was conducted within the holding time requirements for the methods.
Laboratory Blanks • Method Blank	Yes	No target analytes were detected within the method blanks.
Matrix Quality Control • Matrix Spike/ Matrix Spike Duplicate (MS/MSD) RI-SB-13 (2-6) - Metals • Laboratory Duplicate None in this data package	No	**Matrix Spike/ Matrix Spike Duplicate** With the exception in Table 1, the MS/MSD recoveries and relative percent differences (RPDs) were within the laboratory acceptance limits. Results in the native sample greater than four times the concentration of the spike added during digestions/extractions are not considered to be a representative measure of accuracy. Further action with respect to spike recovery evaluation or qualification of data was not considered necessary. **Laboratory Duplicate** A laboratory duplicate was not reported in this data package.
Method Quality Control • Surrogates – Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs)	No	With the exceptions below, the surrogate recoveries were within the Department of Defense (DoD) Quality Systems Manual (QSM) version 5.3 limits. For SVOCs for sample RI-SB-14 (0-4) the surrogates 2-fluorophenol and terphenyl-d14 exceeded the upper limited of the acceptance range. The detected results were qualified as estimated (J+) to reflect the potential high bias for both the acid and base/neutral fraction.
Field Quality Control • Trip Blank NA • Field Duplicate DUB-SB-02/RI-SB-16 (0-4) DUP-SB-03/RI-SB-19 (0-4) • Equipment Blank None in this data package • Field Blank None reported in this data package	Yes	**Trip Blank (VOCs Only)** A trip blank was not required as VOCs were not requested on the site samples. **Field Duplicate** The comparison between results of the field duplicate pairs met the applicable evaluation criteria listed below: • If the parent sample and duplicate values are >5x limit of quantitation (LOQ), then <30% RPD for water and vapor samples (<50% soil).

Review Parameter	Criteria Met?	Comment
		• If the parent sample or duplicate sample value is <5xLOQ, then absolute difference is <2xLOQ for water (<3.5xLOQ for soil and soil vapor). **Equipment Blank** An equipment was not reported is this data package. **Field Blank (VOCs Only)** A field blank was not reported in this data package.
LOQs met?	No	For 8270E, the following samples were diluted due to appearance or extract color: RI-SB-13 (2-6), RI-SB-18 (0-6), XF24012-009 RI-SB-21 (0-4) and DUP-SB-02. The LOQs have been elevated to reflect the dilution.
Laboratory Control Sample (LCS)	Yes	One LCS per method per analytical batch was prepared and analyzed. The LCS recoveries were within DoD QSM version 5.3 limits.
Other issues identified in the Case Narrtive: • Initial Calibration Verification (ICV) • Continuing Calibration Verification (CCV)	No	The CCV associated with samples DUP-SB-02 and DUP-SB-03 for analyte(s): o-cresol, acetophenone, and di-n-octylphthalate recovered above the upper control limit. As the associated results were reported as nondetect and the potential bias is considered to be high, data qualification was not considered necessary. The ICV associated with batch 46376 was below the acceptance limits for 80-120 for Nitrobenzene with a recovery of 79%. Therefore, the associated nitrobenzene results for DUB-SB-02 and SUB-SB-03 were qualified as estimated (J-).

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DL – Detection Limit
DoD – Department of defense
ICV – Initial Calibration Verification
J- - Estimated with a potential low bias
J+ - Estimated with a potential high bias
LCS – Laboratory Control Sample
LOQ – Limit of Quantitation
MS/MSD – Matrix Spike/ Matrix Spike Duplicate
NA – Not Applicable
QSM – Quality Systems Manual
RCRA - Resource Conservation and Recovery Act
RPDs – Relative Percent Differences
SVOCs – Semivolatile Organic Compounds
VOCs – Volatile Organic Compounds

Table 1: Matrix Spike Recovery Outliers and Resultant Data Qualification

Associated Samples	Analyte	%R	%R (Limits)	RPD	RPD (Limit)	Data Qualification
RI-SB-13 (2-6)	Chromium	**81**/110	83-119	**22**	20	The associated result was qualified as estimated (J-) to reflect the potential low bias and imprecision.
	Lead	**46/65**	84-118	**22**	20	
	Selenium	**78**/83	80-119	14	20	
	Barium	96/**154**	86-116	**31**	20	The associated detected result was qualified as estimated to reflect the potential high bias (J+) and imprecision.

%R – Percent Recovery
MS/MSD – Matrix Spike/Matrix Spike duplicate Sample
RPD – Relative Percent Difference
J- - Estimated with a potential low bias
J+ - Estimated with a potential high bias

Tarheel Army Missile Plant
Data Validation Summary

Data Package Number: XF25016
Sampling Event Dates: June 23rd and 24th, 2022

The table below summarizes the data package and sample identifications discussed in this data review.

Field Identification	Sample Type	Laboratory Identification	Matrix	Analyses			
				VOCs	SVOCs	Metals	TOC
RI-GW-02 (0-4)	SA	XF25016-001	Soil	--	--	X	--
RI-GW-02 (14-16)	SA	XF25016-002	Soil	--	--	--	X
RI-GW-03 (0-6)	SA	XF25016-003	Soil	--	--	X	--
RI-GW-04 (0-6)	SA	XF25016-004	Soil	--	--	X	--
RI-GW-04 (12-15)	SA	XF25016-005	Soil	--	--	--	X
RI-GW-05 (0-4)	SA	XF25016-006	Soil	--	--	X	--
RI-GW-05 (8-12)	SA	XF25016-007	Soil	--	--	--	X
RI-GW-06 (0-6)	SA	XF25016-008	Soil	--	--	X	--
RI-GW-06 (6-8)	SA	XF25016-009	Soil	--	--	--	X
RI-GW-07 (0-4)	SA	XF25016-010	Soil	--	--	X	--
RI-GW-07 (14-16)	SA	XF25016-011	Soil	--	--	--	X
RI-GW-24 (0-4)	SA	XF25016-012	Soil	--	X	X	--

Sample Type: FD- Field Duplicate SA – Sample TB – Trip Blank
Analyses: VOCs (Method 8260D)– Volatile Organic Compounds -- not analyzed
SVOCs (Method 8270E) – Semivolatile Organic Compounds
Metals (Method 6020B) – Arsenic, Barium, Cadmium, Chromium, Lead, Silver, Selenium
*Metals including Mercury by 7470A

The data review was conducted in accordance with the Tarheel Army Missile Plant Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) (February 2022), Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3, and method requirements.

General Overall Assessment:

_____ Data are usable without qualification.
__X__ Data are usable with qualification
_____ Some or all data are unusable for any purpose (detailed below).

Case Narrative Comments: Any laboratory case narrative comments concerning data qualification were addressed in the table below.

Trace level detects, reported between the method detection limit (DL) and the limit of quantitation (LOQ), have been qualified as estimated (J) by the laboratory. The other occurrences of data qualification are covered in the following table.

Review Parameter	Criteria Met?	Comment
Chain of Custody & Sample Receipt	No	The samples were received by Pace Analytical Service, LLC (Pace) West Columbia, South Carolina in good condition and were consistent with the accompanying chain of custody (COC). The cooler temperatures upon receipt was within the recommended ≤6 degrees Celsius (°C) temperature range. For the soil samples, the Resource Conservation and Recovery Act (RCRA) eight metals analysis was requested on the COC. The laboratory inadvertently did not analyze and report mercury.
Holding Times	Yes	The analysis was conducted within the holding time requirements for the methods.
Laboratory Blanks • Method Blank	Yes	No target analytes were detected within the method blanks.
Matrix Quality Control • Matrix Spike/ Matrix Spike Duplicate (MS/MSD) RI-GW-24 (0-4) – SVOCs, Metals • Laboratory Duplicate None in this data package	No	**Matrix Spike/ Matrix Spike Duplicate** With the exception in Table 1, the MS/MSD recoveries and relative percent differences (RPDs) were within the laboratory acceptance limits. Results in the native sample greater than four times the concentration of the spike added during digestions/extractions are not considered to be a representative measure of accuracy. Further action with respect to spike recovery evaluation or qualification of data was not considered necessary. **Laboratory Duplicate** A laboratory duplicate was not reported in this data package.
Method Quality Control • Surrogates (VOC, SVOCs)	Yes	The surrogate recoveries were within the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3 limits.
Field Quality Control • Trip Blank None reported in this data package • Field Duplicate None reported in this data package • Equipment Blank None in this data package • Field Blank None reported in this data package	NA	**Trip Blank (VOCs Only)** VOCs were not reported in this data package. **Field Duplicate** A field duplicate sample was not reported in this data package. **Equipment Blank** An equipment was not reported is this data package. **Field Blank (VOCs Only)** A field blank was not reported in this data package.
LOQs met?	No	For 8270E, sample RI-GW-24 (0-4) was diluted due to the nature of the sample matrix. The limits of quantitation (LOQs) have been elevated to reflect the dilution.

Review Parameter	Criteria Met?	Comment
Laboratory Control Sample (LCS)	Yes	One LCS per method per analytical batch was prepared and analyzed. The LCS recoveries were within DoD QSM Version 5.3 limits.
Other issues identified in the Case Narrtive: • Initial Calibration Verification (ICV) • Continuing Calibration Verification (CCV)		The initial calibration verification (ICV) associated with sample RI-GW-24 (0-4) exceeded control criteria of 80-120 for analytes: Caprolactam (122%), 4-Chloroaniline (123%), 2-Nitroaniline (121%). As the associated results were reported as nondetect and the potential bias is considered to be high, data qualification was not considered necessary.

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COC – Chain of Custody
DL – Detection Limit
DoD – Department of defense
ICV – Initial Calibration Verification
LCS – Laboratory Control Sample
LOQ – Limit of Quantitation
MS/MSD – Matrix Spike/ Matrix Spike Duplicate
NA – Not Applicable
QSM – Quality Systems Manual
RCRA - Resource Conservation and Recovery Act
RL – Reporting Limit
RPDs – Relative Percent Differences
SVOCs – Semivolatile Organic Compounds
VOCs – Volatile Organic Compounds

Table 1: Matrix Spike Sample Recovery and Resultant Data Qualification

Associated Samples	Analyte	%R	%R (Limits)	RPD	RPD (Limit)	Data Qualification
SVOCs						
RI-GW-24 (0-4)	Several MSMSD recoveries and/or RPDs were outside the acceptance limits. Several recoveries were below 10%. Results for organics are not qualified based on MS/MSD results alone. The outliers could be a result of the heterogeneity of the sample matrix or extraction efficiencies. Therefore, the results could be estimated based on the accuracy and imprecision.					
Metals						
RI-GW-24 (0-4)	Barium	**22/-24**	86-116	15	20	The associated barium result was qualified as estimated (J-) to reflect the potential low bias.

MS/MSD – Matrix Spike/Matrix Spike Duplicate Sample
SVOCs – Semivolatile Organic Compounds
%R – Percent Recovery
J- - Estimated with a potential low bias

Tarheel Army Missile Plant
Data Validation Summary

Data Package Number: XF25020
Sampling Event Dates: June 22nd, 2022

The table below summarizes the data package and sample identifications discussed in this data review.

Field Identification[1]	Sample Type	Laboratory Identification	Matrix	Analyses			
				VOCs	SVOCs	Metals	TOC
RI-GW-01	SA	XF25020-001	Water	X	--	--	--
RI-GW-02	SA	XF25020-002	Water	X	--	--	--
RI-GW-04	SA	XF25020-003	Water	X	--	--	--
R-GW-05	SA	XF25020-004	Water	X	--	--	--
RI-GW-06	SA	XF25020-005	Water	X	--	--	--
RI-GW-07	SA	XF25020-006	Water	X	--	--	--
RI-GW-08	SA	XF25020-007	Water	X	--	--	--
DUP-GW-01	FD	XF25020-008	Water	X	--	--	--
TB-06	TB	XF25020-009	Water	X	--	--	--
FB-02	FB	XF25020-010	Water	X	--	--	--
FB-03	FB	XF25020-011	Water	X	--	--	--
EB-03	EB	XF25020-012	Water	X	--	--	--
RB-SB-24 (0-4)	SA	XF25020-013	Soil	X	--	--	--
RB-SB-24 (8-10)	SA	XF25020-014	Soil	X	--	--	--
RI-GW-01a (0-4)	SA	XF25020-015	Soil	--	--	X	--
RI-GW-01D (0-4)	SA	XF25020-016	Soil	--	--	X	--
RI-GW-01D (11-13)	SA	XF25020-017	Soil	--	--	X	--

[1]Sample field IDs were changed to reflect the proper nomenclature "R1" to "RI".

Sample Type: FD- Field Duplicate; SA – Sample; TB – Trip Blank; FB – Field Blank; EB – Equipment Blank

Analyses: VOCs (Method 8260D)– Volatile Organic Compounds; -- not analyzed
SVOCs (Method 8270E) – Semivolatile Organic Compounds
Metals (Method 6020B) – Arsenic, Barium, Cadmium, Chromium, Lead, Silver, Selenium
*Metals including Mercury by 7470A

The data review was conducted in accordance with the Tarheel Army Missile Plant Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) (February 2022), Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3, and method requirements.

General Overall Assessment:

_____ Data are usable without qualification.
__X__ Data are usable with qualification
_____ Some or all data are unusable for any purpose (detailed below).

Case Narrative Comments: Any laboratory case narrative comments concerning data qualification were addressed in the table below.

Trace level detects, reported between the method detection limit (DL) and the limit of quantitation (LOQ), have been qualified as estimated (J) by the laboratory. The other occurrences of data qualification are covered in the following table.

Review Parameter	Criteria Met?	Comment
Chain of Custody & Sample Receipt	Yes	The samples were received by Pace Analytical Service, LLC (Pace) West Columbia, South Carolina in good condition and were consistent with the accompanying chain of custody (COC). The cooler temperatures upon receipt was within the recommended ≤6 degrees Celsius (°C) temperature range.
Holding Times	No	The analysis was conducted within the holding time requirements for the methods. For VOCs, reanalysis of the following samples was performed outside of the analytical holding time due to the closing CCV being analyzed out of tune time during unital analysis: RI-GW-01, RI-GW-02, RI-GW-04, DUP-GW-01. Re-analysis was performed at 1x, with concurring results. The laboratory report both sets of data. The reanalysis results were selected for reported and qualified as estimated (J). Sample RI-GW-05 required a dilution for cis-1,2-dichloroethene, which was performed outside of the analytical holding time. The Run 3 for this dilution analysis was analyzed from a previously run vial with head space. The resus was qualified as estimated (J-) to reflect the potential low bias. The closing continuing calibration verification (CCV) for batch 47711 was out of tune time by 1 hour and 33 minutes during initial analysis due to instrument error. The samples affected: FB-03 (Run 3) and EB-03 (Run 3). The laboratory attempted was to rerun within holding time, but due to foam error the closing CCV did not run. Reanalysis of samples FB-03 and EB-03 were performed for a third time outside of the analytical holding time, with concurring results. The data has been reported from the initial analysis since results were confirmed. As the results were confirmed, data qualification was not considered necessary.
Laboratory Blanks • Method Blank	Yes	No target analytes were detected within the method blanks.
Matrix Quality Control • Matrix Spike/ Matrix Spike Duplicate (MS/MSD) RI-GW-02 – VOCs RI-GW-01D (11-13) - Metals • Laboratory Duplicate	NA	**Matrix Spike/ Matrix Spike Duplicate** With the exception in Table 1, the MS/MSD recoveries and relative percent differences (RPDs) were within the laboratory acceptance limits.

Review Parameter	Criteria Met?	Comment
None in this data package		Results in the native sample greater than four times the concentration of the spike added during digestions/extractions are not considered to be a representative measure of accuracy. Further action with respect to spike recovery evaluation or qualification of data was not considered necessary. **Laboratory Duplicate** A laboratory duplicate was not reported in this data package.
Method Quality Control • Surrogates - Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs)	Yes	The surrogate recoveries were within the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3 limits.
Field Quality Control • Trip Blank TB-06 • Field Duplicate DUP-GW-01/RI-GW-02 • Equipment Blank EB-03 • Field Blank FB-02 FB-03	No	**Trip Blank (VOCs Only)** No target analytes were not detected in the Trip blank. **Field Duplicate** The comparison between results of the field duplicate pairs met the applicable evaluation criteria listed below: • If the parent sample and duplicate values are >5xLOQ, then <30% RPD for water and vapor samples (<50% soil). • If the parent sample or duplicate sample value is <5xLOQ, then absolute difference is <2xLOQ for water (<3.5xLOQ for soil and soil vapor). **Equipment Blank** With exceptions listed in Table 2, no target analytes were not detected in the equipment blank. **Field Blank** With exceptions listed in Table 2, no target analytes were not detected in the field blank.
LOQs met?	Yes	No results were reported as non-detect at elevated limit of quantitation (LOQ).
Laboratory Control Sample (LCS)	No	One LCS per method per analytical batch was prepared and analyzed. With the exceptions listed in Table 3, the LCS recoveries were within DoD QSM Version 5.3 limits.
Other issues identified in the Case Narrative: • Initial Calibration Verification (ICV) • Continuing Calibration Verification (CCV)	No	For VOCs for batch 46673 and samples RI-SB-24 (0-4) and RI-SB-24 (8-10): • The CCV associated with for analyte(s): Dichlorodifluoromethane (51%), Chloromethane (42%), Bromomethane (24%), Vinyl Chloride (43%), and Chloroethane (23%) recovered above the upper control limit. • The initial ICV exceeded control criteria for Dichlorodifluoromethane (128%)

Review Parameter	Criteria Met?	Comment
		• The closing continuing calibration verification recovered above the upper control limit for Chloromethane (53%). The CCV associated with batch 47149 and samples RI-GW-01, RI-GW-02, RI-GW-04, DUP-GW-01 for analytes: Chloromethane, Vinyl Chloride, Bromomethane, Acetone, Methyl Acetate, Cyclohexane recovered above the upper control limit. The CCV associated with batch 47368 and samples RI-GW-01, RI-GW-02, TB-06, FB-02 for analyte(s): 1,2-dibromo-3-chloropropane (DBCP) recovered above the upper control limit. The CCV associated with batch 47363 and samples (Run 2) RI-GW-04, RI-GW-05, RI-GW-06, RI-GW-07, RI-GW-08, and DUP-GW-01 for analytes: 2-Butanone (26%) and 1,2,4-Trichlorobenzene (23%) recovered above the upper control limit. The ICV associated with batch 47363 and samples (Run 2) RI-GW-04, RI-GW-05, RI-GW-06, RI-GW-07, RI-GW-08, and DUP-GW-01 exceeded control criteria for analytes: Chloroethane (124%), Acetone (130%) and 2-butanone (130%). As the associated results were reported as nondetect and the potential bias is considered to be high, data qualification was not considered necessary

> - Greater Than
< - Less Than
≤ - Less Than or Equal To
± - Plus or Minus
°C – Degrees Celsius
% - Percent
CCV – Continuing Calibration Verification
COC – Chain of Custody
DL – Detection Limit
DoD – Department of defense
ICV – Initial Calibration Verification
J- - Estimated with a potential low bias
LCS – Laboratory Control Sample
LOQ – Limit of Quantitation
MS/MSD – Matrix Spike/ Matrix Spike Duplicate
NA – Not Applicable
QSM – Quality Systems Manual
RL – Reporting Limit
RPDs – Relative Percent Differences
SVOCs – Semivolatile Organic Compounds
VOCs – Volatile Organic Compounds

Table 1: Matrix Spike Recovery and/or RPD Outliers and Resultant Data Qualification

Samples	Analyte	MS %R	MSD %R	%R (Limits)	RPD (%)	RPD Limit (%)	Data Qualification
VOCs							
RI-GW-02	Chloromethane (Methyl chloride)	**143**	138	50-139	3.7	20	Several MS/MSD recoveries and RPDs were outside the acceptance limits. Results for organics are not qualified based on MS/MSD results alone. The outliers could be a result of the heterogeneity of the sample matrix or extraction efficiencies. Therefore, the results could be estimated based on the accuracy and imprecision.
	Cyclohexane	**133**	130	71-130	2.0	20	
	Vinyl Chloride	**153**	**149**	58-137	2.2	20	
Metals							
RI-GW-01D (11-13)	Barium	103	**152**	86-116	8.5	20	The associated results were qualified as estimated (J+) to reflect the potential high bias.

J – Estimated with an indeterminate bias
J - - Estimated with a potential low bias
MS – Matrix Spike
RPD – Relative Percent Difference
J+ - Estimated with a potential high bias
%R – Percent Recovery
Matrix Spike Duplicate – Matrix Spike Duplicate

Table 2: Laboratory Control Sample Recovery and Resultant Data Qualification

Associated Samples	Analyte	%R	%R (Limits)	Data Qualification
VOCs				
LCS XQ46673-002	Chloromethane	**142**	50-136	None. The potential bias was considered to be high, and the associated sample results were reported as non-detect.
	Dichlorodifluoromethane	**150**	29-149	
	Vinyl Chloride	**143**	56-135	

LCS – Laboratory Control Sample
%R – Percent Recovery
VOCs – Volatile Organic Compounds

Table 3: Equipment and Field Blank Outliers and Resultant Data Qualification

Blank Identification/Data Package	Blank Type	Analyte	Concentration µg/L	Qualification
EB-01 (XC22018)	Equipment Blank	*Methylene Chloride*	1.7	Per the guidance validation, the associated results reported at concentrations <5x the blank contamination (<10x common laboratory contaminate) after accounting for the preparation value to convert from water to soil units and adjusting for percent solid could potentially be biased high.
		Acetone	12	
		Caprolactam	1.1	
		Phenol	1.8	
		Pyrene	0.061	
		Fluoranthene	0.046	
		2-Methylnaphthalene	0.041	
		Barium	1.3	
		Lead	2.3	
EB-02 (XF24011)		*Methylene Chloride*	0.96	
		Acetone	12	
		Caprolactam	3.6	
		Di-N-Butylphthalate	0.64	
EB-03 (XF25020)		*Methylene Chloride*	2.0	
		Acetone	12	
FB-01 (XF24009)	Field Blank	**Acetone**	11	
		Methylene Chloride	1.5	
FB-02 (XF25020)		**Acetone**	15	
		Methylene Chloride	0.8	
FB-03 (XF25020)		**Acetone**	9.9	
		Methylene Chloride	2.1	

Italic – Common Laboratory Contaminant **Bold – Detected in soil samples**
< - less than
µg/L – micrograms per liter

Tarheel Army Missile Plant
Data Validation Summary

Data Package Number: XF27007
Sampling Event Dates: June 22nd, 2022

The table below summarizes the data package and sample identifications discussed in this data review.

Field Identification[1]	Sample Type	Laboratory Identification	Matrix	Analyses			
				VOCs	SVOCs	Metals	TOC
RI-SB-17(0-2)	SA	XF27007-001	Soil	X	--	--	--
RI-SB-17 (2.4)	SA	XF27007-002	Soil	X	--	--	--
RI-SB-17 (4-6)	SA	XF27007-003	Soil	X	--	--	--
RI-SB-17 (6-8)	SA	XF27007-004	Soil	X	--	--	--
RI-SB-17 (8-10)	SA	XF27007-05	Soil	X	--	--	--
RI-SB-18 (2-4)	SA	XF27007-006	Soil	X	--	--	--
RI-SB-18 (6-8)	SA	XF27007-007	Soil	X	--	--	--
RI-SB-19 (2-4)	SA	XF27007-008	Soil	X	--	--	--
RI-SB-19 (6-8)	SA	XF27007-009	Soil	X	--	--	--
TB-04	TB	XF27007-010	Water	X	--	--	--
DUP-SB-03	FD	XF27007-011	Soil	X	--	--	--

1Sample field IDs were changed to reflect the proper nomenclature "R1" to "RI".
Sample Type: FD- Field Duplicate SA – Sample TB – Trip Blank
FB – Field Blank EB – Equipment Blank
Analyses: VOCs (Method 8260D)– Volatile Organic Compounds -- not analyzed
SVOCs (Method 8270E) – Semivolatile Organic Compounds
Metals (Method 6020B) – Arsenic, Barium, Cadmium, Chromium, Lead, Silver, Selenium
*Metals including Mercury by 7470A

The data review was conducted in accordance with the Tarheel Army Missile Plant Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) (February 2022), Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3, and method requirements.

General Overall Assessment:

_____ Data are usable without qualification.
__X__ Data are usable with qualification
_____ Some or all data are unusable for any purpose (detailed below).

Case Narrative Comments: Any laboratory case narrative comments concerning data qualification were addressed in the table below.

Trace level detects, reported between the method detection limit (DL) and the limit of quantitation (LOQ), have been qualified as estimated (J) by the laboratory. The other occurrences of data qualification are covered in the following table.

Review Parameter	Criteria Met?	Comment
Chain of Custody & Sample Receipt	No	The samples were received by Pace Analytical Service, LLC (Pace) West Columbia, South Carolina in good condition and were consistent with the accompanying chain of custody (COC). The cooler temperatures upon receipt was within the recommended ≤6 degrees Celsius (°C) temperature range. It was indicated in the case narrative, Sample TB-04 had an air bubble > 6mm in the sample vial. However, it was documented on the sample receipt form that samples were received in good condition and no vials were received with bubbles present. Therefore, further action was not necessary.
Holding Times	Yes	The analysis was conducted within the holding time requirements for the methods.
Laboratory Blanks • Method Blank	Yes	No target analytes were detected within the method blanks.
Matrix Quality Control • Matrix Spike/ Matrix Spike Duplicate (MS/MSD) None in this data package • Laboratory Duplicate None in this data package	NA	**Matrix Spike/ Matrix Spike Duplicate** A MS/MSD was not reported in this data package. **Laboratory Duplicate** A laboratory duplicate was not reported in this data package.
Method Quality Control • Surrogates (VOC, SVOCs)	No	With the exceptions below, the surrogate recoveries were within the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3 limits. One or more of the surrogate recoveries for the following samples were above the acceptance limits: R1-SB-17 (4-6)) R1-SB-17 (6-8), and R1-SB-17 (8-10). These samples were analyzed at dilution ranging from 20x to 400x. As the potential bias is considered to be high, the detected results were qualified as estimated (J+).
Field Quality Control • Trip Blank TB-04 • Field Duplicate DUP-SB-03/RI-SB-19 (2-4) • Equipment Blank None in this data package • Field Blank None reported in this data package	No	**Trip Blank (VOCs Only)** No target analytes were reported in the trip blank sample. **Field Duplicate** With the exception of trichloroethene, the comparison between results of the field duplicate pairs met the applicable evaluation criteria listed below: • If the parent sample and duplicate values are >5x limit of quantitation (LOQ), then <30% RPD for water and vapor samples (<50% soil). • If the parent sample or duplicate sample value is <5xLOQ, then absolute difference is <2xLOQ for water (<3.5xLOQ for soil and soil vapor).

Review Parameter	Criteria Met?	Comment
		The RPD between the trichloroethene results for DUP-SB-03 (47, 000 µg/kg) and RI-SB-19 (2-4) (1,800 µg/kg) exceeded the applicable criterion of 50% with an RPD 185%. The associated results were qualified as estimated (J) to reflect the inhomogeneity of the sample. **Equipment Blank** An equipment was not reported is this data package. **Field Blank (VOCs Only)** A field blank was not reported in this data package
LOQs met?	No	Samples R1-SB-17 (4-6)) R1-SB-17 (6-8), R1-SB-17 (8-10), RI_SB-19 (6-8) were only analyzed at dilutions due to target analyte concentrations. The LOQs were adjusted accordingly. Therefore, results were reported as nondetect at elevated LOQs.
Laboratory Control Sample (LCS)	No	One LCS per method per analytical batch was prepared and analyzed. With the exceptions listed in Table 1, the LCS recoveries were within DoD QSM Version 5.3 limits. For batch 46981, the relative percent difference (RPD) between the LCS/LSCD for 2-butanone exceeded the criterion of 20% with a RPD of 27%. The associated results were qualified estimated (J) to reflect the imprecision.
Other issues identified in the Case Narrtive: • Initial Calibration Verification (ICV) • Continuing Calibration Verification (CCV)		Trichloroethene was reported as an estimated value in sample R1-SB-18 (6-8) as the result was above the upper calibration level. The sample was re-analyzed from the medium level (methanol) vial, but was not reported due to the result being below the LOQ therefore only the low level was reported. The closing CCV associated with sample TB-04 for Vinyl Chloride recovered above the upper control limit. As the potential bias is considered to be high and the associated sample result was reported as nondetect, data qualification was not considered necessary. The CCV associated with sample TB-04 for analytes: Dichlorodifluoromethane, Chloromethane, Vinyl Chloride, Bromomethane and 2-Butanone recovered above the upper control limit. As the potential bias is considered to be high and the associated sample results were reported as nondetect, data qualification was not considered necessary.

> - Greater Than
< - Less Than
≤ - Less Than or Equal To
± - Plus or Minus
°C – Degrees Celsius
% - Percent
CCV – Continuing Calibration Verification
COC – Chain of Custody
DL – Detection Limit
DoD – Department of defense
ICV – Initial Calibration Verification
J – Estimated with an indeterminate bias
J+ - Estimated with a potential high bias
LCS – Laboratory Control Sample
LOQ – Limit of Quantitation
MS/MSD – Matrix Spike/ Matrix Spike Duplicate
NA – Not Applicable
QSM – Quality Systems Manual
RL – Reporting Limit
RPDs – Relative Percent Differences
SVOCs – Semivolatile Organic Compounds
VOCs – Volatile Organic Compounds

Table 1: Laboratory Control Sample Recovery and Resultant Data Qualification

Associated Samples	Analyte	%R	%R (Limits)	Data Qualification
VOCs				
LCS XQ46461-002	Chloromethane	**158**	50-139	None. The potential bias was considered to be high, and the associated sample results were reported as non-detect.
	Dichlorodifluoromethane	**163**	32-152	
	Vinyl Chloride	**156**	58-137	
LCS XQ46980-002	Dichlorodifluoromethane	**165**	29-149	
	Chloromethane	**140**	50-136	
	Vinyl Chloride	**154**	56-135	
	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	**137**	66-136	
	Methylcyclohexane	**135**	66-133	
LCS XQ47133-002	Dichlorodifluoromethane	**165**	29-149	
	Chloromethane	**140**	50-136	
	Vinyl Chloride	**154**	56-135	
	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	**137**	66-136	
	Methylcyclohexane	**135**	66-133	

LCS – Laboratory Control Sample %R – Percent Recovery VOCs – Volatile Organic Compounds

Tarheel Army Missile Plant
Data Validation Summary

Data Package Number: 0006480
Sampling Event Dates: July 19th to July 28th, 2022

The table below summarizes the data package and sample identifications discussed in this data review.

Field Identification	Sample Type	Laboratory Identification	Matrix	Analyses
				VOCs
TRIP 1	TB	0006480-01	Air	X
PSG-01	SA	0006480-02	Soil-Gas	X
PSG-02	SA	0006480-03	Soil-Gas	X
PSG-03	SA	0006480-04	Soil-Gas	X
PSG-04	SA	0006480-05	Soil-Gas	X
PSG-05	SA	0006480-06	Soil-Gas	X

Sample Type: SA – Sample
Analyses: VOCs (Method 8260C)– Volatile Organic Compounds -- not analyzed

The data review was conducted in accordance with the Tarheel Army Missile Plant Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) (February 2022), Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3, and method requirements.

General Overall Assessment:

_____ Data are usable without qualification.
__X__ Data are usable with qualification
_____ Some or all data are unusable for any purpose (detailed below).

Case Narrative Comments: Any laboratory case narrative comments concerning data qualification were addressed in the table below.

Review Parameter	Criteria Met?	Comment
Chain of Custody & Sample Receipt	No	The samples were received by Beacon Environmental in good condition and were consistent with the accompanying chain of custody (COC).
Holding Times	Yes	The analysis was conducted within the holding time requirements for the methods.

Review Parameter	Criteria Met?	Comment
Laboratory Blanks • Method Blank	Yes	No target analytes were detected within the method blanks.
Matrix Quality Control • Matrix Spike/ Matrix Spike Duplicate (MS/MSD) None in this data package • Laboratory Duplicate PSG-01-DUP	No	**Matrix Spike/ Matrix Spike Duplicate** A MS/MSD was not reported in this data package. **Laboratory Duplicate** With one exception, the following laboratory duplicates criterion was met: • If the parent sample and duplicate values are >5xLOQ, then <20% RPD for water and vapor samples (<35% soil and soil vapor). • If the parent sample or duplicate sample value is <5xLOQ, then absolute difference is <1xLOQ for water (<2xLOQ for soil and soil vapor). The RPD between the parent and laboratory duplicate result for toluene exceeded 35% with a RPD 53%. The associated toluene result was qualified as estimated (J) with an indeterminate bias.
Method Quality Control • Surrogates - Volatile Organic Compounds (VOCs)	Yes	No issues were identified in the case narrative.
Field Quality Control • Trip Blank Trip 1 • Field Duplicate None reported in this data package	Yes	**Trip Blank (VOCs Only)** No target analytes were detected in the trip blank sample. **Field Duplicate** A field duplicate was not reported in this data package.
LOQs met?	Yes	The reporting limits represent a baseline above which results meet laboratory-determined limits of precision and accuracy. The reported results were within the calibration range. The reported data includes LOQ limits.
Laboratory Control Sample (LCS)	Yes	No issues were identified in the case narrative.
Other issues identified in the Case Narrative: • Calculations	Yes	The laboratory reported the results provided in nanograms (ng) and micrograms per cubic meter (µg/m³). The results were verified.

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≤ - Less Than or Equal To
± - Plus or Minus
°C – Degrees Celsius
% - Percent
µg/m³ - microgram per meter cubed
COC – Chain of Custody
DL – Detection Limit
DoD – Department of defense
LCS – Laboratory Control Sample
LOQ – Limit of Quantitation
J - Estimated
MS/MSD – Matrix Spike/ Matrix Spike Duplicate
NA – Not Applicable
QSM – Quality Systems Manual
RPDs – Relative Percent Differences
VOCs – Volatile Organic Compounds

Tarheel Army Missile Plant
Water Data Validation Summary

The data review was conducted in accordance with the Tarheel Army Missile Plant Uniform Federal Policy Quality Assurance Project Plan (QAPP) (February 2022), Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3, guidance from DoD Data Validation Guidelines, and method requirements. Results are considered usable as qualified. This section presents the overall assessment of the data with respect to the PARCC parameters (precision, accuracy, representativeness, completeness, comparability) and sensitivity. The individual review narratives are attached.

TABLE 1:
SUMMARY OF SAMPLES

Data Package	Sample ID	Laboratory ID	QC Designation	Analyses
XG26017	Tunnel N-01	XG26017-001		VOCs
	Tunnel S-02	XG26017-002		VOCs
	TAMP-MW-3	XG26017-003		VOCs, SVOCs, Metals
XH10028	MW-5	XH10028-001		VOCs, SVOCs, Metals
	MW-111	XH10028-002		VOCs, SVOCs, Metals
	MW-2	XH10028-003		VOCs, SVOCs, Metals
	MW-102	XH10028-004	MS/MSD - TOC	VOCs, SVOCs, Metals, TOCs, RSK-175
	TB-03	XH10028-005		VOCs
XH10027	SW-01A	XH10027-001		VOCs
	SW-01B	XH10027-002		
	SW-01	XH10027-003		
	SW-02	XH10027-004		
	SW-02A	XH10027-005		
	SW-03	XH10027-006		
	DUP-SW-02	XH10027-007	Field Duplicate to SW-02A	
	MW-130	XH10027-008	MS/MSD – SVOCs, Mercury	VOCs, SVOCs, Metals
	MW-131	XH10027-009		
	TB-01	XH10027-010	Trip Blank	VOCs
	MW-137	XH10027-011		VOCs, SVOCs, Metals
	MW-140	XH10027-012		
	TAMP-MW-8	XH10027-013		
XH10043	MW-110	XH10043-001	MS/MSD – VOCs	VOCs, SVOCs, Metals, TOCs, RSK-175
	MW-118	XH10043-002	MS/MSD - VOCs	VOCs, SVOCs, Metals
	MW-121	XH10043-003		VOCs, SVOCs, Metals, TOCs, RSK-175
	MW-115	XH10043-004		
	TB-02	XH10043-005	Trip Blank	VOCs

Data Package	Sample ID	Laboratory ID	QC Designation	Analyses
XH11018	MW-112	XH11018-001		VOCs, SVOCs, Metals, TOCs, RSK-175
	MW-103	XH11018-002		
	MW-108	XH11018-003	MS/MSD - VOCs	
	MW-11	XH11018-004		
	TB-09	XH1018-005	Trip Blank	VOCs
XH11019	MW-141	XH11019-001		VOCs, SVOCs, Metals, TOCs, RSK-175
	MW-139	XH11019-002		
	MW-120	XH11019-003		
	MW-136	XH11019-004		
	FB-02	XH11019-005	Field Blank	VOCs
	TB-07	XH11019-006	Trip Blank	VOCs
	DUP-GW-01	XH11019-007	Field Duplicate to MW-120	VOCs, SVOCs, Metals, TOCs, RSK-175
XH11020	MW-107	XH11020-001	MS/MSD – VOCs	VOCs, SVOCs, Metals, TOCs, RSK-175
	DUP-GW-02	XH11020-002	Field Duplicate to MW-107 MS/MSD - VOCs	VOCs, SVOCs, Metals
	MW-119	XH11020-003		
	MW-109	XH11020-004	MS/MSD - SVOCs	SVOCs
	TB-06	XH11020-005	Trip Blank	VOCs
	MW-138	XH11020-006		
	MW-127	XH11020-007		
	MW-133	XH11020-008		
	MW-119	XH11020-009	MS/MSD – SVOCs, Mercury	
	MW-122	XH11020-010		
	MW-124	XH11020-011		
	FB-01	XH11020-012	Field Blank	
	TB-04	XH11020-013	Trip Blank	
	MW-101	XH11020-014		VOCs, SVOCs, Metals
	MW-117	XH11020-015		
	MW-109	XH11020-016	MS/MSD – Methane, Mercury, VOCs, TOC	VOCs, Metals, TOC, RSK-175
	TB-05	XH11020-017	Trip Blank	VOCs
	EB-GW-02	XH11020-018	Equipment Blank	VOCs, SVOCs, Metals
	EB-GW-01	XH11020-019	Equipment Blank	
XH12007	MW-132	XH12007-001		VOCs, SVOCs, Metals, TOCs, RSK-175
	MW-106	XH12007-002		VOCs, SVOCs, Metals
	MW-116	XH12007-003		
	TB-08	XH12007-004	Trip Blank	VOCs

ID – Identification QC – Quality Control VOCs – Volatile Organic Compounds
MS/MSD – Matrix Spike/Matrix Spike Duplicate
SVOCs (Method 8270E) – Semivolatile Organic Compounds
Metals (Method 6020B) – Arsenic, Barium, Cadmium, Chromium, Lead, Silver, Selenium, Mercury (7470A)

1.1 PRECISION

Precision is a measure of agreement among replicate (or between duplicate) or co-located sample measurements of the same analyte. The closer the numerical values of the measurements are to each other, the more precise the measurement. Precision for a single analyte was expressed as a relative percent difference (RPD) or absolute difference between matrix spike (MS) and matrix spike duplicate (MSD) results, laboratory duplicate samples, and field duplicate results.

MS/MSDs were performed on site-specific samples for this sampling event as presented in Table 1. The following field duplicate samples were collected in association with this event.

Data Package	Parent Identification	Analyses	Field Duplicate Identification
XH10027	SW-02A	VOCs	DUP-SW-02
XH11019	MW-120	VOCs, SVOCs, Metals, TOCs, RSK-175	DUP-GW-01
XH11020	MW-107	VOCs, SVOCs, Metals	DUP-GW-02

Results for organics were not qualified based on MS/MSD results alone. The outliers could be a result of the heterogeneity of the sample matrix or extraction efficiencies. The metals results associated with MS/MSD RPDs outside acceptance criteria were qualified. With one exception, the comparison between results of the field duplicate pairs met the applicable evaluation criteria.

No results were rejected based on the precision between the field duplicate or the MS/MSDs results indicating acceptable precision was demonstrated. Results qualified as estimated based on field duplicate and MS/MSD results are considered usable for meeting project objectives as data usability was not adversely affected. Results are mostly likely outside the acceptance limits due to the heterogeneity of the sample matrix.

1.2 ACCURACY

Accuracy is a measure of bias in a measurement system. The closer the value of the measurement agrees with the true value, the more accurate the measurement. This was expressed as the percent recoveries of surrogate recoveries and recoveries of target analytes in the laboratory control samples (LCS) and site-specific MS/MSD samples. MS/MSD were performed on site-specific samples for this sampling event as listed in Table 1.

Ninety-nine percent (%) of the surrogate recoveries and 99% of the LCS recoveries were within the acceptance limits. Several MSMSD recoveries and/or RPDs were outside the acceptance limits for VOCs and SVOCs and several recoveries were below 10%. However, results for organics were not qualified based on MS/MSD results alone. The outliers could be a result of the heterogeneity of the sample matrix or extraction efficiencies. The metals results associated with MS/MSD recoveries outside acceptance limits were qualified.

No results were qualified as unusable based on accuracy. Result qualified as estimated based on the LCS recoveries, MS/MSD recoveries, or surrogate recoveries are considered usable as qualified; indicating acceptable accuracy was demonstrated with respect to the analytical method and matrix.

1.3 REPRESENTATIVENESS

Representativeness is the degree to which data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or an environmental condition. The design of, and rationale for, the sampling program (in terms of the purpose for sampling, selecting the sampling locations, the number of samples to be collected, the ambient conditions for sample collection, the frequencies and timing for sampling, and the sampling techniques) assures that the environmental condition has been sufficiently represented. Representativeness was maintained during the sampling effort by completing the sampling using similar sampling procedures and in accordance with the approved QAPP and work plan.

The agreement between the field duplicate results was also used to assess representativeness. The close agreement between the duplicate results is considered to indicate that the samples collected are adequately representative of the medium sampled.

1.4 COMPARABILITY

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared to another. For this project, comparability was achieved by collecting samples following the approved QAPP; analyzing the samples using standard analytical methodologies with reporting limits that met screening level criteria to the extent attainable, using common traceable calibration and reference materials; and reporting the analytical results in appropriate and consistent units.

1.5 COMPLETENESS

Completeness is a measure of the number of valid measurements obtained in relation to the total number of measurements planned. Completeness is expressed as the percentage of valid or usable measurements to planned measurements. The data are considered usable as qualified. The completeness for this sampling event was 100% satisfying the QAPP requirement of 90%.

1.6 SENSITIVITY

The laboratory reported detectable results between the detection limit (DL) and the limit of quantitation (LOQ). To reflect the higher degree of uncertainty associated with values reported between the DL and LOQ, these results were qualified as (“J”). The laboratory reported the results nondetect at the limit of detection (LOD) on the data sheets. However, the results are reported as nondetect to the LOQ in the electronic data tables. Several samples were analyzed at dilutions due to target analyte concentrations or matrix interferences. The LOQs have been elevated to reflect the dilution; therefore, results reported as nondetect at elevated LOQs will need to be elevated during the human health and ecological risk evaluation.

Tarheel Army Missile Plant
Data Validation Summary

Data Package Number: XG26017
Sampling Event Dates: July 21st 2022

The table below summarizes the data package and sample identifications discussed in this data review.

Field Identification	Sample Type	Laboratory Identification	Matrix	Analyses		
				VOCs	SVOCs	Metals
Tunnel N-01	SA	XG26017-001	Water	X	--	--
Tunnel S-02	SA	XG26017-002	Water	X	--	--
TAMP-MW-3	SA	XG26017-003	Water	X	X	X

Sample Type: FD- Field Duplicate SA – Sample EB – Equipment Blank
Analyses: VOCs (Method 8260D)– Volatile Organic Compounds -- not analyzed
SVOCs (Method 8270E) – Semivolatile Organic Compounds
Metals (Method 6020B) – Arsenic, Barium, Cadmium, Chromium, Lead, Silver, Selenium, Mercury (7470A)

The data review was conducted in accordance with the Tarheel Army Missile Plant Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) (February 2022), Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3, and method requirements.

General Overall Assessment:

_____ Data are usable without qualification.
__X__ Data are usable with qualification
_____ Some or all data are unusable for any purpose (detailed below).

Case Narrative Comments: Any laboratory case narrative comments concerning data qualification were addressed in the table below.

Trace level detects, reported between the method detection limit (DL) and the limit of quantitation (LOQ), have been qualified as estimated (J) by the laboratory. The other occurrences of data qualification are covered in the following table.

Review Parameter	Criteria Met?	Comment
Chain of Custody & Sample Receipt	Yes	The samples were received by Pace Analytical Service, LLC (Pace) West Columbia, South Carolina in good condition and were consistent with the accompanying chain of custody (COC). The cooler temperatures upon receipt was within the recommended ≤6 degrees Celsius (°C) temperature range.
Holding Times	Yes	The analysis was conducted within the holding time requirements for the methods.

Review Parameter	Criteria Met?	Comment
Laboratory Blanks • Method Blank	No	With exception in Table 1, no target analytes were detected within the method blanks.
Matrix Quality Control • Matrix Spike/ Matrix Spike Duplicate (MS/MSD) None in this data package • Laboratory Duplicate None in this data package	No	**Matrix Spike/ Matrix Spike Duplicate** A matrix spike and matrix spike duplicate were not reported in this data package. **Laboratory Duplicate** A laboratory duplicate was not reported in this data package.
Method Quality Control • Surrogates - Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs)	Yes	The surrogate recoveries were within the Department of Defense (DoD) Quality Systems Manual (QSM) version 5.3 limits.
Field Quality Control • Trip Blank None reported in this data package • Field Duplicate None reported in this data package • Equipment Blank No report in this data package • Field Blank None reported in this data package	No	**Trip Blank (VOCs Only)** A trip blank was not submitted with the samples reported in this package. Therefore, contamination introduced during shipment could not be evaluated. **Field Duplicate** A field duplicate was not reported in this data package. **Equipment Blank** An equipment was not reported in this package. **Field Blank** A field blank was not reported in this data package.
LOQs met?	Yes	No results were reported as non-detect at elevated limit of quantitation (LOQ).
Laboratory Control Sample (LCS)	Yes	One LCS per method per analytical batch was prepared and analyzed. The LCS recoveries were within DoD QSM version 5.3 limits.
Other issues identified in the Case Narrative: None	NA	None

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≤ - Less Than or Equal To
± - Plus or Minus
°C – Degrees Celsius
% - Percent
CCV – Continuing Calibration Verification
COC – Chain of Custody
DL – Detection Limit
DoD – Department of defense
ICV – Initial Calibration Verification
LCS – Laboratory Control Sample
LOQ – Limit of Quantitation
MS/MSD – Matrix Spike/ Matrix Spike Duplicate
NA – Not Applicable
QSM – Quality Systems Manual
RPDs – Relative Percent Differences
SVOCs – Semivolatile Organic Compounds
VOCs – Volatile Organic Compounds

Table 1: Blank Outliers and Resultant Data Qualification

Associated Samples	Analyte	Concentration	Qualification
SVOCs			
XQ26017-003	Di-n-butyl phthalate	0.72µg/L	Associated results within 10 times (common laboratory contaminant) were qualified as nondetect (U) at the limit of quantitation.

µg/L – Micrograms per Liter
U - Nondetect
SVOCs – Semivoltaile Organic Compounds

Tarheel Army Missile Plant
Data Validation Summary

Data Package Number: XH10027
Sampling Event Dates: August 9th, 2022

The table below summarizes the data package and sample identifications discussed in this data review.

Field Identification	Sample Type	Laboratory Identification	Matrix	Analyses		
				VOCs	SVOCs	Metals
SW-01A	SA	XH10027-001	Water	X	--	--
SW-01B	SA	XH10027-002	Water	X	--	--
SW-01	SA	XH10027-003	Water	X	--	--
SW-02	SA	XH10027-004	Water	X	--	--
SW-02A	SA	XH10027-005	Water	X	--	--
SW-03	SA	XH10027-006	Water	X	--	--
DUP-SW-02	FD	XH10027-007	Water	X	--	--
MW-130	SA	XH10027-008	Water	X	X	X
MW-131	SA	XH10027-009	Water	X	X	X
TB-01	TB	XH10027-010	Water	X	--	--
MW-137	SA	XH10027-011	Water	X	X	X
MW-140	SA	XH10027-012	Water	X	X	X
TAMP-MW-8	SA	XH10027-013	Water	X	X	X

Sample Type: FD- Field Duplicate SA – Sample TB – Trip Blank
FB – Field Blank
Analyses: VOCs (Method 8260D)– Volatile Organic Compounds -- not analyzed
SVOCs (Method 8270E) – Semivolatile Organic Compounds
Metals (Method 6020B) – Arsenic, Barium, Cadmium, Chromium, Lead, Silver, Selenium, Mercury (7470A)

The data review was conducted in accordance with the Tarheel Army Missile Plant Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) (February 2022), Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3, and method requirements.

General Overall Assessment:

_____ Data are usable without qualification.
__X__ Data are usable with qualification
_____ Some or all data are unusable for any purpose (detailed below).

Case Narrative Comments: Any laboratory case narrative comments concerning data qualification were addressed in the table below.

Trace level detects, reported between the method detection limit (DL) and the limit of quantitation (LOQ), have been qualified as estimated (J) by the laboratory. The other occurrences of data qualification are covered in the following table.

Review Parameter	Criteria Met?	Comment
Chain of Custody & Sample Receipt	Yes	The samples were received by Pace Analytical Service, LLC (Pace) West Columbia, South Carolina in good condition and were consistent with the accompanying chain of custody (COC). The cooler temperatures upon receipt was within the recommended ≤6 degrees Celsius (°C) temperature range. It was documented in the case narrative that sample TB-01 and MW-137 had air bubbles greater than 6 millimeters. However, it no issues were documented during sample receiving; therefore, the sample results were not qualified.
Holding Times	Yes	The analysis was conducted within the holding time requirements for the methods.
Laboratory Blanks • Method Blank	Yes	No target analytes were detected within the method blanks.
Matrix Quality Control • Matrix Spike/ Matrix Spike Duplicate (MS/MSD) MW-130 (SVOCs, mercury) • Laboratory Duplicate None in this data package	Yes	**Matrix Spike/ Matrix Spike Duplicate** The MS/MSD recoveries and relative percent differences (RPDs) were within the laboratory acceptance limits. Results in the native sample greater than four times the concentration of the spike added during digestions/extractions are not considered to be a representative measure of accuracy. Further action with respect to spike recovery evaluation or qualification of data was not considered necessary. **Laboratory Duplicate** A laboratory duplicate was not reported in this data package.
Method Quality Control • Surrogates – Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs)	Yes	The surrogate recoveries were within the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3 limits.
Field Quality Control • Trip Blank TB-01 • Field Duplicate DUB-SW-02/SW-02A • Equipment Blank None in this data package • Field Blank None in this data package	No	**Trip Blank (VOCs Only)** With the one exception, no target analytes were detected in the trip blank sample. Acetone was detected in the trip blank at a concentration of 5.2 µg/L. Associated results within 10 times (common laboratory contaminant) were qualified as nondetect at the limit of quantitation. **Field Duplicate** The comparison between results of the field duplicate pairs met the applicable evaluation criteria listed below: • If the parent sample and duplicate values are >5x limit of quantitation (LOQ), then <30% RPD for water and vapor samples (<50% soil). • If the parent sample or duplicate sample value is <5xLOQ, then absolute difference is <2xLOQ for water (<3.5xLOQ for soil and soil vapor).

Review Parameter	Criteria Met?	Comment
		Equipment Blank An equipment was not reported is this data package. **Field Blank (VOCs Only)** A field blank was not reported in this data package.
LOQs met?	Yes	No results were reported as non-detect at elevated limit of quantitation (LOQ).
Laboratory Control Sample (LCS)	Yes	One LCS per method per analytical batch was prepared and analyzed. The LCS recoveries were within DoD QSM Version 5.3 limits.
Other issues identified in the Case Narrtive: • Initial Calibration Verification (ICV) • Continuing Calibration Verification (CCV)	No	The CCV for acetone exceeded the acceptance criteria for the samples reported in this data package. The associated acetone result for TB-01 was qualified as estimated (J+) to reflect the potential high bias.

> - Greater Than
< - Less Than
≤ - Less Than or Equal To
± - Plus or Minus
°C – Degrees Celsius
% - Percent
CCV – Continuing Calibration Verification
COC – Chain of Custody
DL – Detection Limit
DoD – Department of defense
ICV – Initial Calibration Verification
J+ - Estimated with a potential high bias
LCS – Laboratory Control Sample
LOQ – Limit of Quantitation
MS/MSD – Matrix Spike/ Matrix Spike Duplicate
µg/L – microgram per liters
NA – Not Applicable
QSM – Quality Systems Manual
RL – Reporting Limit
RPDs – Relative Percent Differences
SVOCs – Semivolatile Organic Compounds
VOCs – Volatile Organic Compounds

Tarheel Army Missile Plant
Data Validation Summary

Data Package Number: XH10288
Sampling Event Dates: August 9th, 2022

The table below summarizes the data package and sample identifications discussed in this data review.

Field Identification	Sample Type	Laboratory Identification	Matrix	Analyses				
				VOCs	SVOCs	Metals	TOC	RSK-175
MW-5	SA	XH10028-001	Water	X	X	X	--	--
MW-111	SA	XH10028-002	Water	X	X	X	--	--
MW-2	SA	XH10028-003	Water	X	X	X	--	--
MW-102	SA	XH10028-004	Water	X	X	X	X	X
TB-03	TB	XH10208-005	Trip Blank	X	--	--	--	--

Sample Type: FD- Field Duplicate SA – Sample TB – Trip Blank
FB – Field Blank
Analyses: VOCs (Method 8260D)– Volatile Organic Compounds -- not analyzed
SVOCs (Method 8270E) – Semivolatile Organic Compounds
Metals (Method 6020B) – Arsenic, Barium, Cadmium, Chromium, Lead, Silver, Selenium, Mercury (7470A)
TOC – Total Organic Carbon
RSK – Robert S Kerr

The data review was conducted in accordance with the Tarheel Army Missile Plant Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) (February 2022), Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3, and method requirements.

General Overall Assessment:

_____ Data are usable without qualification.
__X__ Data are usable with qualification
_____ Some or all data are unusable for any purpose (detailed below).

Case Narrative Comments: Any laboratory case narrative comments concerning data qualification were addressed in the table below.

Trace level detects, reported between the method detection limit (DL) and the limit of quantitation (LOQ), have been qualified as estimated (J) by the laboratory. The other occurrences of data qualification are covered in the following table.

Review Parameter	Criteria Met?	Comment
Chain of Custody & Sample Receipt	Yes	The samples were received by Pace Analytical Service, LLC (Pace) West Columbia, South Carolina in good condition and were consistent with the accompanying chain of custody (COC).

Review Parameter	Criteria Met?	Comment
		The cooler temperatures upon receipt was within the recommended ≤6 degrees Celsius (°C) temperature range.
Holding Times	Yes	The analysis was conducted within the holding time requirements for the methods.
Laboratory Blanks • Method Blank	Yes	No target analytes were detected within the method blanks.
Matrix Quality Control • Matrix Spike/ Matrix Spike Duplicate (MS/MSD) MW-102 (TOC) Laboratory Duplicate None in this data package	No	**Matrix Spike/ Matrix Spike Duplicate** The MS/MSD recoveries and relative percent differences (RPDs) were within the laboratory acceptance limits. Results in the native sample greater than four times the concentration of the spike added during digestions/extractions are not considered to be a representative measure of accuracy. Further action with respect to spike recovery evaluation or qualification of data was not considered necessary. **Laboratory Duplicate** A laboratory duplicate was not reported in this data package.
Method Quality Control • Surrogates – Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs)	Yes	The surrogate recoveries were within the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3 limits.
Field Quality Control • Trip Blank TB-03 • Field Duplicate None in this data package • Equipment Blank None in this data package • Field Blank None in this data package	No	**Trip Blank (VOCs Only)** With one exception, no target analytes were detected in the trip blank sample. Acetone was detected in the trip blank at a concentration of 13 µg/L. Associated results within 10 times (common laboratory contaminant) were qualified as nondetect at the limit of quantitation. **Field Duplicate** A field duplicate sample was not reported in this data package **Equipment Blank** An equipment was not reported is this data package. **Field Blank (VOCs Only)** A field blank was not reported in this data package.
LOQs met?	Yes	No results were reported as non-detect at elevated limit of quantitation (LOQ).
Laboratory Control Sample (LCS)	Yes	One LCS per method per analytical batch was prepared and analyzed. The LCS recoveries were within DoD QSM Version 5.3 limits.
Other issues identified in the Case Narrative: • Continuing Calibration Verification (CCV)	No	For VOCs, the CCV for acetone exceeded the acceptance criterion associated with samples MW-5, MW-111, MW-2, and MW-102. Data qualification was not considered necessary as the associated results were qualified as nondetect and the potential bias is considered to be high.

Review Parameter	Criteria Met?	Comment
		The CCV for vinyl chloride exceeded the acceptance limit associated with samples TB-03. Data qualification was not considered necessary as the associated result was reported as nondetect and the potential bias is considered to be high.

> - Greater Than
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°C – Degrees Celsius
% - Percent
CCV – Continuing Calibration Verification
COC – Chain of Custody
DL – Detection Limit
DoD – Department of defense
LCS – Laboratory Control Sample
LOQ – Limit of Quantitation
MS/MSD – Matrix Spike/ Matrix Spike Duplicate
µg/L – microgram per liters
NA – Not Applicable
QSM – Quality Systems Manual
RL – Reporting Limit
RPDs – Relative Percent Differences
SVOCs – Semivolatile Organic Compounds
TOC – Total Organic Carbon
VOCs – Volatile Organic Compounds

Tarheel Army Missile Plant
Data Validation Summary

Data Package Number: XH10043
Sampling Event Dates: August 8th and 9th, 2022

The table below summarizes the data package and sample identifications discussed in this data review.

Field Identification	Sample Type	Laboratory Identification	Matrix	Analyses				
				VOCs	SVOCs	Metals	TOC	RSK-175
MW-110	SA	XH10043-001	Water	X	X	X	X	X
MW-118	SA	XH10043-002	Water	X	X	X	--	--
MW-121	SA	XH10043-003	Water	X	X	X	X	X
MW-115	SA	XH10043-004	Water	X	X	X	X	X
TB-02	SA	XH10043-005	Trip Blank	X	--	--	--	--

Sample Type: FD- Field Duplicate SA – Sample TB – Trip Blank
FB – Field Blank
Analyses: VOCs (Method 8260D)– Volatile Organic Compounds -- not analyzed
SVOCs (Method 8270E) – Semivolatile Organic Compounds
Metals (Method 6020B) – Arsenic, Barium, Cadmium, Chromium, Lead, Silver, Selenium, Mercury (7470A)
TOC – Total Organic Carbon
RSK – Robert S Kerr

The data review was conducted in accordance with the Tarheel Army Missile Plant Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) (February 2022), Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3, and method requirements.

General Overall Assessment:

_____ Data are usable without qualification.
__X__ Data are usable with qualification
_____ Some or all data are unusable for any purpose (detailed below).

Case Narrative Comments: Any laboratory case narrative comments concerning data qualification were addressed in the table below.

Trace level detects, reported between the method detection limit (DL) and the limit of quantitation (LOQ), have been qualified as estimated (J) by the laboratory. The other occurrences of data qualification are covered in the following table.

Review Parameter	Criteria Met?	Comment
Chain of Custody & Sample Receipt	Yes	The samples were received by Pace Analytical Service, LLC (Pace) West Columbia, South Carolina in good condition and were consistent with the accompanying chain of custody (COC).

Review Parameter	Criteria Met?	Comment
		The cooler temperatures upon receipt was within the recommended ≤6 degrees Celsius (°C) temperature range. It was documented in the case narrative that sample MW-110 had air bubbles greater than 6 millimeters. However, it no issues were documented during sample receiving; therefore, the sample results were not qualified.
Holding Times	Yes	The analysis was conducted within the holding time requirements for the methods.
Laboratory Blanks • Method Blank	Yes	No target analytes were detected within the method blanks.
Matrix Quality Control • Matrix Spike/ Matrix Spike Duplicate (MS/MSD) MW-110 (VOCs MW-118 (VOCs) • Laboratory Duplicate None in this data package	No	**Matrix Spike/ Matrix Spike Duplicate** With one exception, the MS/MSD recoveries and relative percent differences (RPDs) were within the laboratory acceptance limits. For sample MW-110, the MSD recovery for trichloroethene was below the acceptance limits of 79-123% with a recovery of 71% indicating a potential low bias. However, organic results are not qualified based on MS/MSD results alone. Results in the native sample greater than four times the concentration of the spike added during digestions/extractions are not considered to be a representative measure of accuracy. Further action with respect to spike recovery evaluation or qualification of data was not considered necessary. **Laboratory Duplicate** A laboratory duplicate was not reported in this data package.
Method Quality Control • Surrogates – Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs)	Yes	The surrogate recoveries were within the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3 limits.
Field Quality Control • Trip Blank TB-02 • Field Duplicate None • Equipment Blank None in this data package • Field Blank None in this data package	No	**Trip Blank (VOCs Only)** With the one exception, no target analytes were detected in the trip blank sample. Acetone was detected in the trip blank at a concentration of 7.6 µg/L. Data qualification was not considered necessary as the associated results were reported as nondetect. **Field Duplicate** A field duplicate sample was not reported in this data package **Equipment Blank** An equipment was not reported is this data package. **Field Blank (VOCs Only)** A field blank was not reported in this data package.
LOQs met?	Yes	With the following exceptions, no results were reported as non-detect at elevated limit of quantitation (LOQ).

Review Parameter	Criteria Met?	Comment
		For VOCs the following results reported as nondetect at elevated LOQs will need to evaluated: MW-110 (5x), MW-118 (1x and 10x), and MW-115 (20x) with respect to project objectives.
Laboratory Control Sample (LCS)	Yes	One LCS per method per analytical batch was prepared and analyzed. The LCS recoveries were within DoD QSM Version 5.3 limits.
Other issues identified in the Case Narrtive: • Initial Calibration Verification (ICV) • Continuing Calibration Verification (CCV)	No	For VOCs, the CCV for acetone exceeded the acceptance criterion associated with samples MW-110, MW-118, and MW-115. The CCV for vinyl chloride exceeded the acceptance limit associated with samples MW-121 and TB-02. Data qualification was not considered necessary as the associated results were reported as nondetect and the potential bias is considered to be high. The closing CCV associated with sample MW-110 in batch 51688 was not analyzed at end of sequence. The MSD run at the end of the sequence was copied and processed as a closing CCV. Data qualification was not considered necessary as the CCV passed acceptance criteria.

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% - Percent
CCV – Continuing Calibration Verification
COC – Chain of Custody
DL – Detection Limit
DoD – Department of defense
ICV – Initial Calibration Verification
J+ - Estimated with a potential high bias
LCS – Laboratory Control Sample
LOQ – Limit of Quantitation
MS/MSD – Matrix Spike/ Matrix Spike Duplicate
µg/L – microgram per liters
NA – Not Applicable
QSM – Quality Systems Manual
RL – Reporting Limit
RPDs – Relative Percent Differences
SVOCs – Semivolatile Organic Compounds
VOCs – Volatile Organic Compounds

Tarheel Army Missile Plant
Data Validation Summary

Data Package Number: XH11018
Sampling Event Dates: August 9th and 10th, 2022

The table below summarizes the data package and sample identifications discussed in this data review.

Field Identification	Sample Type	Laboratory Identification	Matrix	Analyses				
				VOCs	SVOCs	Metals	TOC	RSK-175
MW-112	SA	XH11018-001	Water	X	X	X	X	X
MW-103	SA	XH11018-002	Water	X	X	X	X	X
MW-108	SA	XH11018-003	Water	X	X	X	X	X
MW-11	SA	XH11018-004	Water	X	X	X	X	X
TB-09	TB	XH11018-005	Trip Blank	X	--	--	--	--

Sample Type: FD- Field Duplicate SA – Sample TB – Trip Blank
FB – Field Blank
Analyses: VOCs (Method 8260D)– Volatile Organic Compounds -- not analyzed
SVOCs (Method 8270E) – Semivolatile Organic Compounds
Metals (Method 6020B) – Arsenic, Barium, Cadmium, Chromium, Lead, Silver, Selenium, Mercury (7470A)
TOC – Total Organic Carbon
RSK – Robert S Kerr

The data review was conducted in accordance with the Tarheel Army Missile Plant Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) (February 2022), Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3, and method requirements.

General Overall Assessment:

_____ Data are usable without qualification.
__X__ Data are usable with qualification
_____ Some or all data are unusable for any purpose (detailed below).

Case Narrative Comments: Any laboratory case narrative comments concerning data qualification were addressed in the table below.

Trace level detects, reported between the method detection limit (DL) and the limit of quantitation (LOQ), have been qualified as estimated (J) by the laboratory. The other occurrences of data qualification are covered in the following table.

Review Parameter	Criteria Met?	Comment
Chain of Custody & Sample Receipt	No	The samples were received by Pace Analytical Service, LLC (Pace) West Columbia, South Carolina in good condition and were consistent with the accompanying chain of custody (COC).

Review Parameter	Criteria Met?	Comment
		The cooler temperatures upon receipt was within the recommended ≤6 degrees Celsius (°C) temperature range. For Volatile Organic Compounds (VOCs) and dissolved gases, it was documented in the case narrative and on the sample receiving form that the vials for sample MW-103 were received with air bubbles greater than 6 millimeters. Therefore, the associated results were qualified as estimated (J-/UJ) to reflect the potential.
Holding Times	Yes	The analysis was conducted within the holding time requirements for the methods.
Laboratory Blanks • Method Blank	Yes	No target analytes were detected within the method blanks.
Matrix Quality Control • Matrix Spike/ Matrix Spike Duplicate (MS/MSD) MW-108 (VOCs • Laboratory Duplicate None in this data package	No	**Matrix Spike/ Matrix Spike Duplicate** With one exception, the MS/MSD recoveries and relative percent differences (RPDs) were within the laboratory acceptance limits. For sample MW-108, the MS recovery for bromoform was below the acceptance limits of 66-130% with a recovery of 65% indicating a potential low bias. The MSD was within the acceptance limits. The RPDs between the MS/MSD results for dichlorodifluoromethane and methyl acetate exceeded the acceptance criterion of less than 20% with RPDs of 23% and 26%, respectively. However, organic results are not qualified based on MS/MSD results alone. Results in the native sample greater than four times the concentration of the spike added during digestions/extractions are not considered to be a representative measure of accuracy. Further action with respect to spike recovery evaluation or qualification of data was not considered necessary. **Laboratory Duplicate** A laboratory duplicate was not reported in this data package.
Method Quality Control • Surrogates – Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs)	Yes	The surrogate recoveries for the site samples were within the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3 limits.
Field Quality Control • Trip Blank TB-09 • Field Duplicate None • Equipment Blank None in this data package • Field Blank None in this data package	No	**Trip Blank (VOCs Only)** No target analytes were detected in the trip blank sample. **Field Duplicate** A field duplicate sample was not reported in this data package **Equipment Blank** An equipment was not reported is this data package. **Field Blank (VOCs Only)** A field blank was not reported in this data package.
LOQs met?	No	With one exception, no results were reported as non-detect at elevated limit of quantitation (LOQ).

Review Parameter	Criteria Met?	Comment
		For VOCs, results from MW-08 (5x) were reported as nondetect at elevated LOQs and will need to be evaluated with respect to project objectives.
Laboratory Control Sample (LCS)	Yes	One LCS per method per analytical batch was prepared and analyzed. The LCS recoveries were within DoD QSM Version 5.3 limits.
Other issues identified in the Case Narrtive: • Initial Calibration Verification (ICV) • Continuing Calibration Verification (CCV)	No	For VOCs, the CCV for vinyl chloride exceeded the acceptance criterion associated with samples MW-112 and TB-09. Data qualification was not considered necessary as the associated results were reported as nondetect and the potential bias is considered to be high.

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% - Percent
CCV – Continuing Calibration Verification
COC – Chain of Custody
DL – Detection Limit
DoD – Department of defense
ICV – Initial Calibration Verification
J+ - Estimated with a potential high bias
LCS – Laboratory Control Sample
LOQ – Limit of Quantitation
MS/MSD – Matrix Spike/ Matrix Spike Duplicate
µg/L – microgram per liters
NA – Not Applicable
QSM – Quality Systems Manual
RL – Reporting Limit
RPDs – Relative Percent Differences
SVOCs – Semivolatile Organic Compounds
VOCs – Volatile Organic Compounds

Table 1: Blank Outliers and Resultant Data Qualification

Associated Samples	Analyte	Concentration	Qualification
Dissolved Gases			
XQ51425-001	Methane	3.1 µg/L	Associated results reported within 5 times the blank amount were qualified as nondetect at the limit of quantitation.

µg/L – Micrograms per Liter MB – Method Blank

Tarheel Army Missile Plant
Data Validation Summary

Data Package Number: XH11019
Sampling Event Dates: August 9th and 10th, 2022

The table below summarizes the data package and sample identifications discussed in this data review.

Field Identification	Sample Type	Laboratory Identification	Matrix	Analyses				
				VOCs	SVOCs	Metals	TOC	RSK-175
MW-141	SA	XH11019-001	Water	X	X	X	X	X
MW-139	SA	XH11019-002	Water	X	X	X	X	X
MW-120	SA	XH11019-003	Water	X	X	X	X	X
MW-136	SA	XH11019-004	Water	X	X	X	X	X
FB-02	FB	XH11019-005	Water	X	--	--	--	--
TB-07	TB	XH11019-006	Water	X	--	--	--	--
DUP-GW-01	FD	XH11019-007	Water	X	X	X	X	X

Sample Type: FD- Field Duplicate SA – Sample TB – Trip Blank
FB – Field Blank
Analyses: VOCs (Method 8260D)– Volatile Organic Compounds -- not analyzed
SVOCs (Method 8270E) – Semivolatile Organic Compounds
Metals (Method 6020B) – Arsenic, Barium, Cadmium, Chromium, Lead, Silver, Selenium, Mercury (7470A)
TOC – Total Organic Carbon
RSK – Robert S Kerr

The data review was conducted in accordance with the Tarheel Army Missile Plant Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) (February 2022), Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3, and method requirements.

General Overall Assessment:

_____ Data are usable without qualification.
__X__ Data are usable with qualification
_____ Some or all data are unusable for any purpose (detailed below).

Case Narrative Comments: Any laboratory case narrative comments concerning data qualification were addressed in the table below.

Trace level detects, reported between the method detection limit (DL) and the limit of quantitation (LOQ), have been qualified as estimated (J) by the laboratory. The other occurrences of data qualification are covered in the following table.

Review Parameter	Criteria Met?	Comment
Chain of Custody & Sample Receipt	Yes	The samples were received by Pace Analytical Service, LLC (Pace) West Columbia, South Carolina in good condition and were consistent with the accompanying chain of custody (COC). The cooler temperatures upon receipt was within the recommended ≤6 degrees Celsius (°C) temperature range.
Holding Times Dup is EDD 2 times	No	With the following exceptions, the analysis was conducted within the holding time requirements for the methods: • Reanalysis of samples FB-02 and TB-07 was performed outside of the holding time requirements due to the continuing calibration verifications below the acceptance limits for bromoform and 1,2-dibromo-3-chloropropane. • Reanalysis of samples MW-120 and DUP-GW-01 was run performed outside of the holding time requirements due to the continuing calibration verification outside the acceptance limit for, bromoform, 1,2-dibromo-3-chloropropane and trichloroethene. The associated results were qualified as estimated (J-/UJ) to reflect the potential low bias.
Laboratory Blanks • Method Blank	Yes	With the exception listed in Table 1, no target analytes were detected within the method blanks.
Matrix Quality Control • Matrix Spike/ Matrix Spike Duplicate (MS/MSD) None in this data package • Laboratory Duplicate None in this data package	NA	**Matrix Spike/ Matrix Spike Duplicate** A MS/MSD was not reported in this data package. **Laboratory Duplicate** A laboratory duplicate was not reported in this data package.
Method Quality Control • Surrogates – Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs)	Yes	The surrogate recoveries for the site samples were within the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3 limits.
Field Quality Control • Trip Blank TB-07 • Field Duplicate DUP-GW-01/MW-120 • Equipment Blank None in this data package • Field Blank FB-02	No	**Trip Blank (VOCs Only)** With the one exception, no target analytes were detected in the trip blank sample. Acetone was detected in the trip blank at a concentration of 6.2 µg/L. Data qualification was not considered necessary as the associated results were reported at concentrations greater than 10 tens the amount found in the trip blank **Field Duplicate** A field duplicate sample was not reported in this data package **Equipment Blank** An equipment was not reported is this data package. **Field Blank (VOCs Only)** With two exceptions, no target analytes were detected in the field blank sample. Acetone and methylene chloride were detected in the field blank at concentrations of 13 µg/L and 2.1 µg/L. Data qualification was not considered necessary as the associated results

Review Parameter	Criteria Met?	Comment
		were reported at concentrations greater than 10 times the amount found in the blanks.
LOQs met?	No	With the following exceptions, no results were reported as non-detect at elevated limit of quantitation (LOQ). For VOCs the following results reported as nondetect at elevated LOQs will need to be evaluated: MW-139 (5x), MW-120 (50x), DUP-GW-01 (50x), and MW-136 (10x) with respect to project objectives.
Laboratory Control Sample (LCS)	Yes	One LCS per method per analytical batch was prepared and analyzed. The LCS recoveries were within DoD QSM Version 5.3 limits.
Other issues identified in the Case Narrtive: • Initial Calibration Verification (ICV) • Continuing Calibration Verification (CCV)	No	For VOCs, the CCV for acetone exceeded the acceptance criterion associated with samples MW-120, FB-02, TB-07, and DUP-GW-01. The associated detected results were qualified as estimated (J+) to reflect the potential high bias. The CCV for vinyl chloride exceeded the acceptance limit associated with sample MW-141. Data qualification was not considered necessary as the associated results were reported as nondetect and the potential bias is considered to be high. The closing CCV associated with samples MW-120, FB-02, TB-07, and DUP-GW-01 was not analyzed at end of sequence. The MSD run at the end of the sequence was copied and processed as a closing CCV. Data qualification was not considered necessary as the CCV passed acceptance criteria. The closing CCV for trichloroethene associated with samples FB-02 and TB-07 exceeded the acceptance criterion. Data qualification was not considered necessary as the associated results were reported as nondetect and the potential bias is considered to be high.

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COC – Chain of Custody
DL – Detection Limit
DoD – Department of defense
ICV – Initial Calibration Verification
J+ - Estimated with a potential high bias
J- - Estimate with a potential low bias
LCS – Laboratory Control Sample
LOQ – Limit of Quantitation
MS/MSD – Matrix Spike/ Matrix Spike Duplicate
µg/L – microgram per liters
NA – Not Applicable
QSM – Quality Systems Manual
RL – Reporting Limit
RPDs – Relative Percent Differences
SVOCs – Semivolatile Organic Compounds
VOCs – Volatile Organic Compounds
UJ – Estimated nondetect

Table 1: Blank Outliers and Resultant Data Qualification

Associated Samples	Analyte	Concentration	Qualification
Dissolved Gases			
XQ51425-001	Methane	3.1 µg/L	Associated results reported at concentrations less than 5 times the amount in the method blank.

µg/L – Micrograms per Liter MB – Method Blank

Tarheel Army Missile Plant
Data Validation Summary

Data Package Number: XH11020
Sampling Event Dates: August 9th and 10th, 2022

The table below summarizes the data package and sample identifications discussed in this data review.

Field Identification	Sample Type	Laboratory Identification	Matrix	Analyses				
				VOCs	SVOCs	Metals	TOC	RSK-175
MW-107[1]	SA	XH11020-001	Water	X	X	X	X	X
DUP-GW-02[1]	FD	XH11020-002	Water	X	X	X	--	--
MW-119[2]	SA	XH11020-003	Water	X	X	X	--	--
MW-109[3]	SA	XH11020-004	Water	--	X	--	--	--
TB-06[1]	TB	XH11020-005	Water	X	--	--	--	--
MW-138[2]	SA	XH11020-006	Water	X	--	--	--	--
MW-127[2]	SA	XH11020-007	Water	X	--	--	--	--
MW-133[2]	SA	XH11020-008	Water	X	--	--	--	--
MW-119[2]	SA	XH11020-009	Water	X	--	--	--	--
MW-122[2]	SA	XH11020-010	Water	X	--	--	--	--
MW-124[2]	SA	XH11020-011	Water	X	--	--	--	--
FB-01[2]	FB	XH11020-012	Water	X	--	--	--	--
TB-04[2]	TB	XH11020-013	Water	X	--	--	--	--
MW-101[3]	SA	XH11020-014	Water	X	X	X	--	--
MW-117[3]	SA	XH11020-015	Water	X	X	X	--	--
MW-109[3]	SA	XH11020-016	Water	X		X	X	X
TB-05[3]	TB	XH11020-017	Water	X	--	--	--	--
EB-GW-02[1]	EB	XH11020-018	Water	X	X	X	--	--
EB-GW-01[1]	EB	XH11020-019	Water	X	X	X	--	--

Sample Type: FD- Field Duplicate; SA – Sample; TB – Trip Blank; FB – Field Blank; EB- Equipment Blank

Analyses: VOCs (Method 8260D)– Volatile Organic Compounds; -- not analyzed
SVOCs (Method 8270E) – Semivolatile Organic Compounds
Metals (Method 6020B) – Arsenic, Barium, Cadmium, Chromium, Lead, Silver, Selenium, Mercury (7470A)
TOC – Total Organic Carbon
RSK – Robert S Kerr

[1]Associated with TB-06
[2]Associated with TB-04
[3]Associated with TB-05

The data review was conducted in accordance with the Tarheel Army Missile Plant Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) (February 2022), Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3, and method requirements.

General Overall Assessment:

_____ Data are usable without qualification.
__X__ Data are usable with qualification
_____ Some or all data are unusable for any purpose (detailed below).

Case Narrative Comments: Any laboratory case narrative comments concerning data qualification were addressed in the table below.

Trace level detects, reported between the method detection limit (DL) and the limit of quantitation (LOQ), have been qualified as estimated (J) by the laboratory. The other occurrences of data qualification are covered in the following table.

Review Parameter	Criteria Met?	Comment
Chain of Custody & Sample Receipt	No	The samples were received by Pace Analytical Service, LLC (Pace) West Columbia, South Carolina in good condition and were consistent with the accompanying chain of custody (COC). Except for two coolers, the cooler temperatures upon receipt was within the recommended ≤6 degrees Celsius (°C) temperature range. Two coolers were received at a temperature of 7.6°C. As the samples were received on ice and only slightly above the temperature criterion, data qualification was not considered necessary. For volatile organic compounds (VOCs), it was documented in the case narrative that sample MW-101 had air bubbles greater than 6 millimeters. Therefore, the associated results were qualified as estimated (J-/UJ) to reflect the potential.
Holding Times	No	With the following exceptions listed below, the analysis was conducted within the holding time requirements for the methods: • Reanalysis of samples TB-06 and MW-127 was performed outside of the holding time requirements due to the continuing calibration verifications below the acceptance limits for bromoform and 1,2-dibromo-3-chloropropane. • Reanalysis of samples MW-107, MW-138, and MW-133 was run performed outside of the holding time requirements due to the continuing calibration verification outside the acceptance limit for, bromoform, 1,2-dibromo-3-chloropropane and trichloroethene. • Reanalysis of sample MW-101 was performed outside of holding time due suspected carryover from previous sample for trichloroethene. The associated results were qualified as estimated (J-/UJ) to reflect the potential low bias.

Review Parameter	Criteria Met?	Comment
Laboratory Blanks • Method Blank	Yes	No target analytes were detected within the method blanks.
Matrix Quality Control • Matrix Spike/ Matrix Spike Duplicate (MS/MSD) MW-109 -VOCs MW-107 -VOCs DUP-GW-02 - VOCs MW-119 – SVOCs, Mercury MW-109 – Methane, Mercury, TOC EB-GW-02 (Not Evaluated – nonsite matrix) • Laboratory Duplicate None in this data package	No	**Matrix Spike/ Matrix Spike Duplicate** With exceptions listed in Table 1, the MS/MSD recoveries and relative percent differences (RPDs) were within the laboratory acceptance limits. Results in the native sample greater than four times the concentration of the spike added during digestions/extractions are not considered to be a representative measure of accuracy. Further action with respect to spike recovery evaluation or qualification of data was not considered necessary. **Laboratory Duplicate** A laboratory duplicate was not reported in this data package.
Method Quality Control • Surrogates – Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs)	No	With the exceptions in Table 2, the surrogate recoveries were within the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3 limits.
Field Quality Control • Trip Blank TB-06 TB-04 TB-05 • Field Duplicate DUP-GW-02/MW-107 • Equipment Blank EB-GW-02 EB-GW-01 • Field Blank FB-01	No	**Trip Blank (VOCs Only)** With the exceptions listed in Table 3, no target analytes were detected in the trip blank sample. Acetone was detected in the trip blank at a concentration of 7.6 µg/L. Data qualification was not considered necessary as the associated results were reported as nondetect. **Field Duplicate** With one exception, the comparison between results of the field duplicate pairs met the applicable evaluation criteria listed below: • If the parent sample and duplicate values are >5x limit of quantitation (LOQ), then <30% RPD for water and vapor samples (<50% soil). • If the parent sample or duplicate sample value is <5xLOQ, then absolute difference is <2xLOQ for water (<3.5xLOQ for soil and soil vapor). The RPD for tetrachloroethene for the field duplicate pair exceeded the criterion of 30% with an RPD of 48%. Therefore, the tetrachloroethene results were qualified estimated (J) for samples DUP-GW-02 and MW-107. **Equipment Blank** With the exceptions listed in Table 3, no target analytes were detected in the equipment blank sample. **Field Blank (VOCs Only)** With one exception, no target analytes were detected in the field blank sample. Methylene chloride was detected at a concentration of 2.7. Data qualification was not considered necessary as the associated site samples were reported as nondetect.

Review Parameter	Criteria Met?	Comment
LOQs met?	No	With the following exceptions, no results were reported as non-detect at elevated limit of quantitation (LOQ). For VOCs the following results reported as nondetect at elevated LOQs will need to be evaluated: MW-107 (20x and 50x) and DUP-GW-02 (50x) with respect to project objectives.
Laboratory Control Sample (LCS)	No	With the exceptions listed in Table 3, one LCS per method per analytical batch was prepared and analyzed. The LCS recoveries were within DoD QSM Version 5.3 limits.
Other issues identified in the Case Narrtive: • Initial Calibration Verification (ICV) • Continuing Calibration Verification (CCV)	No	For VOCs, the CCV for acetone and 2-butanone exceeded the acceptance criterion associated with samples MW-119, MW-122, MW-124, FB-01, TB-04, MW-101, MW-117, EB-GW-02, and EB-GW-01. The closing CCV for acetone exceeded the acceptance limit associated with samples MW-107, DUP-GW-02, TB-06, MW-138, MW-127, and MW-133. The closing CCV for trichloroethene exceeded the acceptance limits associated with samples TB-06 and MW-127. Associated detected results were qualified as estimated (J+) to reflect the potential high bias. The closing CCV associated with batch 51688 was not analyzed at end of sequence. The MSD run at the end of the sequence was copied and processed as a closing CCV. Data qualification was not considered necessary as the CCV passed acceptance criteria.

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CCV – Continuing Calibration Verification
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DL – Detection Limit
DoD – Department of defense
ICV – Initial Calibration Verification
J+ - Estimated with a potential high bias
J- - Estimated with a potential low bias
LCS – Laboratory Control Sample
LOQ – Limit of Quantitation
MS/MSD – Matrix Spike/ Matrix Spike Duplicate
µg/L – microgram per liters
NA – Not Applicable
QSM – Quality Systems Manual
RL – Reporting Limit
RPDs – Relative Percent Differences
SVOCs – Semivolatile Organic Compounds
VOCs – Volatile Organic Compounds
UJ – estimated nondetect

Table 1: Matrix Spike Recovery Outliers and Resultant Data Qualification

Associated Samples	Analyte	%R	%R (Limits)	RPD	RPD (Limit)	Data Qualification
MW-107 (VOCs)	Several MS/MSD recoveries and RPDs were outside the acceptance limits. Results for organics are not qualified based on MS/MSD results alone. The outliers could be a result of the heterogeneity of the sample matrix or extraction efficiencies. Therefore, the results could be estimated based on the accuracy and imprecision.					
MW-109 MW-119 (SVOCs)						
MW-109 (Methane)						

%R – Percent Recovery
RPD – Relative Percent Difference
SVOCs- Semivolatile Organic Compounds
MS/MSD – Matrix Spike/Matrix Spike duplicate Sample
VOCs – Volatile Organic Compounds

Table 2: Surrogate Recovery and Resultant Data Qualification

Associated Samples	Analyte	%R	%R (Limits)	Data Qualification
SVOCs				
MW-101	2-Fluorobiphenyl	**42**	44-119	The base/neutral results were qualified as estimated (UJ/J-) to reflect the potential low bias. The samples were reextracted/reanalyzed outside holding time; the original results were selected for reporting
	Nitrobenzene-d5	**39**	44-120	
MW-117	2-Fluorobiphenyl	**43**	44-119	
	Nitrobenzene-d5	**38**	44-120	

%R – percent recoveries
UJ- estimated nondetect
J- - Estimated with a potential low bias
SVOCs – Semivolatile Organic Compounds

Table 3: Blank Detections Resultant Data Qualification

Associated Samples	Analyte	Concentration µg/l	Data Qualification
TB-04 MW-138 MW-17 MW-133 MW-119 MW-122 MW-124 FB-01	Acetone	**5.2**	Associated results within 5 5 times (10 times common laboratory contaminates) were qualified as nondetect at the laboratory quantitation limit.
TB-06 MW-107 DUP-GW-02 EB-GW-01 EB-GW-02	Acetone	**6.5**	
	Chloromethane	**0.57**	
EB-GW-01	Barium	3.6	Per the guidance validation, the associated results reported at concentrations <5x the blank contamination (<10x common laboratory contaminate) after accounting for the preparation value could potentially be biased high.
	Methylene Chloride	2.1	
	Caprolactam	15	
EB-GW-02	Benzaldehyde	0.76	
	Caprolactam	3.1	

Italic – Common Laboratory Contaminant
< - less than
µg/L – micrograms per liter

Table 4: Laboratory Control Sample Recovery and Resultant Data Qualification

Associated Samples	Analyte	%R	%R (Limits)	Data Qualification
VOCs				
LCS XQ52233-002	Acetone	**169**	39-160	None. The associated results were not selected for reporting from the reanalysis.
	2-Butanone	**144**	56-143	
SVOCs				
LCS XQ51699-002	3,3'-Dichlorobenzidine	**16**	27-129	None. The associated results were not selected for reporting from the reanalysis.
	3-Nitroaniline	**35**	41-128	

LCS – Laboratory Control Sample
SVOCs – Semivolatile Organic Compounds
%R – Percent Recovery
VOCs – Volatile Organic Compounds

Tarheel Army Missile Plant
Data Validation Summary

Data Package Number: XH12007
Sampling Event Dates: August 10th, 2022

The table below summarizes the data package and sample identifications discussed in this data review.

Field Identification	Sample Type	Laboratory Identification	Matrix	Analyses				
				VOCs	SVOCs	Metals	TOC	RSK-175
MW-132	SA	XH12007-001	Water	X	X	X	X	X
MW-106	SA	XH12007-002	Water	X	X	X	--	--
MW-116	SA	XH12007-003	Water	X	X	X	--	--
TB-08	TB	XH12007-004	Trip Blank	X	--	--	--	--

Sample Type: FD- Field Duplicate SA – Sample TB – Trip Blank
FB – Field Blank
Analyses: VOCs (Method 8260D)– Volatile Organic Compounds -- not analyzed
SVOCs (Method 8270E) – Semivolatile Organic Compounds
Metals (Method 6020B) – Arsenic, Barium, Cadmium, Chromium, Lead, Silver, Selenium, Mercury (7470A)
TOC – Total Organic Carbon
RSK – Robert S Kerr

The data review was conducted in accordance with the Tarheel Army Missile Plant Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) (February 2022), Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3, and method requirements.

General Overall Assessment:

_____ Data are usable without qualification.
__X__ Data are usable with qualification
_____ Some or all data are unusable for any purpose (detailed below).

Case Narrative Comments: Any laboratory case narrative comments concerning data qualification were addressed in the table below.

Trace level detects, reported between the method detection limit (DL) and the limit of quantitation (LOQ), have been qualified as estimated (J) by the laboratory. The other occurrences of data qualification are covered in the following table.

Review Parameter	Criteria Met?	Comment
Chain of Custody & Sample Receipt	No	The samples were received by Pace Analytical Service, LLC (Pace) West Columbia, South Carolina in good condition and were consistent with the accompanying chain of custody (COC). The cooler temperatures upon receipt was within the recommended ≤6 degrees Celsius (°C) temperature range.

Review Parameter	Criteria Met?	Comment
		It was documented in the case narrative and on the sample receiving form that the vials for sample TB-08 were received with air bubbles greater than 6 millimeters. Therefore, the associated results were qualified as estimated (J-/UJ) to reflect the potential low bias.
Holding Times	No	With the following exceptions, the analysis was conducted within the holding time requirements for the methods: • Reanalysis of samples MW-116, MW-132, and TB-08 was performed outside the holding time requirements due to the continuing calibration verifications below the acceptance limits for Bromoform and 1,2-dibromo-3-chloropropane. • Reanalysis of sample MW-132 was performed outside the holding time requirements due to the continuing calibration verification above the acceptance limit for trichloroethene. The associated results were qualified as estimated (J-/UJ) to reflect the potential low bias.
Laboratory Blanks • Method Blank	No	With exception in Table 1, no target analytes were detected within the method blanks.
Matrix Quality Control • Matrix Spike/ Matrix Spike Duplicate (MS/MSD) MW-132 (Inorganic non-metals) Laboratory Duplicate None in this data package	No	**Matrix Spike/ Matrix Spike Duplicate** The MS/MSD recoveries and relative percent differences (RPDs) were within the laboratory acceptance limits. Results in the native sample greater than four times the concentration of the spike added during digestions/extractions are not considered to be a representative measure of accuracy. Further action with respect to spike recovery evaluation or qualification of data was not considered necessary. **Laboratory Duplicate** A laboratory duplicate was not reported in this data package.
Method Quality Control • Surrogates – Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs)	Yes	The surrogate recoveries were within the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3 limits.
Field Quality Control • Trip Blank TB-08 • Field Duplicate None • Equipment Blank None in this data package • Field Blank None in this data package	Yes	**Trip Blank (VOCs Only)** No target analytes were detected in the trip blank sample. Data qualification was not considered necessary as the associated results were reported as nondetect. **Field Duplicate** A field duplicate sample was not reported in this data package **Equipment Blank** An equipment was not reported is this data package. **Field Blank (VOCs Only)**

Review Parameter	Criteria Met?	Comment
		A field blank was not reported in this data package.
LOQs met?	No	No results were reported as non-detect at elevated limit of quantitation (LOQ).
Laboratory Control Sample (LCS)	Yes	One LCS per method per analytical batch was prepared and analyzed. The LCS recoveries were within DoD QSM Version 5.3 limits.
Other issues identified in the Case Narrtive: • Continuing Calibration Verification (CCV) •	No	For VOCs, the CCV for acetone exceeded the acceptance criterion associated with samples MW-132, MW-116, and TB-08. The associated detected results were qualified as estimated (J+) to reflect the potential high bias. The CCV for trichloroethene exceeded the acceptance limit associated with samples MW-116 and TB-08. Data qualification was not considered necessary as the associated results were reported as nondetect and the potential bias is considered to be high. The closing CCV associated with samples MW-132, MW-116, TB-08was not analyzed at end of sequence. The MSD run at the end of the sequence was copied and processed as a closing CCV. Data qualification was not considered necessary as the CCV passed acceptance criteria

> - Greater Than
< - Less Than
≤ - Less Than or Equal To
± - Plus or Minus
°C – Degrees Celsius
% - Percent
CCV – Continuing Calibration Verification
COC – Chain of Custody
DL – Detection Limit
DoD – Department of defense
ICV – Initial Calibration Verification
J+ - Estimated with a potential high bias
J- - Estimated with a potential low bias
LCS – Laboratory Control Sample
LOQ – Limit of Quantitation
MS/MSD – Matrix Spike/ Matrix Spike Duplicate
µg/L – microgram per liters
NA – Not Applicable
QSM – Quality Systems Manual
RL – Reporting Limit
RPDs – Relative Percent Differences
SVOCs – Semivolatile Organic Compounds
VOCs – Volatile Organic Compounds
UJ – Estimated nondetect

Table 1: Blank Outliers and Resultant Data Qualification

Associated Samples	Analyte	Concentration	Qualification
Dissolved Gases			
XQ51425-001	Methane	3.1 µg/L	None. The associated result was reported at a concentration greater than five times the amount found in the method blank.

µg/L – Micrograms per Liter MB – Method Blank

Tarheel Army Missile Plant
Surface Water Data Validation Summary
October 27, 2022

The data review was conducted in accordance with the Tarheel Army Missile Plant Uniform Federal Policy Quality Assurance Project Plan (QAPP) (February 2022), Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3, and method requirements. Results are considered usable as qualified. This section presents the overall assessment of the data with respect to the PARCC parameters (precision, accuracy, representativeness, completeness, comparability) and sensitivity.

TABLE 1: SUMMARY OF SAMPLES FOR THEGROUNDWATER EVENT

Sample ID	Laboratory ID	QC Designation	Analyses
SW-1	XJ29009-001		VOCs
SW-1A	XJ29009-002		
SW-1B	XJ29009-003		
SW-2	XJ29009-004		
SW-2A	XJ29009-005		
SW-3	XJ29009-006		
SW-3A	XJ29009-007		
DUP-SW-20221027	XJ29009-008	Field Duplicate to sample SW-2A	
TB-01	XJ29009-009	Trip Blank	

ID – Identification QC – Quality Control VOCs – Volatile Organic Compounds

1.1 PRECISION

Precision is a measure of agreement among replicate (or between duplicate) or co-located sample measurements of the same analyte. The closer the numerical values of the measurements are to each other, the more precise the measurement. Precision for a single analyte was expressed as a relative percent difference (RPD) or absolute difference between field duplicate results.

One field duplicate sample were collected in association with this event. A matrix spike and matrix spike duplicate (MS/MSD) was not performed on a site-specific sample for this sampling event. The comparison between results of the field duplicate pairs met the criteria listed below.

- If the parent sample and duplicate values are >5xLOQ, then <30% RPD for water and vapor samples (<50% soil).

- If the parent sample or duplicate sample value is <5xLOQ, then absolute difference is <2xLOQ for water (<3.5xLOQ for soil and soil vapor).

No results were qualified as estimated or as unusable based on the precision between the field indicating acceptable precision was demonstrated.

1.2 ACCURACY

Accuracy is a measure of bias in a measurement system. The closer the value of the measurement agrees with the true value, the more accurate the measurement. This was expressed as the percent recoveries of surrogate recoveries and recoveries of target analytes in the laboratory control samples. A MS/MSD was not performed on a site-specific sample for this sampling event.

No results were rejected or qualified as estimated based on the accuracy between the LCS recoveries or surrogate recoveries; indicating acceptable accuracy was demonstrated with respect to the analytical method and matrix.

1.3 REPRESENTATIVENESS

Representativeness is the degree to which data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or an environmental condition. The design of, and rationale for, the sampling program (in terms of the purpose for sampling, selecting the sampling locations, the number of samples to be collected, the ambient conditions for sample collection, the frequencies and timing for sampling, and the sampling techniques) assures that the environmental condition has been sufficiently represented. Representativeness was maintained during the sampling effort by completing the sampling using similar sampling procedures and in accordance with the approved QAPP and work plan

The agreement between the field duplicate results was also used to assess representativeness. The close agreement between the duplicate results is considered to indicate that the samples collected are adequately representative of the medium sampled.

1.4 COMPARABILITY

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared to another. For this project, comparability was achieved by collecting samples following the approved QAPP; analyzing the samples using standard analytical methodologies with reporting limits that met screening level criteria to the extent attainable, using common traceable calibration and reference materials; and reporting the analytical results in appropriate and consistent units.

1.5 COMPLETENESS

Completeness is a measure of the number of valid measurements obtained in relation to the total number of measurements planned. Completeness is expressed as the percentage of valid or usable measurements to planned measurements. The data are considered usable as qualified. The completeness for this sampling event was 100% satisfying the QAPP requirement of 90%.

1.6 Sensitivity

The laboratory reported detectable results between the MDL and the limit of quantitation (LOQ). To reflect the higher degree of uncertainty associated with values reported between the MDL and LOQ, these results were qualified as (“J”).

Tarheel Army Missile Plant
Data Validation Summary

Data Package Number: XJ29009
Sampling Event Dates: October 27, 2022

The table below summarizes the data package and sample identifications discussed in this data review.

Field Identification	Sample Type	Laboratory Identification	Matrix	Analyses
				VOCs
SW-1	SA	XJ29009-001	Surface Water	X
SW-1A	SA	XJ29009-002	Surface Water	X
SW-1B	SA	XJ29009-003	Surface Water	X
SW-2	SA	XJ29009-004	Surface Water	X
SW-2A	SA	XJ29009-005	Surface Water	X
SW-3	SA	XJ29009-006	Surface Water	X
SW-3A	SA	XJ29009-007	Surface Water	X
DUP-SW-20221027	FD	XJ29009-008	Surface Water	X
TB-01	TB	XJ29009-009	Water	X

Sample Type: FD- Field Duplicate SA – Sample TB – Trip Blank
Analyses: VOCs (Method 8260D)– Volatile Organic Compounds -- not analyzed

The data review was conducted in accordance with the Tarheel Army Missile Plant Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) (February 2022), Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3, and method requirements.

General Overall Assessment:

_____ Data are usable without qualification.
__X__ Data are usable with qualification
_____ Some or all data are unusable for any purpose (detailed below).

Case Narrative Comments: Any laboratory case narrative comments concerning data qualification were addressed in the table below.

Trace level detects, reported between the method detection limit (DL) and the limit of quantitation (LOQ), have been qualified as estimated (J). The other occurrences of data qualification are covered in the following table.

Review Parameter	Criteria Met?	Comment
Chain of Custody & Sample Receipt	No	The samples were received by Pace Analytical Service, LLC (Pace) West Columbia, South Carolina in good condition and were consistent with the accompanying chain of custody (COC).

Review Parameter	Criteria Met?	Comment
		The cooler temperatures upon receipt was within the recommended ≤6 degrees Celsius (°C) temperature range. Sample TB-01 was received with an air bubble greater than 6 millimeters in the two sample vials. Therefore, the associated results were qualified as estimated (J-/UJ) to reflect the potential low bias.
Holding Times	No	With the exceptions below, the analysis was conducted within the holding time requirements for the methods. SW-2A was reanalyzed outside of holding time due to continuing calibration not meeting acceptance limits for the initial analysis. Only 1,1,2-trichloro-1,2,2-trifluoroethane was reported from the reanalysis and qualified as estimated (J-) to reflect the potential low bias. Sample DUP-SW-20221027 was reanalyzed outside of holding time due to initial calibration not meeting acceptance limits. Data qualification was not necessary as no results were reported from the reanalysis.
Laboratory Blanks • Method Blank	Yes	No target analytes were detected within the method blanks.
Matrix Quality Control • Matrix Spike/ Matrix Spike Duplicate None reported in this data package • Laboratory Duplicate None in this data package	NA	**Matrix Spike/ Matrix Spike Duplicate (MS/MSD)** A MS/MSD was not reported in this data package. **Laboratory Duplicate** A laboratory duplicate was not reported in this data package.
Method Quality Control • Surrogates (VOCs)	Yes	The surrogate recoveries were within the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.3 limits.
Field Quality Control • Trip Blank TB-01 • Field Duplicate SW-2A/DUP-SW-20221027 • Equipment Blank None reported in this package	Yes	**Trip Blank (VOCs Only)** Target analytes were not detected in the trip blank**.** **Field Duplicate** The comparison between results of the field duplicate pairs met the applicable evaluation criteria listed below: • If the parent sample and duplicate values are >5xLOQ, then <30% RPD for water and vapor samples (<50% soil). • If the parent sample or duplicate sample value is <5xLOQ, then absolute difference is <2xLOQ for water (<3.5xLOQ for soil and soil vapor). **Equipment Blank** An equipment was not required for this sampling event.
Reporting limits met?	Yes	No samples were analyzed at a dilution.
Laboratory Control Sample	Yes	One laboratory control sample (LCS) per method per analytical batch was prepared and analyzed. The LCS recoveries were within DoD QSM Version 5.3 limits.

Review Parameter	Criteria Met?	Comment
Other issues identified in the Case Narrative: • Initial Calibration Verification (ICV) • Continuing Calibration Verification (CCV) • Manual Integration	No	For VOCs, the ICV for 1,1,2-trichloro-1,2,2-trifluoroethane exceeded the acceptance criterion associated with samples SW-1, SW-1A, SW-1B, SW-2, SW-3, SW-3A, and TB-01. The associated detected results were qualified as estimate (J+) to reflect the potential high bias. The CCV for acetone exceeded the acceptance limit associated with sample SW-2A. As the potential bias is considered to be high and Acetone was reported as nondetect; data qualification was not considered necessary. The ICV for 1,1,2-trichloro-1,2,2-trifluoroethane exceeded the acceptance limit associated with sample DUP-SW-20221027. The associated detected result was qualified as estimate (J+) to reflect the potential high bias. The following analytes were manually integrated due to incorrect auto integration and flagged M-03 by the laboratory: • SW-1B – Acetone • DUP-SW-20221027 – Vinyl Chloride No further qualification was considered necessary.

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°C – Degrees Celsius
J+ - Estimated with a potential high bias
J-/UJ - Estimated with a potential low bias
% - Percent
CCV – Continuing Calibration Verification
COC – Chain of Custody
DL – Detection Limit
DoD – Department of defense
ICV – Initial Calibration Verification
LCS – Laboratory Control Sample
LOQ – Limit of Quantitation
MS/MSD – Matrix Spike/ Matrix Spike Duplicate
NA – Not Applicable
QSM – Quality Systems Manual
RL – Reporting Limit
RPDs – Relative Percent Differences
VOCs – Volatile Organic Compounds

Appendix N

Laboratory Analytical Reports and Chain-of-Custody Records

Report of Analysis

Terracon Consultants, Inc.
2401 Brentwood Road
Suite 107 I
Raleigh, NC 27604
Attention: Ethan Dinwiddie

Project Name: TAMP

Project Number: 7021P145

Lot Number:**XC22020**

Date Completed:03/29/2022
Revision Date: 05/18/2022

10/25/2022 7:01 PM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.
This report shall not be reproduced, except in its entirety, without the written approval of Pace Analytical Services, LLC.

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
Terracon Consultants, Inc.
Lot Number: XC22020

Report Revision 10/25/22: This PDF report has been revised to report the LOD on the forms. All other sample results are as reported in the original PDF report. This report supersedes and replaces any prior reports issued under this lot number.

Report Revision 5/18/2022: This PDF report has been revised to only update the report narrative. Sample, SW-1A (XC22020-007) was canceled for analysis per client after the sample receipt.

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Additionally, the DoD QSM version 5.3 has been followed for these samples. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs, the DoD QSM, or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Sample Summary

Terracon Consultants, Inc.

Lot Number: XC22020

Project Name: TAMP

Project Number: 7021P145

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	SW-3A	Aqueous	03/21/2022 1245	03/22/2022
002	SW-3	Aqueous	03/21/2022 1315	03/22/2022
003	SW-3B	Aqueous	03/21/2022 1325	03/22/2022
004	SW-2	Aqueous	03/21/2022 1555	03/22/2022
005	SW-2A	Aqueous	03/21/2022 1405	03/22/2022
006	SW-1	Aqueous	03/21/2022 1425	03/22/2022
007	SW-1A	Aqueous	03/21/2022 1450	03/22/2022
008	DUP-SW-01	Aqueous	03/21/2022	03/22/2022
009	TB-01	Aqueous	03/21/2022	03/22/2022

(9 samples)

Detection Summary

Terracon Consultants, Inc.

Lot Number: XC22020

Project Name: TAMP

Project Number: 7021P145

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	SW-3A	Aqueous	Tetrachloroethene	8260D	0.86	J	ug/L	6
001	SW-3A	Aqueous	Trichloroethene	8260D	1.1		ug/L	7
002	SW-3	Aqueous	cis-1,2-Dichloroethene	8260D	1.7		ug/L	8
002	SW-3	Aqueous	Tetrachloroethene	8260D	3.7		ug/L	8
002	SW-3	Aqueous	Trichloroethene	8260D	4.7		ug/L	9
004	SW-2	Aqueous	cis-1,2-Dichloroethene	8260D	2.8		ug/L	12
004	SW-2	Aqueous	Tetrachloroethene	8260D	6.2		ug/L	12
004	SW-2	Aqueous	Trichloroethene	8260D	6.8		ug/L	13
005	SW-2A	Aqueous	cis-1,2-Dichloroethene	8260D	3.1		ug/L	14
005	SW-2A	Aqueous	Tetrachloroethene	8260D	9.5		ug/L	14
005	SW-2A	Aqueous	1,1,2-Trichloro-1,2,2-	8260D	0.50	J	ug/L	14
005	SW-2A	Aqueous	Trichloroethene	8260D	13		ug/L	15
006	SW-1	Aqueous	cis-1,2-Dichloroethene	8260D	4.2		ug/L	16
006	SW-1	Aqueous	Tetrachloroethene	8260D	4.9		ug/L	16
006	SW-1	Aqueous	1,1,2-Trichloro-1,2,2-	8260D	0.52	J	ug/L	16
006	SW-1	Aqueous	Trichloroethene	8260D	11		ug/L	17
008	DUP-SW-01	Aqueous	cis-1,2-Dichloroethene	8260D	2.8		ug/L	18
008	DUP-SW-01	Aqueous	Tetrachloroethene	8260D	6.2		ug/L	18
008	DUP-SW-01	Aqueous	Trichloroethene	8260D	6.8		ug/L	19

(19 detections)

Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XC22020-001**

Description: **SW-3A** Matrix: **Aqueous**

Date Sampled: **03/21/2022 1245** Project Name: **TAMP**

Date Received: **03/22/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/27/2022 0509	BBW		36205

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**0.86**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation | B = Detected in the method blank | E = Quantitation of compound exceeded the calibration range | DL = Detection Limit | Q = Surrogate failure

U = Not detected at or above the LOD | N = Recovery is out of criteria | P = The RPD between two GC columns exceeds 40% | J = Estimated result < LOQ and ≥ DL | L = LCS/LCSD failure

H = Out of holding time | W = Reported on wet weight basis | LOD = Limit of Detection | S = MS/MSD failure

Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XC22020-001**	
Description: **SW-3A**		Matrix: **Aqueous**	
Date Sampled: **03/21/2022 1245**	Project Name: **TAMP**		
Date Received: **03/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/27/2022 0509	BBW		36205

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**1.1**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		105	81-118
Bromofluorobenzene		98	85-114
Toluene-d8		100	89-112
Dibromofluoromethane		102	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XC22020-002**

Description: **SW-3** Matrix: **Aqueous**

Date Sampled: **03/21/2022 1315** Project Name: **TAMP**

Date Received: **03/22/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/27/2022 0532	BBW		36205

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**1.7**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**3.7**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XC22020-002**	
Description: **SW-3**		Matrix: **Aqueous**	
Date Sampled: **03/21/2022 1315**	Project Name: **TAMP**		
Date Received: **03/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/27/2022 0532	BBW		36205

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**4.7**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		105	81-118
Bromofluorobenzene		100	85-114
Toluene-d8		101	89-112
Dibromofluoromethane		103	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XC22020-003**

Description: **SW-3B** Matrix: **Aqueous**

Date Sampled: **03/21/2022 1325** Project Name: **TAMP**

Date Received: **03/22/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/27/2022 0555	BBW		36205

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XC22020-003**	
Description: **SW-3B**		Matrix: **Aqueous**	
Date Sampled: **03/21/2022 1325**	Project Name: **TAMP**		
Date Received: **03/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/27/2022 0555	BBW		36205

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		105	81-118
Bromofluorobenzene		101	85-114
Toluene-d8		101	89-112
Dibromofluoromethane		100	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XC22020-004**

Description: **SW-2** Matrix: **Aqueous**

Date Sampled: **03/21/2022 1555** Project Name: **TAMP**

Date Received: **03/22/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/27/2022 0618	BBW		36205

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**2.8**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**6.2**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XC22020-004**	
Description: **SW-2**		Matrix: **Aqueous**	
Date Sampled: **03/21/2022 1555**	Project Name: **TAMP**		
Date Received: **03/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/27/2022 0618	BBW		36205

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**6.8**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		106	81-118
Bromofluorobenzene		99	85-114
Toluene-d8		102	89-112
Dibromofluoromethane		105	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XC22020-005**

Description: **SW-2A** Matrix: **Aqueous**

Date Sampled: **03/21/2022 1405** Project Name: **TAMP**

Date Received: **03/22/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/27/2022 1947	JWO		36218

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**3.1**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**9.5**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**0.50**	**J**	**1.0**	0.84	**0.42**	**ug/L**	**1**
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XC22020-005**	
Description: **SW-2A**		Matrix: **Aqueous**	
Date Sampled: **03/21/2022 1405**	Project Name: **TAMP**		
Date Received: **03/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/27/2022 1947	JWO		36218

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**13**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		92	81-118
Bromofluorobenzene		96	85-114
Toluene-d8		97	89-112
Dibromofluoromethane		88	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XC22020-006**

Description: **SW-1** Matrix: **Aqueous**

Date Sampled: **03/21/2022 1425** Project Name: **TAMP**

Date Received: **03/22/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/27/2022 2011	JWO		36218

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**4.2**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**4.9**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**0.52**	**J**	**1.0**	0.84	**0.42**	**ug/L**	**1**
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XC22020-006**	
Description: **SW-1**		Matrix: **Aqueous**	
Date Sampled: **03/21/2022 1425**	Project Name: **TAMP**		
Date Received: **03/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/27/2022 2011	JWO		36218

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**11**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		100	81-118
Bromofluorobenzene		101	85-114
Toluene-d8		100	89-112
Dibromofluoromethane		96	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XC22020-008**

Description: **DUP-SW-01** Matrix: **Aqueous**

Date Sampled: **03/21/2022** Project Name: **TAMP**

Date Received: **03/22/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/27/2022 2036	JWO		36218

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**2.8**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**6.2**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XC22020-008**	
Description: **DUP-SW-01**		Matrix: **Aqueous**	
Date Sampled: **03/21/2022**	Project Name: **TAMP**		
Date Received: **03/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/27/2022 2036	JWO		36218

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**6.8**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		101	81-118
Bromofluorobenzene		103	85-114
Toluene-d8		101	89-112
Dibromofluoromethane		98	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XC22020-009**

Description: **TB-01** Matrix: **Aqueous**

Date Sampled: **03/21/2022** Project Name: **TAMP**

Date Received: **03/22/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/27/2022 1857	JWO		36218

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XC22020-009**	
Description: **TB-01**		Matrix: **Aqueous**	
Date Sampled: **03/21/2022**	Project Name: **TAMP**		
Date Received: **03/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/27/2022 1857	JWO		36218

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		99	81-118
Bromofluorobenzene		98	85-114
Toluene-d8		96	89-112
Dibromofluoromethane		96	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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QC Summary

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ36205-001
Batch: 36205
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	03/26/2022 2238
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	03/26/2022 2238
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	03/26/2022 2238
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	03/26/2022 2238
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	03/26/2022 2238
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	03/26/2022 2238
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	03/26/2022 2238
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	03/26/2022 2238
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	03/26/2022 2238
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	03/26/2022 2238
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	03/26/2022 2238
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ36205-001
Batch: 36205
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	03/26/2022 2238

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		99	81-118
Bromofluorobenzene		101	85-114
Toluene-d8		101	89-112
Dibromofluoromethane		101	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ36205-002
Batch: 36205
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	130		1	132	39-160	03/26/2022 2048
Benzene	50	50		1	100	79-120	03/26/2022 2048
Bromodichloromethane	50	51		1	101	79-125	03/26/2022 2048
Bromoform	50	50		1	101	66-130	03/26/2022 2048
Bromomethane (Methyl bromide)	50	49		1	97	53-141	03/26/2022 2048
2-Butanone (MEK)	100	110		1	109	56-143	03/26/2022 2048
Carbon disulfide	50	51		1	101	64-133	03/26/2022 2048
Carbon tetrachloride	50	54		1	108	72-136	03/26/2022 2048
Chlorobenzene	50	49		1	99	82-118	03/26/2022 2048
Chloroethane	50	49		1	98	60-138	03/26/2022 2048
Chloroform	50	50		1	100	79-124	03/26/2022 2048
Chloromethane (Methyl chloride)	50	51		1	102	50-139	03/26/2022 2048
Cyclohexane	50	53		1	106	71-130	03/26/2022 2048
1,2-Dibromo-3-chloropropane (DBCP)	50	49		1	99	62-128	03/26/2022 2048
Dibromochloromethane	50	50		1	101	74-126	03/26/2022 2048
1,2-Dibromoethane (EDB)	50	49		1	98	77-121	03/26/2022 2048
1,2-Dichlorobenzene	50	49		1	97	80-119	03/26/2022 2048
1,3-Dichlorobenzene	50	49		1	99	80-119	03/26/2022 2048
1,4-Dichlorobenzene	50	49		1	98	79-118	03/26/2022 2048
Dichlorodifluoromethane	50	56		1	113	32-152	03/26/2022 2048
1,1-Dichloroethane	50	52		1	104	77-125	03/26/2022 2048
1,2-Dichloroethane	50	49		1	97	73-128	03/26/2022 2048
1,1-Dichloroethene	50	53		1	106	71-131	03/26/2022 2048
cis-1,2-Dichloroethene	50	52		1	103	78-123	03/26/2022 2048
trans-1,2-Dichloroethene	50	52		1	103	75-124	03/26/2022 2048
1,2-Dichloropropane	50	51		1	102	78-122	03/26/2022 2048
cis-1,3-Dichloropropene	50	51		1	103	75-124	03/26/2022 2048
trans-1,3-Dichloropropene	50	50		1	101	73-127	03/26/2022 2048
Ethylbenzene	50	50		1	100	79-121	03/26/2022 2048
2-Hexanone	100	97		1	97	57-139	03/26/2022 2048
Isopropylbenzene	50	50		1	100	72-131	03/26/2022 2048
Methyl acetate	50	53		1	106	56-136	03/26/2022 2048
Methyl tertiary butyl ether (MTBE)	50	52		1	104	71-124	03/26/2022 2048
4-Methyl-2-pentanone	100	100		1	102	67-130	03/26/2022 2048
Methylcyclohexane	50	54		1	108	72-132	03/26/2022 2048
Methylene chloride	50	49		1	99	74-124	03/26/2022 2048
Styrene	50	50		1	100	78-123	03/26/2022 2048
1,1,2,2-Tetrachloroethane	50	49		1	97	71-121	03/26/2022 2048
Tetrachloroethene	50	52		1	104	74-129	03/26/2022 2048
Toluene	50	50		1	101	80-121	03/26/2022 2048
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	53		1	106	70-136	03/26/2022 2048
1,2,4-Trichlorobenzene	50	45		1	90	69-130	03/26/2022 2048
1,1,1-Trichloroethane	50	52		1	104	74-131	03/26/2022 2048
1,1,2-Trichloroethane	50	50		1	100	80-119	03/26/2022 2048

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ36205-002
Batch: 36205
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	51		1	102	79-123	03/26/2022 2048
Trichlorofluoromethane	50	51		1	103	65-141	03/26/2022 2048
Vinyl chloride	50	52		1	105	58-137	03/26/2022 2048
Xylenes (total)	100	100		1	100	79-121	03/26/2022 2048

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		100	81-118
Bromofluorobenzene		97	85-114
Toluene-d8		101	89-112
Dibromofluoromethane		101	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ36218-001
Batch: 36218
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	03/27/2022 1720
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	03/27/2022 1720
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	03/27/2022 1720
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	03/27/2022 1720
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	03/27/2022 1720
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	03/27/2022 1720
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	03/27/2022 1720
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	03/27/2022 1720
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	03/27/2022 1720
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	03/27/2022 1720
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	03/27/2022 1720
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ36218-001
Batch: 36218
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	03/27/2022 1720

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		99	81-118
Bromofluorobenzene		103	85-114
Toluene-d8		101	89-112
Dibromofluoromethane		96	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ36218-002
Batch: 36218
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	110		1	114	39-160	03/27/2022 1631
Benzene	50	52		1	105	79-120	03/27/2022 1631
Bromodichloromethane	50	47		1	95	79-125	03/27/2022 1631
Bromoform	50	46		1	93	66-130	03/27/2022 1631
Bromomethane (Methyl bromide)	50	54		1	107	53-141	03/27/2022 1631
2-Butanone (MEK)	100	110		1	114	56-143	03/27/2022 1631
Carbon disulfide	50	61		1	122	64-133	03/27/2022 1631
Carbon tetrachloride	50	51		1	103	72-136	03/27/2022 1631
Chlorobenzene	50	50		1	100	82-118	03/27/2022 1631
Chloroethane	50	50		1	101	60-138	03/27/2022 1631
Chloroform	50	51		1	101	79-124	03/27/2022 1631
Chloromethane (Methyl chloride)	50	51		1	101	50-139	03/27/2022 1631
Cyclohexane	50	53		1	106	71-130	03/27/2022 1631
1,2-Dibromo-3-chloropropane (DBCP)	50	48		1	96	62-128	03/27/2022 1631
Dibromochloromethane	50	49		1	97	74-126	03/27/2022 1631
1,2-Dibromoethane (EDB)	50	50		1	100	77-121	03/27/2022 1631
1,2-Dichlorobenzene	50	50		1	100	80-119	03/27/2022 1631
1,3-Dichlorobenzene	50	50		1	99	80-119	03/27/2022 1631
1,4-Dichlorobenzene	50	49		1	98	79-118	03/27/2022 1631
Dichlorodifluoromethane	50	56		1	112	32-152	03/27/2022 1631
1,1-Dichloroethane	50	53		1	106	77-125	03/27/2022 1631
1,2-Dichloroethane	50	50		1	99	73-128	03/27/2022 1631
1,1-Dichloroethene	50	62		1	123	71-131	03/27/2022 1631
cis-1,2-Dichloroethene	50	53		1	106	78-123	03/27/2022 1631
trans-1,2-Dichloroethene	50	55		1	111	75-124	03/27/2022 1631
1,2-Dichloropropane	50	49		1	98	78-122	03/27/2022 1631
cis-1,3-Dichloropropene	50	49		1	98	75-124	03/27/2022 1631
trans-1,3-Dichloropropene	50	48		1	96	73-127	03/27/2022 1631
Ethylbenzene	50	51		1	101	79-121	03/27/2022 1631
2-Hexanone	100	93		1	93	57-139	03/27/2022 1631
Isopropylbenzene	50	52		1	104	72-131	03/27/2022 1631
Methyl acetate	50	58		1	117	56-136	03/27/2022 1631
Methyl tertiary butyl ether (MTBE)	50	51		1	102	71-124	03/27/2022 1631
4-Methyl-2-pentanone	100	91		1	91	67-130	03/27/2022 1631
Methylcyclohexane	50	54		1	109	72-132	03/27/2022 1631
Methylene chloride	50	58		1	116	74-124	03/27/2022 1631
Styrene	50	51		1	103	78-123	03/27/2022 1631
1,1,2,2-Tetrachloroethane	50	52		1	103	71-121	03/27/2022 1631
Tetrachloroethene	50	51		1	103	74-129	03/27/2022 1631
Toluene	50	52		1	103	80-121	03/27/2022 1631
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	59		1	117	70-136	03/27/2022 1631
1,2,4-Trichlorobenzene	50	44		1	89	69-130	03/27/2022 1631
1,1,1-Trichloroethane	50	50		1	99	74-131	03/27/2022 1631
1,1,2-Trichloroethane	50	51		1	101	80-119	03/27/2022 1631

LOQ = Limit of Quantitation
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* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ36218-002
Batch: 36218
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	50		1	100	79-123	03/27/2022 1631
Trichlorofluoromethane	50	54		1	107	65-141	03/27/2022 1631
Vinyl chloride	50	54		1	107	58-137	03/27/2022 1631
Xylenes (total)	100	100		1	102	79-121	03/27/2022 1631

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		103	81-118
Bromofluorobenzene		107	85-114
Toluene-d8		106	89-112
Dibromofluoromethane		103	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
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* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Chain of Custody
and
Miscellaneous Documents

Pace Analytical®

PACE ANALYTICAL SERVICES, LLC
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.pacelabs.com

Number 132231

Client: Terracon Consultants Inc	Report to Contact: Ethan.Dinwiddie@Terracon.com	Telephone No. / E-mail: ←	Quote No.: 25322
Address: 2401 Brentwood Rd Suite 107	Sampler's Signature: X [signature]	Analysis (Attach list if more space is needed)	Page 1 of 1
City: Raleigh; State: NC; Zip Code:	Printed Name: Ethan Dinwiddie		XC22020
Project Name: TAMP			CSD
Project No.: 7021P145	P.O. No.		

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	G=Grab C=Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	No of Containers by Preservative Type: Unpres	HNO3	HNO3	NaOH	NaOH	5035 Kit	Field Filtered	VOCs 8260	Remarks / Cooler I.D.
SW-3A	3/21/22	1245	G	X						3				X	
SW-3	3/21	1315	G	X						3				X	
SW-3B	3/21	1325	G	X						3				X	
SW-2	3/21	1555	G	X						3				X	
SW-2A	3/21	1405	G	X						3				X	
SW-1	3/21	1425	G	X						3				X	
SW-1A	3/21	1450	G	X						3				X	
DUP-SW-01	3/21	—	G	X						3				X	
TB-01	3/21	—	G	X						2				X	

Turn Around Time Required (Prior lab approval required for expedited TAT): X Standard ☐ Rush (Specify)

Sample Disposal: ☐ Return to Client ☒ Disposal by Lab

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☒ Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by: [signature]	3/21/22	1850	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by: Fedex	3/22/22	0925	4. Laboratory received by: [signature]	3/22/22	0925

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Circle) Yes No Ice Pack
Receipt Temp. 2.1 °C
Temp Blank ☒ Y ☐ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME003N2-01

PaceAnalytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: Terracon

Cooler Inspected by/date: KNR / 03/22/2022 Lot #: XC22020

Means of receipt: ☐ Pace ☐ Client ☐ UPS ☑ FedEx ☐ Other:

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

2.1 / 2.1 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☑ Yes	☐ No	☐ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☑ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote #

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA. Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (*if #19 is no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: KNR Date: 03/22/2022

Comments:

Report of Analysis

Terracon Consultants, Inc.
2401 Brentwood Road
Suite 107 I
Raleigh, NC 27604
Attention: Ethan Dinwiddie

Project Name: TAMP

Project Number: 7021P145

Lot Number:**XF22026**

Date Completed:07/11/2022

07/12/2022 4:13 PM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.
This report shall not be reproduced, except in its entirety, without the written approval of Pace Analytical Services, LLC.

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
Terracon Consultants, Inc.
Lot Number: XF22026

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Additionally, the DoD QSM version 5.3 has been followed for these samples. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs, the DoD QSM, or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

Where applicable, all soil sample results (including LOQ and DL if requested) are corrected for dry weight unless flagged with a "W" qualifier.

VOA 8260D
The initial calibration verification (ICV) associated with batch 46389 and samples XF22026-001, XF22026-002, XF22026-003, XF22026-004, XF22026-005, XF22026-006, XF22026-007, and XF22026-008 exceeded control criteria for Dichlorodifluoromethane (128%). The data has been reported.

The continuing calibration verification (CCV) associated with batch 46389 and samples XF22026-001, XF22026-002, XF22026-003, XF22026-004, XF22026-005, XF22026-006, XF22026-007, and XF22026-008 for analytes: Dichlorodifluoromethane (66%) and Chloromethane (37%) recovered above the upper control limit. The samples associated with this CCV were non-detect for the affected analytes; therefore, the data has been reported.

The laboratory control sample (LCS) for analytical batch 46389 exceeded acceptance criteria for the following analytes: Dichlorodifluoromethane (166%) and Chloromethane (137%). These analytes were biased high and were not detected in the associated samples: XF22026-001, XF22026-002, XF22026-003, XF22026-004, XF22026-005, XF22026-006, XF22026-007, and XF22026-008.

The continuing calibration verification (CCV) associated with batch 46389 and samples XF22026-001, XF22026-002, XF22026-004, XF22026-005, XF22026-006, XF22026-007, and XF22026-008 for analytes: Vinyl chloride (34%) recovered above the upper control limit. The samples associated with this CCV were non-detect for the affected analytes; therefore, the data has been reported.

XF22026-001 (RI-SB-01 (4-6)) (Run 1) (Analysis Batch 46389) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF22026-002 (RI-SB-01 (10-12)) (Run 1) (Analysis Batch 46389) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF22026-003 (RI-SB-02 (4-6)) (Run 1) (Analysis Batch 46389) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF22026-004 (RI-SB-02 (6-8)) (Run 1) (Analysis Batch 46389) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF22026-005 (RI-SB-03 (6-8)) (Run 1) (Analysis Batch 46389) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF22026-006 (RI-SB-03 (16-18)) (Run 1) (Analysis Batch 46389) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF22026-007 (RI-SB-04 (6-8)) (Run 1) (Analysis Batch 46389) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF22026-008 (RI-SB-04 (14-16)) (Run 1) (Analysis Batch 46389) TCL VOCs (OLM04.3) (DOD QSM 5.3)

The continuing calibration verification (CCV) associated with batch 46673 and samples XF22026-009, XF22026-010, XF22026-011, XF22026-012, XF22026-013, and XF22026-015 for analyte(s): Dichlorodifluoromethane (51%), Chloromethane (42%), Bromomethane (24%), and Chloroethane (23%) recovered above the upper control limit. The samples associated with this CCV were non-detect for the affected analytes; therefore, the data has been reported.

The continuing calibration verification (CCV) and laboratory control sample (LCS) associated with samples XF22026-009, XF22026-010, XF22026-011, XF22026-012, XF22026-015 for analyte(s): Vinyl Chloride (43% and 143%) recovered above the upper control limit. The samples associated with this CCV and LCS were non-detect for the affected analytes; therefore, the data has been reported.

The laboratory control sample (LCS) for analytical batch 46673 exceeded acceptance criteria for the following analytes: Dichlorodifluoromethane (151%) and Chloromethane (142%). These analytes were biased high and were not detected in the associated samples: XF22026-009, XF22026-010, XF22026-011, XF22026-012, XF22026-013, and XF22026-015.

The initial calibration verification (ICV) associated with 46673 samples XF22026-009, XF22026-010, XF22026-011, XF22026-012, XF22026-013, XF22026-015 exceeded control criteria for Dichlorodifluoromethane (128%). The data has been reported.

The closing continuing calibration verification (CCV) associated with batch 46673 and samples XF22026-009, XF22026-010, XF22026-011, XF22026-012, XF22026-013, XF22026-015 for Chloromethane (53%) recovered above the upper control limit. The samples associated with this closing CCV were non-detect for the affected analyte; therefore, the data has been reported.

XF22026-009 (RI-SB-05 (2-4)) (Run 1) (Analysis Batch 46673) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF22026-010 (RI-SB-05 (10-12)) (Run 1) (Analysis Batch 46673) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF22026-011 (RI-SB-06 (4-6)) (Run 1) (Analysis Batch 46673) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF22026-012 (RI-SB-06 (16-18)) (Run 1) (Analysis Batch 46673) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF22026-013 (RI-SB-02 (2-4)) (Run 1) (Analysis Batch 46673) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF22026-015 (DUP-SB-01) (Run 1) (Analysis Batch 46673) TCL VOCs (OLM04.3) (DOD QSM 5.3)

The continuing calibration verification (CCV) associated with sample XF22026-014 (TB-01) for Acetone recovered above the upper control limit. This sample associated with this CCV was non-detect for Acetone; therefore, the data has been reported.

Insufficient sample volume was provided to perform matrix spike/matrix spike duplicate (MS/MSD) for analytical batch 46981 & 46849. An LCS/LCSD was run in lieu of an MS/MSD.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

PACE ANALYTICAL SERVICES, LLC

Sample Summary
Terracon Consultants, Inc.
Lot Number: XF22026
Project Name: TAMP
Project Number: 7021P145

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	RI-SB-01 (4-6)	Solid	06/20/2022 1750	06/22/2022
002	RI-SB-01 (10-12)	Solid	06/20/2022 1755	06/22/2022
003	RI-SB-02 (4-6)	Solid	06/20/2022 1720	06/22/2022
004	RI-SB-02 (6-8)	Solid	06/20/2022 1725	06/22/2022
005	RI-SB-03 (6-8)	Solid	06/20/2022 1845	06/22/2022
006	RI-SB-03 (16-18)	Solid	06/20/2022 1830	06/22/2022
007	RI-SB-04 (6-8)	Solid	06/20/2022 1910	06/22/2022
008	RI-SB-04 (14-16)	Solid	06/20/2022 1920	06/22/2022
009	RI-SB-05 (2-4)	Solid	06/20/2022 1935	06/22/2022
010	RI-SB-05 (10-12)	Solid	06/20/2022 1945	06/22/2022
011	RI-SB-06 (4-6)	Solid	06/20/2022 1930	06/22/2022
012	RI-SB-06 (16-18)	Solid	06/20/2022 1935	06/22/2022
013	RI-SB-02 (2-4)	Solid	06/20/2022 1710	06/22/2022
014	TB-01	Aqueous	06/21/2022	06/22/2022
015	DUP-SB-01	Solid	06/21/2022	06/22/2022

(15 samples)

Detection Summary

Terracon Consultants, Inc.

Lot Number: XF22026

Project Name: TAMP

Project Number: 7021P145

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	RI-SB-01 (4-6)	Solid	Acetone	8260D	0.014	J	mg/kg	6
003	RI-SB-02 (4-6)	Solid	Acetone	8260D	0.019	J	mg/kg	10
003	RI-SB-02 (4-6)	Solid	cis-1,2-Dichloroethene	8260D	0.0091		mg/kg	10
003	RI-SB-02 (4-6)	Solid	Trichloroethene	8260D	0.021		mg/kg	11
003	RI-SB-02 (4-6)	Solid	Vinyl chloride	8260D	0.035		mg/kg	11
004	RI-SB-02 (6-8)	Solid	Acetone	8260D	0.11		mg/kg	12
004	RI-SB-02 (6-8)	Solid	cis-1,2-Dichloroethene	8260D	0.033		mg/kg	12
004	RI-SB-02 (6-8)	Solid	Trichloroethene	8260D	0.82		mg/kg	13
005	RI-SB-03 (6-8)	Solid	Acetone	8260D	0.014	J	mg/kg	14
005	RI-SB-03 (6-8)	Solid	cis-1,2-Dichloroethene	8260D	0.013		mg/kg	14
005	RI-SB-03 (6-8)	Solid	Trichloroethene	8260D	0.0027	J	mg/kg	15
006	RI-SB-03 (16-18)	Solid	cis-1,2-Dichloroethene	8260D	0.099		mg/kg	16
006	RI-SB-03 (16-18)	Solid	trans-1,2-Dichloroethene	8260D	0.0061		mg/kg	16
006	RI-SB-03 (16-18)	Solid	Tetrachloroethene	8260D	0.68		mg/kg	16
006	RI-SB-03 (16-18)	Solid	Trichloroethene	8260D	0.92		mg/kg	17
007	RI-SB-04 (6-8)	Solid	cis-1,2-Dichloroethene	8260D	0.0023	J	mg/kg	18
007	RI-SB-04 (6-8)	Solid	Trichloroethene	8260D	0.0094		mg/kg	19
008	RI-SB-04 (14-16)	Solid	cis-1,2-Dichloroethene	8260D	0.0085		mg/kg	20
008	RI-SB-04 (14-16)	Solid	Trichloroethene	8260D	0.068		mg/kg	21
009	RI-SB-05 (2-4)	Solid	Tetrachloroethene	8260D	0.003	J	mg/kg	22
009	RI-SB-05 (2-4)	Solid	Trichloroethene	8260D	0.011		mg/kg	23
012	RI-SB-06 (16-18)	Solid	cis-1,2-Dichloroethene	8260D	0.0027	J	mg/kg	28
012	RI-SB-06 (16-18)	Solid	Tetrachloroethene	8260D	0.011		mg/kg	28
012	RI-SB-06 (16-18)	Solid	Trichloroethene	8260D	0.0099		mg/kg	29
013	RI-SB-02 (2-4)	Solid	Acetone	8260D	0.11		mg/kg	30
013	RI-SB-02 (2-4)	Solid	2-Butanone (MEK)	8260D	0.018	J	mg/kg	30
013	RI-SB-02 (2-4)	Solid	cis-1,2-Dichloroethene	8260D	0.0052	J	mg/kg	30
013	RI-SB-02 (2-4)	Solid	Methylcyclohexane	8260D	0.0028	J	mg/kg	30
013	RI-SB-02 (2-4)	Solid	Vinyl chloride	8260D	0.021		mg/kg	31
013	RI-SB-02 (2-4)	Solid	Xylenes (total)	8260D	0.0066	J	mg/kg	31
015	DUP-SB-01	Solid	cis-1,2-Dichloroethene	8260D	0.011		mg/kg	34
015	DUP-SB-01	Solid	1,1,2-Trichloro-1,2,2-	8260D	0.0084		mg/kg	34
015	DUP-SB-01	Solid	Trichloroethene	8260D	0.39		mg/kg	35

(33 detections)

Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**			Laboratory ID: **XF22026-001**
Description: **RI-SB-01 (4-6)**			Matrix: **Solid**
Date Sampled: **06/20/2022 1750**	Project Name: **TAMP**		% Solids: **44.6** **06/22/2022 2358**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1604	JM1		46389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**0.014**	**J**	**0.030**	**0.012**	**mg/Kg**	**1**
Benzene	71-43-2	8260D	ND		0.0074	0.0030	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	ND		0.0074	0.0030	mg/Kg	1
Bromoform	75-25-2	8260D	ND		0.0074	0.0030	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.015	0.0044	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	ND		0.030	0.0059	mg/Kg	1
Carbon disulfide	75-15-0	8260D	ND		0.0074	0.0030	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	ND		0.0074	0.0030	mg/Kg	1
Chlorobenzene	108-90-7	8260D	ND		0.0074	0.0030	mg/Kg	1
Chloroethane	75-00-3	8260D	ND		0.0074	0.0030	mg/Kg	1
Chloroform	67-66-3	8260D	ND		0.0074	0.0030	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND	L	0.015	0.0044	mg/Kg	1
Cyclohexane	110-82-7	8260D	ND		0.0074	0.0030	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.0074	0.0030	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	ND		0.0074	0.0030	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.0074	0.0030	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.0074	0.0030	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.0074	0.0030	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.0074	0.0030	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	ND	L	0.015	0.0044	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.0074	0.0030	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.0074	0.0030	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.0074	0.0030	mg/Kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.0074	0.0030	mg/Kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.0074	0.0030	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.0074	0.0030	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.0074	0.0030	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.0074	0.0030	mg/Kg	1
Ethylbenzene	100-41-4	8260D	ND		0.0074	0.0030	mg/Kg	1
2-Hexanone	591-78-6	8260D	ND		0.015	0.0059	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	ND		0.0074	0.0030	mg/Kg	1
Methyl acetate	79-20-9	8260D	ND		0.0074	0.0030	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.0074	0.0030	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		0.015	0.0059	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	ND		0.0074	0.0030	mg/Kg	1
Methylene chloride	75-09-2	8260D	ND		0.0074	0.0030	mg/Kg	1
Styrene	100-42-5	8260D	ND		0.0074	0.0030	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.0074	0.0030	mg/Kg	1
Tetrachloroethene	127-18-4	8260D	ND		0.0074	0.0030	mg/Kg	1
Toluene	108-88-3	8260D	ND		0.0074	0.0030	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		0.0074	0.0030	mg/Kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.0074	0.0030	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.0074	0.0030	mg/Kg	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.0074	0.0030	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22026-001**	
Description: **RI-SB-01 (4-6)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1750**	Project Name: **TAMP**	% Solids: **44.6**	**06/22/2022 2358**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1604	JM1		46389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.0074	0.0030	mg/Kg	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.0074	0.0030	mg/Kg	1
Vinyl chloride	75-01-4	8260D	ND		0.015	0.0044	mg/Kg	1
Xylenes (total)	1330-20-7	8260D	ND		0.015	0.0059	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		106	79-119
Dibromofluoromethane		99	78-119
1,2-Dichloroethane-d4		100	71-136
Toluene-d8		104	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**			Laboratory ID: **XF22026-002**
Description: **RI-SB-01 (10-12)**			Matrix: **Solid**
Date Sampled: **06/20/2022 1755**	Project Name: **TAMP**		% Solids: **78.7** **06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1627	JM1		46389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		0.018	0.0073	mg/Kg	1
Benzene	71-43-2	8260D	ND		0.0045	0.0018	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	ND		0.0045	0.0018	mg/Kg	1
Bromoform	75-25-2	8260D	ND		0.0045	0.0018	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.0091	0.0027	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	ND		0.018	0.0036	mg/Kg	1
Carbon disulfide	75-15-0	8260D	ND		0.0045	0.0018	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	ND		0.0045	0.0018	mg/Kg	1
Chlorobenzene	108-90-7	8260D	ND		0.0045	0.0018	mg/Kg	1
Chloroethane	75-00-3	8260D	ND		0.0045	0.0018	mg/Kg	1
Chloroform	67-66-3	8260D	ND		0.0045	0.0018	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND	L	0.0091	0.0027	mg/Kg	1
Cyclohexane	110-82-7	8260D	ND		0.0045	0.0018	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.0045	0.0018	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	ND		0.0045	0.0018	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.0045	0.0018	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.0045	0.0018	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.0045	0.0018	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.0045	0.0018	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	ND	L	0.0091	0.0027	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.0045	0.0018	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.0045	0.0018	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.0045	0.0018	mg/Kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.0045	0.0018	mg/Kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.0045	0.0018	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.0045	0.0018	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.0045	0.0018	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.0045	0.0018	mg/Kg	1
Ethylbenzene	100-41-4	8260D	ND		0.0045	0.0018	mg/Kg	1
2-Hexanone	591-78-6	8260D	ND		0.0091	0.0036	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	ND		0.0045	0.0018	mg/Kg	1
Methyl acetate	79-20-9	8260D	ND		0.0045	0.0018	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.0045	0.0018	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		0.0091	0.0036	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	ND		0.0045	0.0018	mg/Kg	1
Methylene chloride	75-09-2	8260D	ND		0.0045	0.0018	mg/Kg	1
Styrene	100-42-5	8260D	ND		0.0045	0.0018	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.0045	0.0018	mg/Kg	1
Tetrachloroethene	127-18-4	8260D	ND		0.0045	0.0018	mg/Kg	1
Toluene	108-88-3	8260D	ND		0.0045	0.0018	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		0.0045	0.0018	mg/Kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.0045	0.0018	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.0045	0.0018	mg/Kg	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.0045	0.0018	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22026-002**	
Description: **RI-SB-01 (10-12)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1755**	Project Name: **TAMP**	% Solids: **78.7**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1627	JM1		46389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.0045	0.0018	mg/Kg	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.0045	0.0018	mg/Kg	1
Vinyl chloride	75-01-4	8260D	ND		0.0091	0.0027	mg/Kg	1
Xylenes (total)	1330-20-7	8260D	ND		0.0091	0.0036	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		113	79-119
Dibromofluoromethane		99	78-119
1,2-Dichloroethane-d4		107	71-136
Toluene-d8		106	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22026-003**	
Description: **RI-SB-02 (4-6)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1720**	Project Name: **TAMP**	% Solids: **77.6**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1650	JM1		46389
2	5035	8260D	1	07/04/2022 1831	JM1		46981

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**0.019**	**J**	**0.021**	**0.0083**	**mg/Kg**	**1**
Benzene	71-43-2	8260D	ND		0.0052	0.0021	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	ND		0.0052	0.0021	mg/Kg	1
Bromoform	75-25-2	8260D	ND		0.0052	0.0021	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.010	0.0031	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	ND		0.021	0.0042	mg/Kg	1
Carbon disulfide	75-15-0	8260D	ND		0.0052	0.0021	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	ND		0.0052	0.0021	mg/Kg	1
Chlorobenzene	108-90-7	8260D	ND		0.0052	0.0021	mg/Kg	1
Chloroethane	75-00-3	8260D	ND		0.0052	0.0021	mg/Kg	1
Chloroform	67-66-3	8260D	ND		0.0052	0.0021	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND	L	0.010	0.0031	mg/Kg	1
Cyclohexane	110-82-7	8260D	ND		0.0052	0.0021	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.0052	0.0021	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	ND		0.0052	0.0021	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.0052	0.0021	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.0052	0.0021	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.0052	0.0021	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.0052	0.0021	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	ND	L	0.010	0.0031	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.0052	0.0021	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.0052	0.0021	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.0052	0.0021	mg/Kg	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**0.0091**		**0.0052**	**0.0021**	**mg/Kg**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.0052	0.0021	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.0052	0.0021	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.0052	0.0021	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.0052	0.0021	mg/Kg	1
Ethylbenzene	100-41-4	8260D	ND		0.0052	0.0021	mg/Kg	1
2-Hexanone	591-78-6	8260D	ND		0.010	0.0042	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	ND		0.0052	0.0021	mg/Kg	1
Methyl acetate	79-20-9	8260D	ND		0.0052	0.0021	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.0052	0.0021	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		0.010	0.0042	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	ND		0.0052	0.0021	mg/Kg	1
Methylene chloride	75-09-2	8260D	ND		0.0052	0.0021	mg/Kg	1
Styrene	100-42-5	8260D	ND		0.0052	0.0021	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.0052	0.0021	mg/Kg	1
Tetrachloroethene	127-18-4	8260D	ND		0.0052	0.0021	mg/Kg	1
Toluene	108-88-3	8260D	ND		0.0052	0.0021	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		0.0052	0.0021	mg/Kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.0052	0.0021	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.0052	0.0021	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22026-003**	
Description: **RI-SB-02 (4-6)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1720**	Project Name: **TAMP**	% Solids: **77.6**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1650	JM1		46389
2	5035	8260D	1	07/04/2022 1831	JM1		46981

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.0052	0.0021	mg/Kg	1
Trichloroethene	**79-01-6**	**8260D**	**0.021**		**0.0052**	**0.0021**	**mg/Kg**	**1**
Trichlorofluoromethane	75-69-4	8260D	ND		0.0052	0.0021	mg/Kg	1
Vinyl chloride	**75-01-4**	**8260D**	**0.035**		**0.011**	**0.0032**	**mg/Kg**	**2**
Xylenes (total)	1330-20-7	8260D	ND		0.010	0.0042	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		109	79-119		96	79-119
Dibromofluoromethane		101	78-119		99	78-119
1,2-Dichloroethane-d4		110	71-136		99	71-136
Toluene-d8		102	85-116		101	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**			Laboratory ID: **XF22026-004**
Description: **RI-SB-02 (6-8)**			Matrix: **Solid**
Date Sampled: **06/20/2022 1725**	Project Name: **TAMP**		% Solids: **74.8** **06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260D	1	06/28/2022 1713	JM1		46389	
2	5035 High	8260D	1	07/01/2022 1254	JM1		46842	6.05

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**0.11**		**0.020**	**0.0081**	**mg/Kg**	**1**
Benzene	71-43-2	8260D	ND		0.0051	0.0020	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	ND		0.0051	0.0020	mg/Kg	1
Bromoform	75-25-2	8260D	ND		0.0051	0.0020	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.010	0.0030	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	ND		0.020	0.0040	mg/Kg	1
Carbon disulfide	75-15-0	8260D	ND		0.0051	0.0020	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	ND		0.0051	0.0020	mg/Kg	1
Chlorobenzene	108-90-7	8260D	ND		0.0051	0.0020	mg/Kg	1
Chloroethane	75-00-3	8260D	ND		0.0051	0.0020	mg/Kg	1
Chloroform	67-66-3	8260D	ND		0.0051	0.0020	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND	L	0.010	0.0030	mg/Kg	1
Cyclohexane	110-82-7	8260D	ND		0.0051	0.0020	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.0051	0.0020	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	ND		0.0051	0.0020	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.0051	0.0020	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.0051	0.0020	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.0051	0.0020	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.0051	0.0020	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	ND	L	0.010	0.0030	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.0051	0.0020	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.0051	0.0020	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.0051	0.0020	mg/Kg	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**0.033**		**0.0051**	**0.0020**	**mg/Kg**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.0051	0.0020	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.0051	0.0020	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.0051	0.0020	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.0051	0.0020	mg/Kg	1
Ethylbenzene	100-41-4	8260D	ND		0.0051	0.0020	mg/Kg	1
2-Hexanone	591-78-6	8260D	ND		0.010	0.0040	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	ND		0.0051	0.0020	mg/Kg	1
Methyl acetate	79-20-9	8260D	ND		0.0051	0.0020	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.0051	0.0020	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		0.010	0.0040	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	ND		0.0051	0.0020	mg/Kg	1
Methylene chloride	75-09-2	8260D	ND		0.0051	0.0020	mg/Kg	1
Styrene	100-42-5	8260D	ND		0.0051	0.0020	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.0051	0.0020	mg/Kg	1
Tetrachloroethene	127-18-4	8260D	ND		0.0051	0.0020	mg/Kg	1
Toluene	108-88-3	8260D	ND		0.0051	0.0020	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		0.0051	0.0020	mg/Kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.0051	0.0020	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.0051	0.0020	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22026-004**	
Description: **RI-SB-02 (6-8)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1725**	Project Name: **TAMP**	% Solids: **74.8**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260D	1	06/28/2022 1713	JM1		46389	
2	5035 High	8260D	1	07/01/2022 1254	JM1		46842	6.05

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.0051	0.0020	mg/Kg	1
Trichloroethene	**79-01-6**	**8260D**	**0.82**		**0.36**	**0.14**	**mg/Kg**	**2**
Trichlorofluoromethane	75-69-4	8260D	ND		0.0051	0.0020	mg/Kg	1
Vinyl chloride	75-01-4	8260D	ND		0.010	0.0030	mg/Kg	1
Xylenes (total)	1330-20-7	8260D	ND		0.010	0.0040	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		106	79-119		103	79-119
Dibromofluoromethane		98	78-119		101	78-119
1,2-Dichloroethane-d4		99	71-136		106	71-136
Toluene-d8		105	85-116		102	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22026-005**	
Description: **RI-SB-03 (6-8)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1845**	Project Name: **TAMP**	% Solids: **74.0**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1737	JM1		46389
2	5035	8260D	1	07/01/2022 1754	JM1		46849

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**0.014**	**J**	**0.024**	**0.0095**	**mg/Kg**	**1**
Benzene	71-43-2	8260D	ND		0.0059	0.0024	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	ND		0.0059	0.0024	mg/Kg	1
Bromoform	75-25-2	8260D	ND		0.0059	0.0024	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.012	0.0036	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	ND		0.024	0.0047	mg/Kg	1
Carbon disulfide	75-15-0	8260D	ND		0.0059	0.0024	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	ND		0.0059	0.0024	mg/Kg	1
Chlorobenzene	108-90-7	8260D	ND		0.0059	0.0024	mg/Kg	1
Chloroethane	75-00-3	8260D	ND		0.0059	0.0024	mg/Kg	1
Chloroform	67-66-3	8260D	ND		0.0059	0.0024	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND	L	0.012	0.0036	mg/Kg	1
Cyclohexane	110-82-7	8260D	ND		0.0059	0.0024	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.0059	0.0024	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	ND		0.0059	0.0024	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.0059	0.0024	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.0059	0.0024	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.0059	0.0024	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.0059	0.0024	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	ND	L	0.012	0.0036	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.0059	0.0024	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.0059	0.0024	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.0059	0.0024	mg/Kg	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**0.013**		**0.0059**	**0.0024**	**mg/Kg**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.0059	0.0024	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.0059	0.0024	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.0059	0.0024	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.0059	0.0024	mg/Kg	1
Ethylbenzene	100-41-4	8260D	ND		0.0059	0.0024	mg/Kg	1
2-Hexanone	591-78-6	8260D	ND		0.012	0.0047	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	ND		0.0059	0.0024	mg/Kg	1
Methyl acetate	79-20-9	8260D	ND		0.0059	0.0024	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.0059	0.0024	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		0.012	0.0047	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	ND		0.0059	0.0024	mg/Kg	1
Methylene chloride	75-09-2	8260D	ND		0.0059	0.0024	mg/Kg	1
Styrene	100-42-5	8260D	ND		0.0059	0.0024	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.0059	0.0024	mg/Kg	1
Tetrachloroethene	127-18-4	8260D	ND		0.0059	0.0024	mg/Kg	1
Toluene	108-88-3	8260D	ND		0.0059	0.0024	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		0.0059	0.0024	mg/Kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.0059	0.0024	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.0059	0.0024	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22026-005**	
Description: **RI-SB-03 (6-8)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1845**	Project Name: **TAMP**	% Solids: **74.0**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1737	JM1		46389
2	5035	8260D	1	07/01/2022 1754	JM1		46849

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.0059	0.0024	mg/Kg	1
Trichloroethene	**79-01-6**	**8260D**	**0.0027**	**J**	**0.0056**	**0.0022**	**mg/Kg**	**2**
Trichlorofluoromethane	75-69-4	8260D	ND		0.0059	0.0024	mg/Kg	1
Vinyl chloride	75-01-4	8260D	ND		0.012	0.0036	mg/Kg	1
Xylenes (total)	1330-20-7	8260D	ND		0.012	0.0047	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		103	79-119		100	79-119
Dibromofluoromethane		92	78-119		100	78-119
1,2-Dichloroethane-d4		99	71-136		105	71-136
Toluene-d8		108	85-116		104	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22026-006**	
Description: **RI-SB-03 (16-18)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1830**	Project Name: **TAMP**	% Solids: **72.0**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260D	1	06/28/2022 1759	JM1		46389	
2	5035 High	8260D	1	07/01/2022 1317	JM1		46842	6.12

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		0.024	0.0096	mg/Kg	1
Benzene	71-43-2	8260D	ND		0.0060	0.0024	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	ND		0.0060	0.0024	mg/Kg	1
Bromoform	75-25-2	8260D	ND		0.0060	0.0024	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.012	0.0036	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	ND		0.024	0.0048	mg/Kg	1
Carbon disulfide	75-15-0	8260D	ND		0.0060	0.0024	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	ND		0.0060	0.0024	mg/Kg	1
Chlorobenzene	108-90-7	8260D	ND		0.0060	0.0024	mg/Kg	1
Chloroethane	75-00-3	8260D	ND		0.0060	0.0024	mg/Kg	1
Chloroform	67-66-3	8260D	ND		0.0060	0.0024	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND	L	0.012	0.0036	mg/Kg	1
Cyclohexane	110-82-7	8260D	ND		0.0060	0.0024	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.0060	0.0024	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	ND		0.0060	0.0024	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.0060	0.0024	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.0060	0.0024	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.0060	0.0024	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.0060	0.0024	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	ND	L	0.012	0.0036	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.0060	0.0024	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.0060	0.0024	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.0060	0.0024	mg/Kg	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**0.099**		**0.0060**	**0.0024**	**mg/Kg**	**1**
trans-1,2-Dichloroethene	**156-60-5**	**8260D**	**0.0061**		**0.0060**	**0.0024**	**mg/Kg**	**1**
1,2-Dichloropropane	78-87-5	8260D	ND		0.0060	0.0024	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.0060	0.0024	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.0060	0.0024	mg/Kg	1
Ethylbenzene	100-41-4	8260D	ND		0.0060	0.0024	mg/Kg	1
2-Hexanone	591-78-6	8260D	ND		0.012	0.0048	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	ND		0.0060	0.0024	mg/Kg	1
Methyl acetate	79-20-9	8260D	ND		0.0060	0.0024	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.0060	0.0024	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		0.012	0.0048	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	ND		0.0060	0.0024	mg/Kg	1
Methylene chloride	75-09-2	8260D	ND		0.0060	0.0024	mg/Kg	1
Styrene	100-42-5	8260D	ND		0.0060	0.0024	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.0060	0.0024	mg/Kg	1
Tetrachloroethene	**127-18-4**	**8260D**	**0.68**		**0.38**	**0.15**	**mg/Kg**	**2**
Toluene	108-88-3	8260D	ND		0.0060	0.0024	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		0.0060	0.0024	mg/Kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.0060	0.0024	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.0060	0.0024	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22026-006**	
Description: **RI-SB-03 (16-18)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1830**	Project Name: **TAMP**	% Solids: **72.0**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260D	1	06/28/2022 1759	JM1		46389	
2	5035 High	8260D	1	07/01/2022 1317	JM1		46842	6.12

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.0060	0.0024	mg/Kg	1
Trichloroethene	**79-01-6**	**8260D**	**0.92**		**0.38**	**0.15**	**mg/Kg**	**2**
Trichlorofluoromethane	75-69-4	8260D	ND		0.0060	0.0024	mg/Kg	1
Vinyl chloride	75-01-4	8260D	ND		0.012	0.0036	mg/Kg	1
Xylenes (total)	1330-20-7	8260D	ND		0.012	0.0048	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		106	79-119		103	79-119
Dibromofluoromethane		95	78-119		104	78-119
1,2-Dichloroethane-d4		96	71-136		106	71-136
Toluene-d8		105	85-116		100	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22026-007**	
Description: **RI-SB-04 (6-8)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1910**	Project Name: **TAMP**	% Solids: **79.0**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1822	JM1		46389
2	5035	8260D	1	07/01/2022 1817	JM1		46849

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		0.019	0.0076	mg/Kg	1
Benzene	71-43-2	8260D	ND		0.0048	0.0019	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	ND		0.0048	0.0019	mg/Kg	1
Bromoform	75-25-2	8260D	ND		0.0048	0.0019	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.0095	0.0029	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	ND		0.019	0.0038	mg/Kg	1
Carbon disulfide	75-15-0	8260D	ND		0.0048	0.0019	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	ND		0.0048	0.0019	mg/Kg	1
Chlorobenzene	108-90-7	8260D	ND		0.0048	0.0019	mg/Kg	1
Chloroethane	75-00-3	8260D	ND		0.0048	0.0019	mg/Kg	1
Chloroform	67-66-3	8260D	ND		0.0048	0.0019	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND	L	0.0095	0.0029	mg/Kg	1
Cyclohexane	110-82-7	8260D	ND		0.0048	0.0019	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.0048	0.0019	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	ND		0.0048	0.0019	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.0048	0.0019	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.0048	0.0019	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.0048	0.0019	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.0048	0.0019	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	ND	L	0.0095	0.0029	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.0048	0.0019	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.0048	0.0019	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.0048	0.0019	mg/Kg	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**0.0023**	**J**	**0.0048**	**0.0019**	**mg/Kg**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.0048	0.0019	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.0048	0.0019	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.0048	0.0019	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.0048	0.0019	mg/Kg	1
Ethylbenzene	100-41-4	8260D	ND		0.0048	0.0019	mg/Kg	1
2-Hexanone	591-78-6	8260D	ND		0.0095	0.0038	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	ND		0.0048	0.0019	mg/Kg	1
Methyl acetate	79-20-9	8260D	ND		0.0048	0.0019	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.0048	0.0019	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		0.0095	0.0038	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	ND		0.0048	0.0019	mg/Kg	1
Methylene chloride	75-09-2	8260D	ND		0.0048	0.0019	mg/Kg	1
Styrene	100-42-5	8260D	ND		0.0048	0.0019	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.0048	0.0019	mg/Kg	1
Tetrachloroethene	127-18-4	8260D	ND		0.0048	0.0019	mg/Kg	1
Toluene	108-88-3	8260D	ND		0.0048	0.0019	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		0.0048	0.0019	mg/Kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.0048	0.0019	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.0048	0.0019	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22026-007**	
Description: **RI-SB-04 (6-8)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1910**	Project Name: **TAMP**	% Solids: **79.0**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1822	JM1		46389
2	5035	8260D	1	07/01/2022 1817	JM1		46849

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.0048	0.0019	mg/Kg	1
Trichloroethene	**79-01-6**	**8260D**	**0.0094**		**0.0049**	**0.0019**	**mg/Kg**	**2**
Trichlorofluoromethane	75-69-4	8260D	ND		0.0048	0.0019	mg/Kg	1
Vinyl chloride	75-01-4	8260D	ND		0.0095	0.0029	mg/Kg	1
Xylenes (total)	1330-20-7	8260D	ND		0.0095	0.0038	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		108	79-119		104	79-119
Dibromofluoromethane		94	78-119		101	78-119
1,2-Dichloroethane-d4		101	71-136		105	71-136
Toluene-d8		106	85-116		102	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22026-008**	
Description: **RI-SB-04 (14-16)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1920**	Project Name: **TAMP**	% Solids: **76.1**	**06/22/2022 2358**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1845	JM1		46389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		0.021	0.0083	mg/Kg	1
Benzene	71-43-2	8260D	ND		0.0052	0.0021	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	ND		0.0052	0.0021	mg/Kg	1
Bromoform	75-25-2	8260D	ND		0.0052	0.0021	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.010	0.0031	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	ND		0.021	0.0042	mg/Kg	1
Carbon disulfide	75-15-0	8260D	ND		0.0052	0.0021	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	ND		0.0052	0.0021	mg/Kg	1
Chlorobenzene	108-90-7	8260D	ND		0.0052	0.0021	mg/Kg	1
Chloroethane	75-00-3	8260D	ND		0.0052	0.0021	mg/Kg	1
Chloroform	67-66-3	8260D	ND		0.0052	0.0021	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND	L	0.010	0.0031	mg/Kg	1
Cyclohexane	110-82-7	8260D	ND		0.0052	0.0021	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.0052	0.0021	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	ND		0.0052	0.0021	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.0052	0.0021	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.0052	0.0021	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.0052	0.0021	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.0052	0.0021	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	ND	L	0.010	0.0031	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.0052	0.0021	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.0052	0.0021	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.0052	0.0021	mg/Kg	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**0.0085**		**0.0052**	**0.0021**	**mg/Kg**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.0052	0.0021	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.0052	0.0021	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.0052	0.0021	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.0052	0.0021	mg/Kg	1
Ethylbenzene	100-41-4	8260D	ND		0.0052	0.0021	mg/Kg	1
2-Hexanone	591-78-6	8260D	ND		0.010	0.0042	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	ND		0.0052	0.0021	mg/Kg	1
Methyl acetate	79-20-9	8260D	ND		0.0052	0.0021	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.0052	0.0021	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		0.010	0.0042	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	ND		0.0052	0.0021	mg/Kg	1
Methylene chloride	75-09-2	8260D	ND		0.0052	0.0021	mg/Kg	1
Styrene	100-42-5	8260D	ND		0.0052	0.0021	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.0052	0.0021	mg/Kg	1
Tetrachloroethene	127-18-4	8260D	ND		0.0052	0.0021	mg/Kg	1
Toluene	108-88-3	8260D	ND		0.0052	0.0021	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		0.0052	0.0021	mg/Kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.0052	0.0021	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.0052	0.0021	mg/Kg	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.0052	0.0021	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22026-008**	
Description: **RI-SB-04 (14-16)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1920**	Project Name: **TAMP**	% Solids: **76.1**	**06/22/2022 2358**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1845	JM1		46389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**0.068**		**0.0052**	**0.0021**	**mg/Kg**	**1**
Trichlorofluoromethane	75-69-4	8260D	ND		0.0052	0.0021	mg/Kg	1
Vinyl chloride	75-01-4	8260D	ND		0.010	0.0031	mg/Kg	1
Xylenes (total)	1330-20-7	8260D	ND		0.010	0.0042	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		109	79-119
Dibromofluoromethane		97	78-119
1,2-Dichloroethane-d4		100	71-136
Toluene-d8		104	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**			Laboratory ID: **XF22026-009**
Description: **RI-SB-05 (2-4)**			Matrix: **Solid**
Date Sampled: **06/20/2022 1935**	Project Name: **TAMP**		% Solids: **72.9** **06/22/2022 2358**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1159	JM1		46673

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		0.023	0.0091	mg/Kg	1
Benzene	71-43-2	8260D	ND		0.0057	0.0023	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	ND		0.0057	0.0023	mg/Kg	1
Bromoform	75-25-2	8260D	ND		0.0057	0.0023	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.011	0.0034	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	ND		0.023	0.0045	mg/Kg	1
Carbon disulfide	75-15-0	8260D	ND		0.0057	0.0023	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	ND		0.0057	0.0023	mg/Kg	1
Chlorobenzene	108-90-7	8260D	ND		0.0057	0.0023	mg/Kg	1
Chloroethane	75-00-3	8260D	ND		0.0057	0.0023	mg/Kg	1
Chloroform	67-66-3	8260D	ND		0.0057	0.0023	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND	L	0.011	0.0034	mg/Kg	1
Cyclohexane	110-82-7	8260D	ND		0.0057	0.0023	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.0057	0.0023	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	ND		0.0057	0.0023	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.0057	0.0023	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.0057	0.0023	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.0057	0.0023	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.0057	0.0023	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	ND	L	0.011	0.0034	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.0057	0.0023	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.0057	0.0023	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.0057	0.0023	mg/Kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.0057	0.0023	mg/Kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.0057	0.0023	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.0057	0.0023	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.0057	0.0023	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.0057	0.0023	mg/Kg	1
Ethylbenzene	100-41-4	8260D	ND		0.0057	0.0023	mg/Kg	1
2-Hexanone	591-78-6	8260D	ND		0.011	0.0045	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	ND		0.0057	0.0023	mg/Kg	1
Methyl acetate	79-20-9	8260D	ND		0.0057	0.0023	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.0057	0.0023	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		0.011	0.0045	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	ND		0.0057	0.0023	mg/Kg	1
Methylene chloride	75-09-2	8260D	ND		0.0057	0.0023	mg/Kg	1
Styrene	100-42-5	8260D	ND		0.0057	0.0023	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.0057	0.0023	mg/Kg	1
Tetrachloroethene	**127-18-4**	**8260D**	**0.0030**	**J**	**0.0057**	**0.0023**	**mg/Kg**	**1**
Toluene	108-88-3	8260D	ND		0.0057	0.0023	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		0.0057	0.0023	mg/Kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.0057	0.0023	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.0057	0.0023	mg/Kg	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.0057	0.0023	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22026-009**	
Description: **RI-SB-05 (2-4)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1935**	Project Name: **TAMP**	% Solids: **72.9**	**06/22/2022 2358**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1159	JM1		46673

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**0.011**		**0.0057**	**0.0023**	**mg/Kg**	**1**
Trichlorofluoromethane	75-69-4	8260D	ND		0.0057	0.0023	mg/Kg	1
Vinyl chloride	75-01-4	8260D	ND	L	0.011	0.0034	mg/Kg	1
Xylenes (total)	1330-20-7	8260D	ND		0.011	0.0045	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		104	79-119
Dibromofluoromethane		99	78-119
1,2-Dichloroethane-d4		103	71-136
Toluene-d8		108	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**			Laboratory ID: **XF22026-010**
Description: **RI-SB-05 (10-12)**			Matrix: **Solid**
Date Sampled: **06/20/2022 1945**	Project Name: **TAMP**		% Solids: **72.2** **06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1222	JM1		46673

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		0.024	0.0097	mg/Kg	1
Benzene	71-43-2	8260D	ND		0.0061	0.0024	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	ND		0.0061	0.0024	mg/Kg	1
Bromoform	75-25-2	8260D	ND		0.0061	0.0024	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.012	0.0037	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	ND		0.024	0.0049	mg/Kg	1
Carbon disulfide	75-15-0	8260D	ND		0.0061	0.0024	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	ND		0.0061	0.0024	mg/Kg	1
Chlorobenzene	108-90-7	8260D	ND		0.0061	0.0024	mg/Kg	1
Chloroethane	75-00-3	8260D	ND		0.0061	0.0024	mg/Kg	1
Chloroform	67-66-3	8260D	ND		0.0061	0.0024	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND	L	0.012	0.0037	mg/Kg	1
Cyclohexane	110-82-7	8260D	ND		0.0061	0.0024	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.0061	0.0024	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	ND		0.0061	0.0024	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.0061	0.0024	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.0061	0.0024	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.0061	0.0024	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.0061	0.0024	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	ND	L	0.012	0.0037	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.0061	0.0024	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.0061	0.0024	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.0061	0.0024	mg/Kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.0061	0.0024	mg/Kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.0061	0.0024	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.0061	0.0024	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.0061	0.0024	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.0061	0.0024	mg/Kg	1
Ethylbenzene	100-41-4	8260D	ND		0.0061	0.0024	mg/Kg	1
2-Hexanone	591-78-6	8260D	ND		0.012	0.0049	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	ND		0.0061	0.0024	mg/Kg	1
Methyl acetate	79-20-9	8260D	ND		0.0061	0.0024	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.0061	0.0024	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		0.012	0.0049	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	ND		0.0061	0.0024	mg/Kg	1
Methylene chloride	75-09-2	8260D	ND		0.0061	0.0024	mg/Kg	1
Styrene	100-42-5	8260D	ND		0.0061	0.0024	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.0061	0.0024	mg/Kg	1
Tetrachloroethene	127-18-4	8260D	ND		0.0061	0.0024	mg/Kg	1
Toluene	108-88-3	8260D	ND		0.0061	0.0024	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		0.0061	0.0024	mg/Kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.0061	0.0024	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.0061	0.0024	mg/Kg	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.0061	0.0024	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22026-010**	
Description: **RI-SB-05 (10-12)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1945**	Project Name: **TAMP**	% Solids: **72.2**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1222	JM1		46673

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.0061	0.0024	mg/Kg	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.0061	0.0024	mg/Kg	1
Vinyl chloride	75-01-4	8260D	ND	L	0.012	0.0037	mg/Kg	1
Xylenes (total)	1330-20-7	8260D	ND		0.012	0.0049	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		107	79-119
Dibromofluoromethane		98	78-119
1,2-Dichloroethane-d4		101	71-136
Toluene-d8		107	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22026-011**	
Description: **RI-SB-06 (4-6)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1930**	Project Name: **TAMP**	% Solids: **81.1**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1245	JM1		46673

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		0.020	0.0080	mg/Kg	1
Benzene	71-43-2	8260D	ND		0.0050	0.0020	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	ND		0.0050	0.0020	mg/Kg	1
Bromoform	75-25-2	8260D	ND		0.0050	0.0020	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.010	0.0030	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	ND		0.020	0.0040	mg/Kg	1
Carbon disulfide	75-15-0	8260D	ND		0.0050	0.0020	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	ND		0.0050	0.0020	mg/Kg	1
Chlorobenzene	108-90-7	8260D	ND		0.0050	0.0020	mg/Kg	1
Chloroethane	75-00-3	8260D	ND		0.0050	0.0020	mg/Kg	1
Chloroform	67-66-3	8260D	ND		0.0050	0.0020	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND	L	0.010	0.0030	mg/Kg	1
Cyclohexane	110-82-7	8260D	ND		0.0050	0.0020	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.0050	0.0020	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	ND		0.0050	0.0020	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.0050	0.0020	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.0050	0.0020	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.0050	0.0020	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.0050	0.0020	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	ND	L	0.010	0.0030	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.0050	0.0020	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.0050	0.0020	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.0050	0.0020	mg/Kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.0050	0.0020	mg/Kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.0050	0.0020	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.0050	0.0020	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.0050	0.0020	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.0050	0.0020	mg/Kg	1
Ethylbenzene	100-41-4	8260D	ND		0.0050	0.0020	mg/Kg	1
2-Hexanone	591-78-6	8260D	ND		0.010	0.0040	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	ND		0.0050	0.0020	mg/Kg	1
Methyl acetate	79-20-9	8260D	ND		0.0050	0.0020	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.0050	0.0020	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		0.010	0.0040	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	ND		0.0050	0.0020	mg/Kg	1
Methylene chloride	75-09-2	8260D	ND		0.0050	0.0020	mg/Kg	1
Styrene	100-42-5	8260D	ND		0.0050	0.0020	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.0050	0.0020	mg/Kg	1
Tetrachloroethene	127-18-4	8260D	ND		0.0050	0.0020	mg/Kg	1
Toluene	108-88-3	8260D	ND		0.0050	0.0020	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		0.0050	0.0020	mg/Kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.0050	0.0020	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.0050	0.0020	mg/Kg	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.0050	0.0020	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22026-011**	
Description: **RI-SB-06 (4-6)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1930**	Project Name: **TAMP**	% Solids: **81.1**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1245	JM1		46673

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.0050	0.0020	mg/Kg	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.0050	0.0020	mg/Kg	1
Vinyl chloride	75-01-4	8260D	ND	L	0.010	0.0030	mg/Kg	1
Xylenes (total)	1330-20-7	8260D	ND		0.010	0.0040	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		107	79-119
Dibromofluoromethane		100	78-119
1,2-Dichloroethane-d4		103	71-136
Toluene-d8		101	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22026-012**	
Description: **RI-SB-06 (16-18)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1935**	Project Name: **TAMP**	% Solids: **74.9**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1308	JM1		46673

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		0.021	0.0083	mg/Kg	1
Benzene	71-43-2	8260D	ND		0.0052	0.0021	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	ND		0.0052	0.0021	mg/Kg	1
Bromoform	75-25-2	8260D	ND		0.0052	0.0021	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.010	0.0031	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	ND		0.021	0.0042	mg/Kg	1
Carbon disulfide	75-15-0	8260D	ND		0.0052	0.0021	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	ND		0.0052	0.0021	mg/Kg	1
Chlorobenzene	108-90-7	8260D	ND		0.0052	0.0021	mg/Kg	1
Chloroethane	75-00-3	8260D	ND		0.0052	0.0021	mg/Kg	1
Chloroform	67-66-3	8260D	ND		0.0052	0.0021	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND	L	0.010	0.0031	mg/Kg	1
Cyclohexane	110-82-7	8260D	ND		0.0052	0.0021	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.0052	0.0021	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	ND		0.0052	0.0021	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.0052	0.0021	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.0052	0.0021	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.0052	0.0021	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.0052	0.0021	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	ND	L	0.010	0.0031	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.0052	0.0021	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.0052	0.0021	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.0052	0.0021	mg/Kg	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**0.0027**	**J**	**0.0052**	**0.0021**	**mg/Kg**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.0052	0.0021	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.0052	0.0021	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.0052	0.0021	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.0052	0.0021	mg/Kg	1
Ethylbenzene	100-41-4	8260D	ND		0.0052	0.0021	mg/Kg	1
2-Hexanone	591-78-6	8260D	ND		0.010	0.0042	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	ND		0.0052	0.0021	mg/Kg	1
Methyl acetate	79-20-9	8260D	ND		0.0052	0.0021	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.0052	0.0021	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		0.010	0.0042	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	ND		0.0052	0.0021	mg/Kg	1
Methylene chloride	75-09-2	8260D	ND		0.0052	0.0021	mg/Kg	1
Styrene	100-42-5	8260D	ND		0.0052	0.0021	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.0052	0.0021	mg/Kg	1
Tetrachloroethene	**127-18-4**	**8260D**	**0.011**		**0.0052**	**0.0021**	**mg/Kg**	**1**
Toluene	108-88-3	8260D	ND		0.0052	0.0021	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		0.0052	0.0021	mg/Kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.0052	0.0021	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.0052	0.0021	mg/Kg	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.0052	0.0021	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22026-012**	
Description: **RI-SB-06 (16-18)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1935**	Project Name: **TAMP**	% Solids: **74.9**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1308	JM1		46673

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**0.0099**		**0.0052**	**0.0021**	**mg/Kg**	**1**
Trichlorofluoromethane	75-69-4	8260D	ND		0.0052	0.0021	mg/Kg	1
Vinyl chloride	75-01-4	8260D	ND	L	0.010	0.0031	mg/Kg	1
Xylenes (total)	1330-20-7	8260D	ND		0.010	0.0042	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		104	79-119
Dibromofluoromethane		102	78-119
1,2-Dichloroethane-d4		104	71-136
Toluene-d8		104	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22026-013**	
Description: **RI-SB-02 (2-4)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1710**	Project Name: **TAMP**	% Solids: **72.9**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1332	JM1		46673
2	5035	8260D	1	07/04/2022 1855	JM1		46981

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**0.11**		**0.025**	**0.010**	**mg/Kg**	**1**
Benzene	71-43-2	8260D	ND		0.0062	0.0025	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	ND		0.0062	0.0025	mg/Kg	1
Bromoform	75-25-2	8260D	ND		0.0062	0.0025	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.012	0.0037	mg/Kg	1
2-Butanone (MEK)	**78-93-3**	**8260D**	**0.018**	**J**	**0.025**	**0.0050**	**mg/Kg**	**1**
Carbon disulfide	75-15-0	8260D	ND		0.0062	0.0025	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	ND		0.0062	0.0025	mg/Kg	1
Chlorobenzene	108-90-7	8260D	ND		0.0062	0.0025	mg/Kg	1
Chloroethane	75-00-3	8260D	ND		0.0062	0.0025	mg/Kg	1
Chloroform	67-66-3	8260D	ND		0.0062	0.0025	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND	L	0.012	0.0037	mg/Kg	1
Cyclohexane	110-82-7	8260D	ND		0.0062	0.0025	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.0062	0.0025	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	ND		0.0062	0.0025	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.0062	0.0025	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.0062	0.0025	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.0062	0.0025	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.0062	0.0025	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	ND	L	0.012	0.0037	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.0062	0.0025	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.0062	0.0025	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.0062	0.0025	mg/Kg	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**0.0052**	**J**	**0.0062**	**0.0025**	**mg/Kg**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.0062	0.0025	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.0062	0.0025	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.0062	0.0025	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.0062	0.0025	mg/Kg	1
Ethylbenzene	100-41-4	8260D	ND		0.0062	0.0025	mg/Kg	1
2-Hexanone	591-78-6	8260D	ND		0.012	0.0050	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	ND		0.0062	0.0025	mg/Kg	1
Methyl acetate	79-20-9	8260D	ND		0.0062	0.0025	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.0062	0.0025	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		0.012	0.0050	mg/Kg	1
Methylcyclohexane	**108-87-2**	**8260D**	**0.0028**	**J**	**0.0062**	**0.0025**	**mg/Kg**	**1**
Methylene chloride	75-09-2	8260D	ND		0.0062	0.0025	mg/Kg	1
Styrene	100-42-5	8260D	ND		0.0062	0.0025	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.0062	0.0025	mg/Kg	1
Tetrachloroethene	127-18-4	8260D	ND		0.0062	0.0025	mg/Kg	1
Toluene	108-88-3	8260D	ND		0.0062	0.0025	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		0.0062	0.0025	mg/Kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.0062	0.0025	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.0062	0.0025	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22026-013**	
Description: **RI-SB-02 (2-4)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1710**	Project Name: **TAMP**	% Solids: **72.9**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1332	JM1		46673
2	5035	8260D	1	07/04/2022 1855	JM1		46981

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.0062	0.0025	mg/Kg	1
Trichloroethene	79-01-6	8260D	ND		0.0062	0.0025	mg/Kg	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.0062	0.0025	mg/Kg	1
Vinyl chloride	**75-01-4**	**8260D**	**0.021**		**0.011**	**0.0032**	**mg/Kg**	**2**
Xylenes (total)	**1330-20-7**	**8260D**	**0.0066**	**J**	**0.012**	**0.0050**	**mg/Kg**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		102	79-119		101	79-119
Dibromofluoromethane		99	78-119		107	78-119
1,2-Dichloroethane-d4		103	71-136		104	71-136
Toluene-d8		107	85-116		104	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22026-014**	
Description: **TB-01**		Matrix: **Aqueous**	
Date Sampled: **06/21/2022**	Project Name: **TAMP**		
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	07/01/2022 1359	BBW		46845

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		2.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22026-014**	
Description: **TB-01**		Matrix: **Aqueous**	
Date Sampled: **06/21/2022**	Project Name: **TAMP**		
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	07/01/2022 1359	BBW		46845

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		1.0	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		92	81-118
Bromofluorobenzene		101	85-114
Toluene-d8		97	89-112
Dibromofluoromethane		93	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22026-015**	
Description: **DUP-SB-01**		Matrix: **Solid**	
Date Sampled: **06/21/2022**	Project Name: **TAMP**	% Solids: **73.0**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260D	1	06/30/2022 1355	JM1		46673	
2	5035 High	8260D	1	07/05/2022 1249	JM1		47032	6.06

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		0.022	0.0090	mg/Kg	1
Benzene	71-43-2	8260D	ND		0.0056	0.0022	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	ND		0.0056	0.0022	mg/Kg	1
Bromoform	75-25-2	8260D	ND		0.0056	0.0022	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.011	0.0034	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	ND		0.022	0.0045	mg/Kg	1
Carbon disulfide	75-15-0	8260D	ND		0.0056	0.0022	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	ND		0.0056	0.0022	mg/Kg	1
Chlorobenzene	108-90-7	8260D	ND		0.0056	0.0022	mg/Kg	1
Chloroethane	75-00-3	8260D	ND		0.0056	0.0022	mg/Kg	1
Chloroform	67-66-3	8260D	ND		0.0056	0.0022	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND	L	0.011	0.0034	mg/Kg	1
Cyclohexane	110-82-7	8260D	ND		0.0056	0.0022	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.0056	0.0022	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	ND		0.0056	0.0022	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.0056	0.0022	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.0056	0.0022	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.0056	0.0022	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.0056	0.0022	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	ND	L	0.011	0.0034	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.0056	0.0022	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.0056	0.0022	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.0056	0.0022	mg/Kg	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**0.011**		**0.0056**	**0.0022**	**mg/Kg**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.0056	0.0022	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.0056	0.0022	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.0056	0.0022	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.0056	0.0022	mg/Kg	1
Ethylbenzene	100-41-4	8260D	ND		0.0056	0.0022	mg/Kg	1
2-Hexanone	591-78-6	8260D	ND		0.011	0.0045	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	ND		0.0056	0.0022	mg/Kg	1
Methyl acetate	79-20-9	8260D	ND		0.0056	0.0022	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.0056	0.0022	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		0.011	0.0045	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	ND		0.0056	0.0022	mg/Kg	1
Methylene chloride	75-09-2	8260D	ND		0.0056	0.0022	mg/Kg	1
Styrene	100-42-5	8260D	ND		0.0056	0.0022	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.0056	0.0022	mg/Kg	1
Tetrachloroethene	127-18-4	8260D	ND		0.0056	0.0022	mg/Kg	1
Toluene	108-88-3	8260D	ND		0.0056	0.0022	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**0.0084**		**0.0056**	**0.0022**	**mg/Kg**	**1**
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.0056	0.0022	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.0056	0.0022	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22026-015**	
Description: **DUP-SB-01**		Matrix: **Solid**	
Date Sampled: **06/21/2022**	Project Name: **TAMP**	% Solids: **73.0**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260D	1	06/30/2022 1355	JM1		46673	
2	5035 High	8260D	1	07/05/2022 1249	JM1		47032	6.06

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.0056	0.0022	mg/Kg	1
Trichloroethene	**79-01-6**	**8260D**	**0.39**		**0.37**	**0.15**	**mg/Kg**	**2**
Trichlorofluoromethane	75-69-4	8260D	ND		0.0056	0.0022	mg/Kg	1
Vinyl chloride	75-01-4	8260D	ND	L	0.011	0.0034	mg/Kg	1
Xylenes (total)	1330-20-7	8260D	ND		0.011	0.0045	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		98	79-119		94	79-119
Dibromofluoromethane		99	78-119		93	78-119
1,2-Dichloroethane-d4		100	71-136		93	71-136
Toluene-d8		104	85-116		99	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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QC Summary

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46389-001
Batch: 46389
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	0.020	0.0080	mg/kg	06/28/2022 0950
Benzene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Bromodichloromethane	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Bromoform	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Bromomethane (Methyl bromide)	ND		1	0.010	0.0030	mg/kg	06/28/2022 0950
2-Butanone (MEK)	ND		1	0.020	0.0040	mg/kg	06/28/2022 0950
Carbon disulfide	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Carbon tetrachloride	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Chlorobenzene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Chloroethane	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Chloroform	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Chloromethane (Methyl chloride)	ND		1	0.010	0.0030	mg/kg	06/28/2022 0950
Cyclohexane	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Dibromochloromethane	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
1,2-Dibromoethane (EDB)	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
1,2-Dichlorobenzene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
1,3-Dichlorobenzene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
1,4-Dichlorobenzene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Dichlorodifluoromethane	ND		1	0.010	0.0030	mg/kg	06/28/2022 0950
1,1-Dichloroethane	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
1,2-Dichloroethane	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
1,1-Dichloroethene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
cis-1,2-Dichloroethene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
trans-1,2-Dichloroethene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
1,2-Dichloropropane	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
cis-1,3-Dichloropropene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
trans-1,3-Dichloropropene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Ethylbenzene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
2-Hexanone	ND		1	0.010	0.0040	mg/kg	06/28/2022 0950
Isopropylbenzene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Methyl acetate	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Methyl tertiary butyl ether (MTBE)	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
4-Methyl-2-pentanone	ND		1	0.010	0.0040	mg/kg	06/28/2022 0950
Methylcyclohexane	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Methylene chloride	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Styrene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
1,1,2,2-Tetrachloroethane	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Tetrachloroethene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Toluene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
1,2,4-Trichlorobenzene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
1,1,1-Trichloroethane	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
1,1,2-Trichloroethane	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46389-001
Batch: 46389
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Trichlorofluoromethane	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Vinyl chloride	ND		1	0.010	0.0030	mg/kg	06/28/2022 0950
Xylenes (total)	ND		1	0.010	0.0040	mg/kg	06/28/2022 0950

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		116	79-119
Dibromofluoromethane		98	78-119
1,2-Dichloroethane-d4		101	71-136
Toluene-d8		107	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46389-002
Batch: 46389
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	0.10	0.11		1	109	36-164	06/28/2022 0927
Benzene	0.050	0.051		1	102	77-121	06/28/2022 0927
Bromodichloromethane	0.050	0.051		1	101	75-127	06/28/2022 0927
Bromoform	0.050	0.050		1	100	67-132	06/28/2022 0927
Bromomethane (Methyl bromide)	0.050	0.057		1	114	53-143	06/28/2022 0927
2-Butanone (MEK)	0.10	0.12		1	115	51-148	06/28/2022 0927
Carbon disulfide	0.050	0.051		1	102	63-132	06/28/2022 0927
Carbon tetrachloride	0.050	0.050		1	100	70-135	06/28/2022 0927
Chlorobenzene	0.050	0.051		1	102	79-120	06/28/2022 0927
Chloroethane	0.050	0.057		1	115	59-139	06/28/2022 0927
Chloroform	0.050	0.049		1	98	78-123	06/28/2022 0927
Chloromethane (Methyl chloride)	0.050	0.068	N	1	137	50-136	06/28/2022 0927
Cyclohexane	0.050	0.045		1	90	67-131	06/28/2022 0927
1,2-Dibromo-3-chloropropane (DBCP)	0.050	0.048		1	97	61-132	06/28/2022 0927
Dibromochloromethane	0.050	0.050		1	99	75-127	06/28/2022 0927
1,2-Dibromoethane (EDB)	0.050	0.050		1	99	78-122	06/28/2022 0927
1,2-Dichlorobenzene	0.050	0.051		1	101	78-121	06/28/2022 0927
1,3-Dichlorobenzene	0.050	0.051		1	101	77-121	06/28/2022 0927
1,4-Dichlorobenzene	0.050	0.051		1	102	75-120	06/28/2022 0927
Dichlorodifluoromethane	0.050	0.083	N	1	165	29-149	06/28/2022 0927
1,1-Dichloroethane	0.050	0.050		1	100	76-125	06/28/2022 0927
1,2-Dichloroethane	0.050	0.051		1	103	73-128	06/28/2022 0927
1,1-Dichloroethene	0.050	0.050		1	99	70-131	06/28/2022 0927
cis-1,2-Dichloroethene	0.050	0.050		1	100	77-123	06/28/2022 0927
trans-1,2-Dichloroethene	0.050	0.048		1	95	74-125	06/28/2022 0927
1,2-Dichloropropane	0.050	0.051		1	102	76-123	06/28/2022 0927
cis-1,3-Dichloropropene	0.050	0.052		1	104	74-126	06/28/2022 0927
trans-1,3-Dichloropropene	0.050	0.051		1	101	71-130	06/28/2022 0927
Ethylbenzene	0.050	0.051		1	102	76-122	06/28/2022 0927
2-Hexanone	0.10	0.097		1	97	53-145	06/28/2022 0927
Isopropylbenzene	0.050	0.052		1	103	68-134	06/28/2022 0927
Methyl acetate	0.050	0.044		1	88	53-144	06/28/2022 0927
Methyl tertiary butyl ether (MTBE)	0.050	0.045		1	90	73-125	06/28/2022 0927
4-Methyl-2-pentanone	0.10	0.093		1	93	65-135	06/28/2022 0927
Methylcyclohexane	0.050	0.050		1	100	66-133	06/28/2022 0927
Methylene chloride	0.050	0.049		1	99	70-128	06/28/2022 0927
Styrene	0.050	0.052		1	104	76-124	06/28/2022 0927
1,1,2,2-Tetrachloroethane	0.050	0.048		1	95	70-124	06/28/2022 0927
Tetrachloroethene	0.050	0.051		1	101	73-128	06/28/2022 0927
Toluene	0.050	0.049		1	98	77-121	06/28/2022 0927
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.050	0.049		1	99	66-136	06/28/2022 0927
1,2,4-Trichlorobenzene	0.050	0.052		1	104	67-129	06/28/2022 0927
1,1,1-Trichloroethane	0.050	0.049		1	99	73-130	06/28/2022 0927
1,1,2-Trichloroethane	0.050	0.050		1	100	78-121	06/28/2022 0927

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46389-002
Batch: 46389
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	0.050	0.050		1	100	77-123	06/28/2022 0927
Trichlorofluoromethane	0.050	0.054		1	108	62-140	06/28/2022 0927
Vinyl chloride	0.050	0.067		1	134	56-135	06/28/2022 0927
Xylenes (total)	0.10	0.10		1	103	78-124	06/28/2022 0927

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		97	79-119
Dibromofluoromethane		92	78-119
1,2-Dichloroethane-d4		98	71-136
Toluene-d8		96	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46673-001
Batch: 46673
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	0.020	0.0080	mg/kg	06/30/2022 0959
Benzene	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
Bromodichloromethane	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
Bromoform	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
Bromomethane (Methyl bromide)	ND		1	0.010	0.0030	mg/kg	06/30/2022 0959
2-Butanone (MEK)	ND		1	0.020	0.0040	mg/kg	06/30/2022 0959
Carbon disulfide	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
Carbon tetrachloride	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
Chlorobenzene	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
Chloroethane	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
Chloroform	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
Chloromethane (Methyl chloride)	ND		1	0.010	0.0030	mg/kg	06/30/2022 0959
Cyclohexane	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
Dibromochloromethane	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
1,2-Dibromoethane (EDB)	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
1,2-Dichlorobenzene	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
1,3-Dichlorobenzene	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
1,4-Dichlorobenzene	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
Dichlorodifluoromethane	ND		1	0.010	0.0030	mg/kg	06/30/2022 0959
1,1-Dichloroethane	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
1,2-Dichloroethane	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
1,1-Dichloroethene	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
cis-1,2-Dichloroethene	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
trans-1,2-Dichloroethene	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
1,2-Dichloropropane	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
cis-1,3-Dichloropropene	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
trans-1,3-Dichloropropene	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
Ethylbenzene	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
2-Hexanone	ND		1	0.010	0.0040	mg/kg	06/30/2022 0959
Isopropylbenzene	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
Methyl acetate	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
Methyl tertiary butyl ether (MTBE)	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
4-Methyl-2-pentanone	ND		1	0.010	0.0040	mg/kg	06/30/2022 0959
Methylcyclohexane	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
Methylene chloride	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
Styrene	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
1,1,2,2-Tetrachloroethane	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
Tetrachloroethene	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
Toluene	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
1,2,4-Trichlorobenzene	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
1,1,1-Trichloroethane	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
1,1,2-Trichloroethane	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46673-001
Batch: 46673
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
Trichlorofluoromethane	ND		1	0.0050	0.0020	mg/kg	06/30/2022 0959
Vinyl chloride	ND		1	0.010	0.0030	mg/kg	06/30/2022 0959
Xylenes (total)	ND		1	0.010	0.0040	mg/kg	06/30/2022 0959

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		108	79-119
Dibromofluoromethane		102	78-119
1,2-Dichloroethane-d4		107	71-136
Toluene-d8		105	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46673-002
Batch: 46673
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	0.10	0.11		1	109	36-164	06/30/2022 0936
Benzene	0.050	0.051		1	102	77-121	06/30/2022 0936
Bromodichloromethane	0.050	0.051		1	101	75-127	06/30/2022 0936
Bromoform	0.050	0.051		1	102	67-132	06/30/2022 0936
Bromomethane (Methyl bromide)	0.050	0.062		1	124	53-143	06/30/2022 0936
2-Butanone (MEK)	0.10	0.11		1	109	51-148	06/30/2022 0936
Carbon disulfide	0.050	0.051		1	102	63-132	06/30/2022 0936
Carbon tetrachloride	0.050	0.049		1	98	70-135	06/30/2022 0936
Chlorobenzene	0.050	0.050		1	100	79-120	06/30/2022 0936
Chloroethane	0.050	0.061		1	123	59-139	06/30/2022 0936
Chloroform	0.050	0.049		1	99	78-123	06/30/2022 0936
Chloromethane (Methyl chloride)	0.050	0.071	N	1	142	50-136	06/30/2022 0936
Cyclohexane	0.050	0.044		1	87	67-131	06/30/2022 0936
1,2-Dibromo-3-chloropropane (DBCP)	0.050	0.047		1	93	61-132	06/30/2022 0936
Dibromochloromethane	0.050	0.049		1	97	75-127	06/30/2022 0936
1,2-Dibromoethane (EDB)	0.050	0.050		1	100	78-122	06/30/2022 0936
1,2-Dichlorobenzene	0.050	0.047		1	95	78-121	06/30/2022 0936
1,3-Dichlorobenzene	0.050	0.050		1	99	77-121	06/30/2022 0936
1,4-Dichlorobenzene	0.050	0.050		1	99	75-120	06/30/2022 0936
Dichlorodifluoromethane	0.050	0.075	N	1	150	29-149	06/30/2022 0936
1,1-Dichloroethane	0.050	0.051		1	101	76-125	06/30/2022 0936
1,2-Dichloroethane	0.050	0.052		1	105	73-128	06/30/2022 0936
1,1-Dichloroethene	0.050	0.050		1	100	70-131	06/30/2022 0936
cis-1,2-Dichloroethene	0.050	0.049		1	99	77-123	06/30/2022 0936
trans-1,2-Dichloroethene	0.050	0.049		1	98	74-125	06/30/2022 0936
1,2-Dichloropropane	0.050	0.052		1	104	76-123	06/30/2022 0936
cis-1,3-Dichloropropene	0.050	0.051		1	103	74-126	06/30/2022 0936
trans-1,3-Dichloropropene	0.050	0.050		1	100	71-130	06/30/2022 0936
Ethylbenzene	0.050	0.051		1	101	76-122	06/30/2022 0936
2-Hexanone	0.10	0.10		1	100	53-145	06/30/2022 0936
Isopropylbenzene	0.050	0.048		1	97	68-134	06/30/2022 0936
Methyl acetate	0.050	0.047		1	94	53-144	06/30/2022 0936
Methyl tertiary butyl ether (MTBE)	0.050	0.047		1	93	73-125	06/30/2022 0936
4-Methyl-2-pentanone	0.10	0.10		1	100	65-135	06/30/2022 0936
Methylcyclohexane	0.050	0.051		1	101	66-133	06/30/2022 0936
Methylene chloride	0.050	0.051		1	102	70-128	06/30/2022 0936
Styrene	0.050	0.052		1	105	76-124	06/30/2022 0936
1,1,2,2-Tetrachloroethane	0.050	0.049		1	99	70-124	06/30/2022 0936
Tetrachloroethene	0.050	0.046		1	93	73-128	06/30/2022 0936
Toluene	0.050	0.046		1	91	77-121	06/30/2022 0936
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.050	0.049		1	99	66-136	06/30/2022 0936
1,2,4-Trichlorobenzene	0.050	0.046		1	93	67-129	06/30/2022 0936
1,1,1-Trichloroethane	0.050	0.049		1	98	73-130	06/30/2022 0936
1,1,2-Trichloroethane	0.050	0.049		1	98	78-121	06/30/2022 0936

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46673-002
Batch: 46673
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	0.050	0.049		1	99	77-123	06/30/2022 0936
Trichlorofluoromethane	0.050	0.054		1	107	62-140	06/30/2022 0936
Vinyl chloride	0.050	0.072	N	1	143	56-135	06/30/2022 0936
Xylenes (total)	0.10	0.099		1	99	78-124	06/30/2022 0936

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		96	79-119
Dibromofluoromethane		96	78-119
1,2-Dichloroethane-d4		103	71-136
Toluene-d8		92	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46842-001
Batch: 46842
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035 High

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Tetrachloroethene	ND		1	0.25	0.10	mg/kg	07/01/2022 1142
Trichloroethene	ND		1	0.25	0.10	mg/kg	07/01/2022 1142

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		106	79-119
Dibromofluoromethane		103	78-119
1,2-Dichloroethane-d4		107	71-136
Toluene-d8		102	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46842-002
Batch: 46842
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035 High

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Tetrachloroethene	2.5	2.9		1	116	73-128	07/01/2022 1119
Trichloroethene	2.5	2.8		1	110	77-123	07/01/2022 1119

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		89	79-119
Dibromofluoromethane		88	78-119
1,2-Dichloroethane-d4		92	71-136
Toluene-d8		96	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46845-001
Batch: 46845
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	20	5.0	ug/L	07/01/2022 1141
Benzene	ND		1	1.0	0.40	ug/L	07/01/2022 1141
Bromodichloromethane	ND		1	1.0	0.40	ug/L	07/01/2022 1141
Bromoform	ND		1	1.0	0.40	ug/L	07/01/2022 1141
Bromomethane (Methyl bromide)	ND		1	2.0	0.40	ug/L	07/01/2022 1141
2-Butanone (MEK)	ND		1	10	2.0	ug/L	07/01/2022 1141
Carbon disulfide	ND		1	1.0	0.40	ug/L	07/01/2022 1141
Carbon tetrachloride	ND		1	1.0	0.40	ug/L	07/01/2022 1141
Chlorobenzene	ND		1	1.0	0.40	ug/L	07/01/2022 1141
Chloroethane	ND		1	2.0	0.40	ug/L	07/01/2022 1141
Chloroform	ND		1	1.0	0.40	ug/L	07/01/2022 1141
Chloromethane (Methyl chloride)	ND		1	2.0	0.50	ug/L	07/01/2022 1141
Cyclohexane	ND		1	1.0	0.40	ug/L	07/01/2022 1141
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	1.0	0.40	ug/L	07/01/2022 1141
Dibromochloromethane	ND		1	1.0	0.40	ug/L	07/01/2022 1141
1,2-Dibromoethane (EDB)	ND		1	1.0	0.40	ug/L	07/01/2022 1141
1,2-Dichlorobenzene	ND		1	1.0	0.40	ug/L	07/01/2022 1141
1,3-Dichlorobenzene	ND		1	1.0	0.40	ug/L	07/01/2022 1141
1,4-Dichlorobenzene	ND		1	1.0	0.40	ug/L	07/01/2022 1141
Dichlorodifluoromethane	ND		1	2.0	0.60	ug/L	07/01/2022 1141
1,1-Dichloroethane	ND		1	1.0	0.40	ug/L	07/01/2022 1141
1,2-Dichloroethane	ND		1	1.0	0.40	ug/L	07/01/2022 1141
1,1-Dichloroethene	ND		1	1.0	0.40	ug/L	07/01/2022 1141
cis-1,2-Dichloroethene	ND		1	1.0	0.40	ug/L	07/01/2022 1141
trans-1,2-Dichloroethene	ND		1	1.0	0.40	ug/L	07/01/2022 1141
1,2-Dichloropropane	ND		1	1.0	0.40	ug/L	07/01/2022 1141
cis-1,3-Dichloropropene	ND		1	1.0	0.40	ug/L	07/01/2022 1141
trans-1,3-Dichloropropene	ND		1	1.0	0.40	ug/L	07/01/2022 1141
Ethylbenzene	ND		1	1.0	0.40	ug/L	07/01/2022 1141
2-Hexanone	ND		1	10	2.0	ug/L	07/01/2022 1141
Isopropylbenzene	ND		1	1.0	0.40	ug/L	07/01/2022 1141
Methyl acetate	ND		1	1.0	0.40	ug/L	07/01/2022 1141
Methyl tertiary butyl ether (MTBE)	ND		1	1.0	0.40	ug/L	07/01/2022 1141
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	07/01/2022 1141
Methylcyclohexane	ND		1	5.0	0.40	ug/L	07/01/2022 1141
Methylene chloride	ND		1	1.0	0.40	ug/L	07/01/2022 1141
Styrene	ND		1	1.0	0.41	ug/L	07/01/2022 1141
1,1,2,2-Tetrachloroethane	ND		1	1.0	0.40	ug/L	07/01/2022 1141
Tetrachloroethene	ND		1	1.0	0.40	ug/L	07/01/2022 1141
Toluene	ND		1	1.0	0.40	ug/L	07/01/2022 1141
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	07/01/2022 1141
1,2,4-Trichlorobenzene	ND		1	1.0	0.40	ug/L	07/01/2022 1141
1,1,1-Trichloroethane	ND		1	1.0	0.40	ug/L	07/01/2022 1141
1,1,2-Trichloroethane	ND		1	1.0	0.40	ug/L	07/01/2022 1141

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46845-001
Batch: 46845
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	1.0	0.40	ug/L	07/01/2022 1141
Trichlorofluoromethane	ND		1	1.0	0.40	ug/L	07/01/2022 1141
Vinyl chloride	ND		1	1.0	0.40	ug/L	07/01/2022 1141
Xylenes (total)	ND		1	1.0	0.40	ug/L	07/01/2022 1141

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		93	81-118
Bromofluorobenzene		101	85-114
Toluene-d8		97	89-112
Dibromofluoromethane		96	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46845-002
Batch: 46845
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	140		1	144	39-160	07/01/2022 0946
Benzene	50	49		1	98	79-120	07/01/2022 0946
Bromodichloromethane	50	46		1	91	79-125	07/01/2022 0946
Bromoform	50	43		1	87	66-130	07/01/2022 0946
Bromomethane (Methyl bromide)	50	57		1	114	53-141	07/01/2022 0946
2-Butanone (MEK)	100	100		1	100	56-143	07/01/2022 0946
Carbon disulfide	50	46		1	92	64-133	07/01/2022 0946
Carbon tetrachloride	50	47		1	95	72-136	07/01/2022 0946
Chlorobenzene	50	50		1	101	82-118	07/01/2022 0946
Chloroethane	50	52		1	103	60-138	07/01/2022 0946
Chloroform	50	48		1	97	79-124	07/01/2022 0946
Chloromethane (Methyl chloride)	50	48		1	96	50-139	07/01/2022 0946
Cyclohexane	50	45		1	90	71-130	07/01/2022 0946
1,2-Dibromo-3-chloropropane (DBCP)	50	43		1	86	62-128	07/01/2022 0946
Dibromochloromethane	50	48		1	96	74-126	07/01/2022 0946
1,2-Dibromoethane (EDB)	50	51		1	102	77-121	07/01/2022 0946
1,2-Dichlorobenzene	50	50		1	100	80-119	07/01/2022 0946
1,3-Dichlorobenzene	50	51		1	102	80-119	07/01/2022 0946
1,4-Dichlorobenzene	50	51		1	101	79-118	07/01/2022 0946
Dichlorodifluoromethane	50	47		1	94	32-152	07/01/2022 0946
1,1-Dichloroethane	50	47		1	95	77-125	07/01/2022 0946
1,2-Dichloroethane	50	48		1	95	73-128	07/01/2022 0946
1,1-Dichloroethene	50	47		1	95	71-131	07/01/2022 0946
cis-1,2-Dichloroethene	50	49		1	99	78-123	07/01/2022 0946
trans-1,2-Dichloroethene	50	48		1	96	75-124	07/01/2022 0946
1,2-Dichloropropane	50	48		1	95	78-122	07/01/2022 0946
cis-1,3-Dichloropropene	50	48		1	95	75-124	07/01/2022 0946
trans-1,3-Dichloropropene	50	49		1	98	73-127	07/01/2022 0946
Ethylbenzene	50	49		1	98	79-121	07/01/2022 0946
2-Hexanone	100	100		1	105	57-139	07/01/2022 0946
Isopropylbenzene	50	46		1	92	72-131	07/01/2022 0946
Methyl acetate	50	44		1	88	56-136	07/01/2022 0946
Methyl tertiary butyl ether (MTBE)	50	49		1	99	71-124	07/01/2022 0946
4-Methyl-2-pentanone	100	98		1	98	67-130	07/01/2022 0946
Methylcyclohexane	50	47		1	93	72-132	07/01/2022 0946
Methylene chloride	50	45		1	90	74-124	07/01/2022 0946
Styrene	50	50		1	101	78-123	07/01/2022 0946
1,1,2,2-Tetrachloroethane	50	50		1	101	71-121	07/01/2022 0946
Tetrachloroethene	50	53		1	105	74-129	07/01/2022 0946
Toluene	50	51		1	102	80-121	07/01/2022 0946
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	49		1	98	70-136	07/01/2022 0946
1,2,4-Trichlorobenzene	50	46		1	93	69-130	07/01/2022 0946
1,1,1-Trichloroethane	50	47		1	94	74-131	07/01/2022 0946
1,1,2-Trichloroethane	50	51		1	102	80-119	07/01/2022 0946

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46845-002
Batch: 46845
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	51		1	101	79-123	07/01/2022 0946
Trichlorofluoromethane	50	49		1	98	65-141	07/01/2022 0946
Vinyl chloride	50	59		1	117	58-137	07/01/2022 0946
Xylenes (total)	100	98		1	98	79-121	07/01/2022 0946

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		88	81-118
Bromofluorobenzene		97	85-114
Toluene-d8		95	89-112
Dibromofluoromethane		94	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46849-001
Batch: 46849
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.0050	0.0020	mg/kg	07/01/2022 1005

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		106	79-119
Dibromofluoromethane		100	78-119
1,2-Dichloroethane-d4		105	71-136
Toluene-d8		104	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46849-002
Batch: 46849
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	0.050	0.051		1	103	77-123	07/01/2022 0918

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		98	79-119
Dibromofluoromethane		94	78-119
1,2-Dichloroethane-d4		100	71-136
Toluene-d8		98	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: XQ46849-003
Batch: 46849
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Trichloroethene	0.050	0.047		1	93	9.8	77-123	20	07/01/2022 0941

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		95	79-119
Dibromofluoromethane		89	78-119
1,2-Dichloroethane-d4		97	71-136
Toluene-d8		89	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46981-001
Batch: 46981
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Vinyl chloride	ND		1	0.010	0.0030	mg/kg	07/04/2022 1524

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		99	79-119
Dibromofluoromethane		104	78-119
1,2-Dichloroethane-d4		102	71-136
Toluene-d8		108	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46981-002
Batch: 46981
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Vinyl chloride	0.050	0.048		1	96	56-135	07/04/2022 1404

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		103	79-119
Dibromofluoromethane		99	78-119
1,2-Dichloroethane-d4		96	71-136
Toluene-d8		102	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: XQ46981-003
Batch: 46981
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Vinyl chloride	0.050	0.050		1	100	3.8	56-135	20	07/04/2022 1445

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		102	79-119
Dibromofluoromethane		97	78-119
1,2-Dichloroethane-d4		93	71-136
Toluene-d8		98	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ47032-001
Batch: 47032
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035 High

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.25	0.10	mg/kg	07/05/2022 1225

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		87	79-119
Dibromofluoromethane		97	78-119
1,2-Dichloroethane-d4		96	71-136
Toluene-d8		92	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ47032-002
Batch: 47032
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035 High

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	2.5	2.5		1	100	77-123	07/05/2022 1201

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		95	79-119
Dibromofluoromethane		90	78-119
1,2-Dichloroethane-d4		88	71-136
Toluene-d8		96	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Chain of Custody
and
Miscellaneous Documents

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www.pacelabs.com

Number 133756

Client: Terracon Consultants Inc.
Address: 2401 Brentwood Rd.
City: Raleigh State: NC Zip Code: 27604
Project Name: T.A.M.P.
Project No.: 7021 P145
P.O. No.:

Report to Contact: Ethan Dmwiddie
Sampler's Signature: X
Printed Name:

Telephone No. / E-mail: (828)-550-5502 / ethan.dmwiddie@terracon.com
Analysis (Attach list if more space is needed)

Quote No.: 25322
Page 1 of 2
Lot # Bar Code (lab use only): Cooler 1 of 3

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	G=Grab C=Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-aqueous	No of Containers by Preservative Type: Unpres	H2SO4	HNO3	HCl	NaOH	8056 KB	Field Filtered	VOCs 8260	SVOCs 8270	RCRA 8 Metals
RI-SB-01 (4-6) ~~(2-8)~~	6/20/22	1750/1800	G/C		X		~~3~~ 1					1		X	~~X~~	~~X~~
RI-SB-01 (10-12)		1755	G		X		~~3~~ 1					1		X		
RI-SB-02 (4-6) ~~(2-8)~~		1710	G		X		1					1		X		
RI-SB-02 (6-8)		1725	G		X		1					1		X		
RI-SB-03 (6-8)		1845	G		X		1					1		X		
RI-SB-03 (16-18)		1830	G		X		1					1		X		
RI-SB-04 (6-8)		1910	G		X		1					1		X		
RI-SB-04 (14-16)		1920	G		X		1					1		X		
RI-SB-05 (2-4)		1935	G		X		1					1		X		
RI-SB-05 (10-12)		1945	G		X		1					1		X		

Remarks / Cooler I.D.: XF22026 CSD

Turn Around Time Required (Prior lab approval required for expedited TAT.): ☒ Standard ☐ Rush (Specify)
Sample Disposal: ☐ Return to Client ☒ Disposal by Lab
Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown
QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished by: [signature]	6/21/22	1700	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by: Fedex	6/22/22	0935	4. Laboratory received by: R. Reed	6/22/22	0935

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Circle) Yes No Ice Pack
Receipt Temp. 3.8 °C
Temp Blank ☒ Y ☐ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME003N2-01

Pace Analytical®

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106 Vantage Point Drive • West Columbia, SC 29172
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www.pacelabs.com

Number 133755

Client: Terracon Consultants Inc.	Report to Contact: Ethan Dinwiddie	Telephone No. / E-mail: (828)-550-5502 / ethan.dinwiddie@terracon.com	Quote No. 25322
Address: 2401 Brentwood Rd.	Sampler's Signature: Ethan Dinwiddie	Analysis (Attach list if more space is needed)	Page 1 of 2
City: Raleigh State: NC Zip Code: 27604	X		Lot # Bar Code (lab use only): Cooler 1 of 3
Project Name: T.A.M.P.	Printed Name: [signature]		
Project No.: 702/P145	P.O. No.		

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	G=Grab C=Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	No of Containers by Preservative Type: Unpres.	H2SO4	HNO3	HCl	NaOH	Stain Kit	Field Filtered	VOCs 8260	Remarks / Cooler I.D.
RI-SB-06 (4-6)	6/20/22	1930	G		X		1					1		X	XF22026 CSD
RI-SB-06 (16-18)	↓	1935	G		X		1					1		X	
RI-SB-02 (2-4)	↓	1710	G		X		1					1		X	
TB-01	6/21/22	—	G	X						2				X	
DUP-SB-01	6/21/22	—	G		X		1					1		X	

Turn Around Time Required (Prior lab approval required for expedited TAT.): ☒ Standard ☐ Rush (Specify)

Sample Disposal: ☐ Return to Client ☒ Disposal by Lab

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by: [signature]	6/21/22	1700	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by: Fedex	6/22/22	0935	4. Laboratory received by: K. Reed	6/22/22	0935

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY: Received on Ice (Circle) Yes No Ice Pack — Receipt Temp. 3.8 °C — Temp Blank ☒ Y ☐ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME003N2-01

Pace Analytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: Terracon Cooler Inspected by/date: TEC / 06/22/2022 Lot #: XF22026

Means of receipt: ☐ Pace ☐ Client ☐ UPS ☐ FedEx ☑ Other: HVL

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: 22-480

3.8 / 3.8 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 6 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☑ Yes	☐ No	☐ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☑ Yes	☐ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (½"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote #

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) XF22026-014(1) were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: TEC Date: 06/22/2022

Comments:

Report of Analysis

Terracon Consultants, Inc.
2401 Brentwood Road
Suite 107 I
Raleigh, NC 27604
Attention: Ethan Dinwiddie

Project Name: TAMP

Project Number: 7021P145

Lot Number:**XF22021**

Date Completed:07/11/2022

07/12/2022 3:52 PM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.
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Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
Terracon Consultants, Inc.
Lot Number: XF22021

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Additionally, the DoD QSM version 5.3 has been followed for these samples. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs, the DoD QSM, or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

Where applicable, all soil sample results (including LOQ and DL if requested) are corrected for dry weight unless flagged with a "W" qualifier.

VOA 8260D

The continuing calibration verification (CCV) associated with sample XF22021-013 (TB-02) for analytes: Acetone, 2-Butanone recovered above the upper control limit. The samples associated with this CCV were non-detect for the affected analytes; therefore, the data has been reported.

The laboratory control sample (LCS) for analytical batch 46528 exceeded acceptance criteria for Acetone. This analyte was biased high and was not detected in the associated sample: XF22021-013 (TB-02).

The initial calibration verification (ICV) associated with batch 46389 and samples XF22021-001, XF22021-002, XF22021-003, XF22021-004, XF22021-005, XF22021-006, XF22021-007, XF22021-008, XF22021-009, XF22021-010, XF22021-011, XF22021-012 exceeded control criteria for Dichlorodifluoromethane (128%). The data has been reported.

Also, the continuing calibration verification (CCV) associated with batch 46389 and samples XF22021-001, XF22021-002, XF22021-003, XF22021-004, XF22021-005, XF22021-006, XF22021-007, XF22021-008, XF22021-009, XF22021-010, XF22021-011, XF22021-012 for analyte(s): Dichlorodifluoromethane (66%) and Chloromethane (37%) recovered above the upper control limit. The samples associated with this CCV were non-detect for the affected analytes; therefore, the data has been reported.

Lastly, the laboratory control sample (LCS) for analytical batch 46389 exceeded acceptance criteria for the following analytes: Dichlorodifluoromethane (166%) and Chloromethane (137%). These analytes were biased high and were not detected in the associated samples: XF22021-001, XF22021-002, XF22021-003, XF22021-004, XF22021-005, XF22021-006, XF22021-007, XF22021-008, XF22021-009, XF22021-010, XF22021-011, XF22021-012.

The continuing calibration verification (CCV) associated with batch 46389 and samples XF22021-001, XF22021-002, XF22021-003, XF22021-004, XF22021-005, XF22021-006, XF22021-007, XF22021-008, XF22021-009, XF22021-010, XF22021-011, XF22021-012 for Vinyl chloride (34%) recovered above the upper control limit. The samples associated with this CCV were non-detect for the affected analytes; therefore, the data has been reported.

XF22021-001 (RI-SB-07 (2-4)) (Run 1) (Analysis Batch 46389) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF22021-002 (RI-SB-07 (12-14)) (Run 1) (Analysis Batch 46389) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF22021-003 (RI-SB-08 (4-6)) (Run 1) (Analysis Batch 46389) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF22021-004 (RI-SB-08 (6-8)) (Run 1) (Analysis Batch 46389) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF22021-005 (RI-SB-09a (1-4)) (Run 1) (Analysis Batch 46389) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF22021-006 (RI-SB-09b (6-8)) (Run 1) (Analysis Batch 46389) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF22021-007 (RI-SB-09b (10-12)) (Run 1) (Analysis Batch 46389) TCL VOCs (OLM04.3) (DOD QSM5.3)
XF22021-008 (RI-SB-10 (2-4)) (Run 1) (Analysis Batch 46389) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF22021-009 (RI-SB-10 (18-20)) (Run 1) (Analysis Batch 46389) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF22021-010 (RI-SB-11 (4-6)) (Run 1) (Analysis Batch 46389) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF22021-011 (RI-SB-11 (10-12)) (Run 1) (Analysis Batch 46389) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF22021-012 (RI-SB-12 (2-4)) (Run 1) (Analysis Batch 46389) TCL VOCs (OLM04.3) (DOD QSM 5.3)

The MS/MSD for batch 46389 and parent sample XF22021-009 (RI-SB-10 (18-20)), recovered outside of the control limits for multiple analytes. The associated LCS passed acceptance criteria except for Chloromethane and DCDFM recovering outside the upper control limit.

The Toluene-d8 surrogate recovery for sample XF22021-005 (RI-SB-09a (1-4)) was outside control limits. Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Trichloroethene was reported as an estimated value in sample XF22021-003 (RI-SB-08 (4-6)) as the result was above the upper calibration level. The sample was re-analyzed from the medium level (methanol) vial, but was not reported due to the result being below the LOQ; therefore, only the low level analysis has been reported.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Sample Summary

Terracon Consultants, Inc.

Lot Number: XF22021

Project Name: TAMP

Project Number: 7021P145

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	RI-SB-07 (2-4)	Solid	06/20/2022 1910	06/22/2022
002	RI-SB-07 (12-14)	Solid	06/20/2022 1915	06/22/2022
003	RI-SB-08 (4-6)	Solid	06/20/2022 1845	06/22/2022
004	RI-SB-08 (6-8)	Solid	06/20/2022 1855	06/22/2022
005	RI-SB-09a (1-4)	Solid	06/20/2022 1815	06/22/2022
006	RI-SB-09b (6-8)	Solid	06/20/2022 1820	06/22/2022
007	RI-SB-09b (10-12)	Solid	06/20/2022 1830	06/22/2022
008	RI-SB-10 (2-4)	Solid	06/21/2022 1145	06/22/2022
009	RI-SB-10 (18-20)	Solid	06/21/2022 1150	06/22/2022
010	RI-SB-11 (4-6)	Solid	06/21/2022 1200	06/22/2022
011	RI-SB-11 (10-12)	Solid	06/21/2022 1210	06/22/2022
012	RI-SB-12 (2-4)	Solid	06/21/2022 1420	06/22/2022
013	TB-02	Aqueous	06/21/2022	06/22/2022

(13 samples)

Detection Summary

Terracon Consultants, Inc.

Lot Number: XF22021

Project Name: TAMP

Project Number: 7021P145

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	RI-SB-07 (2-4)	Solid	Trichloroethene	8260D	0.0052		mg/kg	7
002	RI-SB-07 (12-14)	Solid	Acetone	8260D	0.01	J	mg/kg	8
002	RI-SB-07 (12-14)	Solid	Trichloroethene	8260D	0.0055		mg/kg	9
003	RI-SB-08 (4-6)	Solid	1,1-Dichloroethane	8260D	0.0035	J	mg/kg	10
003	RI-SB-08 (4-6)	Solid	cis-1,2-Dichloroethene	8260D	0.023		mg/kg	10
003	RI-SB-08 (4-6)	Solid	Tetrachloroethene	8260D	0.004	J	mg/kg	10
003	RI-SB-08 (4-6)	Solid	1,1,2-Trichloro-1,2,2-	8260D	0.035		mg/kg	10
003	RI-SB-08 (4-6)	Solid	Trichloroethene	8260D	0.47	E	mg/kg	11
003	RI-SB-08 (4-6)	Solid	Vinyl chloride	8260D	0.0091	J	mg/kg	11
004	RI-SB-08 (6-8)	Solid	1,1-Dichloroethane	8260D	0.0062		mg/kg	12
004	RI-SB-08 (6-8)	Solid	cis-1,2-Dichloroethene	8260D	0.064		mg/kg	12
004	RI-SB-08 (6-8)	Solid	Tetrachloroethene	8260D	0.0061	J	mg/kg	12
004	RI-SB-08 (6-8)	Solid	1,1,2-Trichloro-1,2,2-	8260D	0.041		mg/kg	12
004	RI-SB-08 (6-8)	Solid	Trichloroethene	8260D	1.2		mg/kg	13
005	RI-SB-09a (1-4)	Solid	Acetone	8260D	0.045	Q	mg/kg	14
005	RI-SB-09a (1-4)	Solid	Cyclohexane	8260D	0.01	Q	mg/kg	14
005	RI-SB-09a (1-4)	Solid	cis-1,2-Dichloroethene	8260D	0.016	Q	mg/kg	14
005	RI-SB-09a (1-4)	Solid	trans-1,2-Dichloroethene	8260D	0.002	JQ	mg/kg	14
005	RI-SB-09a (1-4)	Solid	Ethylbenzene	8260D	0.013	Q	mg/kg	14
005	RI-SB-09a (1-4)	Solid	Isopropylbenzene	8260D	0.035	Q	mg/kg	14
005	RI-SB-09a (1-4)	Solid	Methylcyclohexane	8260D	0.16	Q	mg/kg	14
005	RI-SB-09a (1-4)	Solid	Vinyl chloride	8260D	0.006	JQ	mg/kg	15
005	RI-SB-09a (1-4)	Solid	Xylenes (total)	8260D	0.049	Q	mg/kg	15
006	RI-SB-09b (6-8)	Solid	cis-1,2-Dichloroethene	8260D	0.0038	J	mg/kg	16
006	RI-SB-09b (6-8)	Solid	1,1,2-Trichloro-1,2,2-	8260D	0.021		mg/kg	16
006	RI-SB-09b (6-8)	Solid	Trichloroethene	8260D	0.061		mg/kg	17
007	RI-SB-09b (10-12)	Solid	cis-1,2-Dichloroethene	8260D	0.0027	J	mg/kg	18
007	RI-SB-09b (10-12)	Solid	1,1,2-Trichloro-1,2,2-	8260D	0.0048	J	mg/kg	18
007	RI-SB-09b (10-12)	Solid	Trichloroethene	8260D	0.032		mg/kg	19
010	RI-SB-11 (4-6)	Solid	Acetone	8260D	0.03		mg/kg	24

(30 detections)

Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**			Laboratory ID: **XF22021-001**
Description: **RI-SB-07 (2-4)**			Matrix: **Solid**
Date Sampled: **06/20/2022 1910**	Project Name: **TAMP**		% Solids: **80.5** **06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1106	JM1		46389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		0.018	0.0071	mg/Kg	1
Benzene	71-43-2	8260D	ND		0.0044	0.0018	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	ND		0.0044	0.0018	mg/Kg	1
Bromoform	75-25-2	8260D	ND		0.0044	0.0018	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.0089	0.0027	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	ND		0.018	0.0036	mg/Kg	1
Carbon disulfide	75-15-0	8260D	ND		0.0044	0.0018	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	ND		0.0044	0.0018	mg/Kg	1
Chlorobenzene	108-90-7	8260D	ND		0.0044	0.0018	mg/Kg	1
Chloroethane	75-00-3	8260D	ND		0.0044	0.0018	mg/Kg	1
Chloroform	67-66-3	8260D	ND		0.0044	0.0018	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND	L	0.0089	0.0027	mg/Kg	1
Cyclohexane	110-82-7	8260D	ND		0.0044	0.0018	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.0044	0.0018	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	ND		0.0044	0.0018	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.0044	0.0018	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.0044	0.0018	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.0044	0.0018	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.0044	0.0018	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	ND	L	0.0089	0.0027	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.0044	0.0018	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.0044	0.0018	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.0044	0.0018	mg/Kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.0044	0.0018	mg/Kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.0044	0.0018	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.0044	0.0018	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.0044	0.0018	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.0044	0.0018	mg/Kg	1
Ethylbenzene	100-41-4	8260D	ND		0.0044	0.0018	mg/Kg	1
2-Hexanone	591-78-6	8260D	ND		0.0089	0.0036	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	ND		0.0044	0.0018	mg/Kg	1
Methyl acetate	79-20-9	8260D	ND		0.0044	0.0018	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.0044	0.0018	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		0.0089	0.0036	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	ND		0.0044	0.0018	mg/Kg	1
Methylene chloride	75-09-2	8260D	ND		0.0044	0.0018	mg/Kg	1
Styrene	100-42-5	8260D	ND		0.0044	0.0018	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.0044	0.0018	mg/Kg	1
Tetrachloroethene	127-18-4	8260D	ND		0.0044	0.0018	mg/Kg	1
Toluene	108-88-3	8260D	ND		0.0044	0.0018	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		0.0044	0.0018	mg/Kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.0044	0.0018	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.0044	0.0018	mg/Kg	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.0044	0.0018	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22021-001**	
Description: **RI-SB-07 (2-4)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1910**	Project Name: **TAMP**	% Solids: **80.5**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1106	JM1		46389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**0.0052**		**0.0044**	**0.0018**	**mg/Kg**	**1**
Trichlorofluoromethane	75-69-4	8260D	ND		0.0044	0.0018	mg/Kg	1
Vinyl chloride	75-01-4	8260D	ND		0.0089	0.0027	mg/Kg	1
Xylenes (total)	1330-20-7	8260D	ND		0.0089	0.0036	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		107	79-119
Dibromofluoromethane		99	78-119
1,2-Dichloroethane-d4		101	71-136
Toluene-d8		111	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**			Laboratory ID: **XF22021-002**
Description: **RI-SB-07 (12-14)**			Matrix: **Solid**
Date Sampled: **06/20/2022 1915**	Project Name: **TAMP**		% Solids: **83.9** **06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1128	JM1		46389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**0.010**	**J**	**0.019**	**0.0075**	**mg/Kg**	**1**
Benzene	71-43-2	8260D	ND		0.0047	0.0019	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	ND		0.0047	0.0019	mg/Kg	1
Bromoform	75-25-2	8260D	ND		0.0047	0.0019	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.0093	0.0028	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	ND		0.019	0.0037	mg/Kg	1
Carbon disulfide	75-15-0	8260D	ND		0.0047	0.0019	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	ND		0.0047	0.0019	mg/Kg	1
Chlorobenzene	108-90-7	8260D	ND		0.0047	0.0019	mg/Kg	1
Chloroethane	75-00-3	8260D	ND		0.0047	0.0019	mg/Kg	1
Chloroform	67-66-3	8260D	ND		0.0047	0.0019	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND	L	0.0093	0.0028	mg/Kg	1
Cyclohexane	110-82-7	8260D	ND		0.0047	0.0019	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.0047	0.0019	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	ND		0.0047	0.0019	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.0047	0.0019	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.0047	0.0019	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.0047	0.0019	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.0047	0.0019	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	ND	L	0.0093	0.0028	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.0047	0.0019	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.0047	0.0019	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.0047	0.0019	mg/Kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.0047	0.0019	mg/Kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.0047	0.0019	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.0047	0.0019	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.0047	0.0019	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.0047	0.0019	mg/Kg	1
Ethylbenzene	100-41-4	8260D	ND		0.0047	0.0019	mg/Kg	1
2-Hexanone	591-78-6	8260D	ND		0.0093	0.0037	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	ND		0.0047	0.0019	mg/Kg	1
Methyl acetate	79-20-9	8260D	ND		0.0047	0.0019	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.0047	0.0019	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		0.0093	0.0037	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	ND		0.0047	0.0019	mg/Kg	1
Methylene chloride	75-09-2	8260D	ND		0.0047	0.0019	mg/Kg	1
Styrene	100-42-5	8260D	ND		0.0047	0.0019	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.0047	0.0019	mg/Kg	1
Tetrachloroethene	127-18-4	8260D	ND		0.0047	0.0019	mg/Kg	1
Toluene	108-88-3	8260D	ND		0.0047	0.0019	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		0.0047	0.0019	mg/Kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.0047	0.0019	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.0047	0.0019	mg/Kg	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.0047	0.0019	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22021-002**	
Description: **RI-SB-07 (12-14)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1915**	Project Name: **TAMP**	% Solids: **83.9**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1128	JM1		46389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**0.0055**		**0.0047**	**0.0019**	**mg/Kg**	**1**
Trichlorofluoromethane	75-69-4	8260D	ND		0.0047	0.0019	mg/Kg	1
Vinyl chloride	75-01-4	8260D	ND		0.0093	0.0028	mg/Kg	1
Xylenes (total)	1330-20-7	8260D	ND		0.0093	0.0037	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		107	79-119
Dibromofluoromethane		94	78-119
1,2-Dichloroethane-d4		99	71-136
Toluene-d8		105	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**			Laboratory ID: **XF22021-003**
Description: **RI-SB-08 (4-6)**			Matrix: **Solid**
Date Sampled: **06/20/2022 1845**	Project Name: **TAMP**		% Solids: **72.5** **06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1151	JM1		46389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		0.023	0.0094	mg/Kg	1
Benzene	71-43-2	8260D	ND		0.0059	0.0023	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	ND		0.0059	0.0023	mg/Kg	1
Bromoform	75-25-2	8260D	ND		0.0059	0.0023	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.012	0.0035	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	ND		0.023	0.0047	mg/Kg	1
Carbon disulfide	75-15-0	8260D	ND		0.0059	0.0023	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	ND		0.0059	0.0023	mg/Kg	1
Chlorobenzene	108-90-7	8260D	ND		0.0059	0.0023	mg/Kg	1
Chloroethane	75-00-3	8260D	ND		0.0059	0.0023	mg/Kg	1
Chloroform	67-66-3	8260D	ND		0.0059	0.0023	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND	L	0.012	0.0035	mg/Kg	1
Cyclohexane	110-82-7	8260D	ND		0.0059	0.0023	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.0059	0.0023	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	ND		0.0059	0.0023	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.0059	0.0023	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.0059	0.0023	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.0059	0.0023	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.0059	0.0023	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	ND	L	0.012	0.0035	mg/Kg	1
1,1-Dichloroethane	**75-34-3**	**8260D**	**0.0035**	**J**	**0.0059**	**0.0023**	**mg/Kg**	**1**
1,2-Dichloroethane	107-06-2	8260D	ND		0.0059	0.0023	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.0059	0.0023	mg/Kg	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**0.023**		**0.0059**	**0.0023**	**mg/Kg**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.0059	0.0023	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.0059	0.0023	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.0059	0.0023	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.0059	0.0023	mg/Kg	1
Ethylbenzene	100-41-4	8260D	ND		0.0059	0.0023	mg/Kg	1
2-Hexanone	591-78-6	8260D	ND		0.012	0.0047	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	ND		0.0059	0.0023	mg/Kg	1
Methyl acetate	79-20-9	8260D	ND		0.0059	0.0023	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.0059	0.0023	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		0.012	0.0047	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	ND		0.0059	0.0023	mg/Kg	1
Methylene chloride	75-09-2	8260D	ND		0.0059	0.0023	mg/Kg	1
Styrene	100-42-5	8260D	ND		0.0059	0.0023	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.0059	0.0023	mg/Kg	1
Tetrachloroethene	**127-18-4**	**8260D**	**0.0040**	**J**	**0.0059**	**0.0023**	**mg/Kg**	**1**
Toluene	108-88-3	8260D	ND		0.0059	0.0023	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**0.035**		**0.0059**	**0.0023**	**mg/Kg**	**1**
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.0059	0.0023	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.0059	0.0023	mg/Kg	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.0059	0.0023	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**			Laboratory ID: **XF22021-003**
Description: **RI-SB-08 (4-6)**			Matrix: **Solid**
Date Sampled: **06/20/2022 1845**	Project Name: **TAMP**		% Solids: **72.5** **06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1151	JM1		46389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**0.47**	**E**	**0.0059**	**0.0023**	**mg/Kg**	**1**
Trichlorofluoromethane	75-69-4	8260D	ND		0.0059	0.0023	mg/Kg	1
Vinyl chloride	**75-01-4**	**8260D**	**0.0091**	**J**	**0.012**	**0.0035**	**mg/Kg**	**1**
Xylenes (total)	1330-20-7	8260D	ND		0.012	0.0047	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		110	79-119
Dibromofluoromethane		103	78-119
1,2-Dichloroethane-d4		111	71-136
Toluene-d8		106	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**			Laboratory ID: **XF22021-004**
Description: **RI-SB-08 (6-8)**			Matrix: **Solid**
Date Sampled: **06/20/2022 1855**	Project Name: **TAMP**		% Solids: **71.1** **06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260D	1	06/28/2022 1214	JM1		46389	
2	5035 High	8260D	1	07/01/2022 1230	JM1		46842	6.10

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		0.025	0.0099	mg/Kg	1
Benzene	71-43-2	8260D	ND		0.0062	0.0025	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	ND		0.0062	0.0025	mg/Kg	1
Bromoform	75-25-2	8260D	ND		0.0062	0.0025	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.012	0.0037	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	ND		0.025	0.0049	mg/Kg	1
Carbon disulfide	75-15-0	8260D	ND		0.0062	0.0025	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	ND		0.0062	0.0025	mg/Kg	1
Chlorobenzene	108-90-7	8260D	ND		0.0062	0.0025	mg/Kg	1
Chloroethane	75-00-3	8260D	ND		0.0062	0.0025	mg/Kg	1
Chloroform	67-66-3	8260D	ND		0.0062	0.0025	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND	L	0.012	0.0037	mg/Kg	1
Cyclohexane	110-82-7	8260D	ND		0.0062	0.0025	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.0062	0.0025	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	ND		0.0062	0.0025	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.0062	0.0025	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.0062	0.0025	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.0062	0.0025	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.0062	0.0025	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	ND	L	0.012	0.0037	mg/Kg	1
1,1-Dichloroethane	**75-34-3**	**8260D**	**0.0062**		**0.0062**	**0.0025**	**mg/Kg**	**1**
1,2-Dichloroethane	107-06-2	8260D	ND		0.0062	0.0025	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.0062	0.0025	mg/Kg	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**0.064**		**0.0062**	**0.0025**	**mg/Kg**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.0062	0.0025	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.0062	0.0025	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.0062	0.0025	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.0062	0.0025	mg/Kg	1
Ethylbenzene	100-41-4	8260D	ND		0.0062	0.0025	mg/Kg	1
2-Hexanone	591-78-6	8260D	ND		0.012	0.0049	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	ND		0.0062	0.0025	mg/Kg	1
Methyl acetate	79-20-9	8260D	ND		0.0062	0.0025	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.0062	0.0025	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		0.012	0.0049	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	ND		0.0062	0.0025	mg/Kg	1
Methylene chloride	75-09-2	8260D	ND		0.0062	0.0025	mg/Kg	1
Styrene	100-42-5	8260D	ND		0.0062	0.0025	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.0062	0.0025	mg/Kg	1
Tetrachloroethene	**127-18-4**	**8260D**	**0.0061**	**J**	**0.0062**	**0.0025**	**mg/Kg**	**1**
Toluene	108-88-3	8260D	ND		0.0062	0.0025	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**0.041**		**0.0062**	**0.0025**	**mg/Kg**	**1**
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.0062	0.0025	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.0062	0.0025	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22021-004**	
Description: **RI-SB-08 (6-8)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1855**	Project Name: **TAMP**	% Solids: **71.1**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260D	1	06/28/2022 1214	JM1		46389	
2	5035 High	8260D	1	07/01/2022 1230	JM1		46842	6.10

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.0062	0.0025	mg/Kg	1
Trichloroethene	**79-01-6**	**8260D**	**1.2**		**0.39**	**0.16**	**mg/Kg**	**2**
Trichlorofluoromethane	75-69-4	8260D	ND		0.0062	0.0025	mg/Kg	1
Vinyl chloride	75-01-4	8260D	ND		0.012	0.0037	mg/Kg	1
Xylenes (total)	1330-20-7	8260D	ND		0.012	0.0049	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		106	79-119		112	79-119
Dibromofluoromethane		101	78-119		106	78-119
1,2-Dichloroethane-d4		97	71-136		110	71-136
Toluene-d8		105	85-116		111	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**			Laboratory ID: **XF22021-005**
Description: **RI-SB-09a (1-4)**			Matrix: **Solid**
Date Sampled: **06/20/2022 1815**	Project Name: **TAMP**		% Solids: **77.1** **06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1237	JM1		46389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**0.045**	**Q**	**0.019**	**0.0076**	**mg/Kg**	**1**
Benzene	71-43-2	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
Bromoform	75-25-2	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND	Q	0.0096	0.0029	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	ND	Q	0.019	0.0038	mg/Kg	1
Carbon disulfide	75-15-0	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
Chlorobenzene	108-90-7	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
Chloroethane	75-00-3	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
Chloroform	67-66-3	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND	QL	0.0096	0.0029	mg/Kg	1
Cyclohexane	**110-82-7**	**8260D**	**0.010**	**Q**	**0.0048**	**0.0019**	**mg/Kg**	**1**
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	ND	QL	0.0096	0.0029	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**0.016**	**Q**	**0.0048**	**0.0019**	**mg/Kg**	**1**
trans-1,2-Dichloroethene	**156-60-5**	**8260D**	**0.0020**	**JQ**	**0.0048**	**0.0019**	**mg/Kg**	**1**
1,2-Dichloropropane	78-87-5	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
Ethylbenzene	**100-41-4**	**8260D**	**0.013**	**Q**	**0.0048**	**0.0019**	**mg/Kg**	**1**
2-Hexanone	591-78-6	8260D	ND	Q	0.0096	0.0038	mg/Kg	1
Isopropylbenzene	**98-82-8**	**8260D**	**0.035**	**Q**	**0.0048**	**0.0019**	**mg/Kg**	**1**
Methyl acetate	79-20-9	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	ND	Q	0.0096	0.0038	mg/Kg	1
Methylcyclohexane	**108-87-2**	**8260D**	**0.16**	**Q**	**0.0048**	**0.0019**	**mg/Kg**	**1**
Methylene chloride	75-09-2	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
Styrene	100-42-5	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
Tetrachloroethene	127-18-4	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
Toluene	108-88-3	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
1,1,2-Trichloroethane	79-00-5	8260D	ND	Q	0.0048	0.0019	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22021-005**	
Description: **RI-SB-09a (1-4)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1815**	Project Name: **TAMP**	% Solids: **77.1**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1237	JM1		46389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
Trichlorofluoromethane	75-69-4	8260D	ND	Q	0.0048	0.0019	mg/Kg	1
Vinyl chloride	**75-01-4**	**8260D**	**0.0060**	**JQ**	**0.0096**	**0.0029**	**mg/Kg**	**1**
Xylenes (total)	**1330-20-7**	**8260D**	**0.049**	**Q**	**0.0096**	**0.0038**	**mg/Kg**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		98	79-119
Dibromofluoromethane		103	78-119
1,2-Dichloroethane-d4		105	71-136
Toluene-d8	N	126	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22021-006**	
Description: **RI-SB-09b (6-8)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1820**	Project Name: **TAMP**	% Solids: **78.3**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1323	JM1		46389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		0.021	0.0083	mg/Kg	1
Benzene	71-43-2	8260D	ND		0.0052	0.0021	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	ND		0.0052	0.0021	mg/Kg	1
Bromoform	75-25-2	8260D	ND		0.0052	0.0021	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.010	0.0031	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	ND		0.021	0.0041	mg/Kg	1
Carbon disulfide	75-15-0	8260D	ND		0.0052	0.0021	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	ND		0.0052	0.0021	mg/Kg	1
Chlorobenzene	108-90-7	8260D	ND		0.0052	0.0021	mg/Kg	1
Chloroethane	75-00-3	8260D	ND		0.0052	0.0021	mg/Kg	1
Chloroform	67-66-3	8260D	ND		0.0052	0.0021	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND	L	0.010	0.0031	mg/Kg	1
Cyclohexane	110-82-7	8260D	ND		0.0052	0.0021	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.0052	0.0021	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	ND		0.0052	0.0021	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.0052	0.0021	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.0052	0.0021	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.0052	0.0021	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.0052	0.0021	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	ND	L	0.010	0.0031	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.0052	0.0021	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.0052	0.0021	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.0052	0.0021	mg/Kg	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**0.0038**	**J**	**0.0052**	**0.0021**	**mg/Kg**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.0052	0.0021	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.0052	0.0021	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.0052	0.0021	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.0052	0.0021	mg/Kg	1
Ethylbenzene	100-41-4	8260D	ND		0.0052	0.0021	mg/Kg	1
2-Hexanone	591-78-6	8260D	ND		0.010	0.0041	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	ND		0.0052	0.0021	mg/Kg	1
Methyl acetate	79-20-9	8260D	ND		0.0052	0.0021	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.0052	0.0021	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		0.010	0.0041	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	ND		0.0052	0.0021	mg/Kg	1
Methylene chloride	75-09-2	8260D	ND		0.0052	0.0021	mg/Kg	1
Styrene	100-42-5	8260D	ND		0.0052	0.0021	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.0052	0.0021	mg/Kg	1
Tetrachloroethene	127-18-4	8260D	ND		0.0052	0.0021	mg/Kg	1
Toluene	108-88-3	8260D	ND		0.0052	0.0021	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**0.021**		**0.0052**	**0.0021**	**mg/Kg**	**1**
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.0052	0.0021	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.0052	0.0021	mg/Kg	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.0052	0.0021	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22021-006**	
Description: **RI-SB-09b (6-8)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1820**	Project Name: **TAMP**	% Solids: **78.3**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1323	JM1		46389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**0.061**		**0.0052**	**0.0021**	**mg/Kg**	**1**
Trichlorofluoromethane	75-69-4	8260D	ND		0.0052	0.0021	mg/Kg	1
Vinyl chloride	75-01-4	8260D	ND		0.010	0.0031	mg/Kg	1
Xylenes (total)	1330-20-7	8260D	ND		0.010	0.0041	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		108	79-119
Dibromofluoromethane		101	78-119
1,2-Dichloroethane-d4		100	71-136
Toluene-d8		106	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22021-007**	
Description: **RI-SB-09b (10-12)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1830**	Project Name: **TAMP**	% Solids: **75.4**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1346	JM1		46389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		0.021	0.0086	mg/Kg	1
Benzene	71-43-2	8260D	ND		0.0054	0.0021	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	ND		0.0054	0.0021	mg/Kg	1
Bromoform	75-25-2	8260D	ND		0.0054	0.0021	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.011	0.0032	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	ND		0.021	0.0043	mg/Kg	1
Carbon disulfide	75-15-0	8260D	ND		0.0054	0.0021	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	ND		0.0054	0.0021	mg/Kg	1
Chlorobenzene	108-90-7	8260D	ND		0.0054	0.0021	mg/Kg	1
Chloroethane	75-00-3	8260D	ND		0.0054	0.0021	mg/Kg	1
Chloroform	67-66-3	8260D	ND		0.0054	0.0021	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND	L	0.011	0.0032	mg/Kg	1
Cyclohexane	110-82-7	8260D	ND		0.0054	0.0021	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.0054	0.0021	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	ND		0.0054	0.0021	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.0054	0.0021	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.0054	0.0021	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.0054	0.0021	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.0054	0.0021	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	ND	L	0.011	0.0032	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.0054	0.0021	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.0054	0.0021	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.0054	0.0021	mg/Kg	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**0.0027**	**J**	**0.0054**	**0.0021**	**mg/Kg**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.0054	0.0021	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.0054	0.0021	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.0054	0.0021	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.0054	0.0021	mg/Kg	1
Ethylbenzene	100-41-4	8260D	ND		0.0054	0.0021	mg/Kg	1
2-Hexanone	591-78-6	8260D	ND		0.011	0.0043	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	ND		0.0054	0.0021	mg/Kg	1
Methyl acetate	79-20-9	8260D	ND		0.0054	0.0021	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.0054	0.0021	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		0.011	0.0043	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	ND		0.0054	0.0021	mg/Kg	1
Methylene chloride	75-09-2	8260D	ND		0.0054	0.0021	mg/Kg	1
Styrene	100-42-5	8260D	ND		0.0054	0.0021	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.0054	0.0021	mg/Kg	1
Tetrachloroethene	127-18-4	8260D	ND		0.0054	0.0021	mg/Kg	1
Toluene	108-88-3	8260D	ND		0.0054	0.0021	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**0.0048**	**J**	**0.0054**	**0.0021**	**mg/Kg**	**1**
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.0054	0.0021	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.0054	0.0021	mg/Kg	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.0054	0.0021	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22021-007**	
Description: **RI-SB-09b (10-12)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1830**	Project Name: **TAMP**	% Solids: **75.4**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1346	JM1		46389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**0.032**		**0.0054**	**0.0021**	**mg/Kg**	**1**
Trichlorofluoromethane	75-69-4	8260D	ND		0.0054	0.0021	mg/Kg	1
Vinyl chloride	75-01-4	8260D	ND		0.011	0.0032	mg/Kg	1
Xylenes (total)	1330-20-7	8260D	ND		0.011	0.0043	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		107	79-119
Dibromofluoromethane		101	78-119
1,2-Dichloroethane-d4		98	71-136
Toluene-d8		103	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**			Laboratory ID: **XF22021-008**
Description: **RI-SB-10 (2-4)**			Matrix: **Solid**
Date Sampled: **06/21/2022 1145**	Project Name: **TAMP**		% Solids: **75.6** **06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1408	JM1		46389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		0.023	0.0090	mg/Kg	1
Benzene	71-43-2	8260D	ND		0.0057	0.0023	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	ND		0.0057	0.0023	mg/Kg	1
Bromoform	75-25-2	8260D	ND		0.0057	0.0023	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.011	0.0034	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	ND		0.023	0.0045	mg/Kg	1
Carbon disulfide	75-15-0	8260D	ND		0.0057	0.0023	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	ND		0.0057	0.0023	mg/Kg	1
Chlorobenzene	108-90-7	8260D	ND		0.0057	0.0023	mg/Kg	1
Chloroethane	75-00-3	8260D	ND		0.0057	0.0023	mg/Kg	1
Chloroform	67-66-3	8260D	ND		0.0057	0.0023	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND	L	0.011	0.0034	mg/Kg	1
Cyclohexane	110-82-7	8260D	ND		0.0057	0.0023	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.0057	0.0023	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	ND		0.0057	0.0023	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.0057	0.0023	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.0057	0.0023	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.0057	0.0023	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.0057	0.0023	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	ND	L	0.011	0.0034	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.0057	0.0023	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.0057	0.0023	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.0057	0.0023	mg/Kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.0057	0.0023	mg/Kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.0057	0.0023	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.0057	0.0023	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.0057	0.0023	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.0057	0.0023	mg/Kg	1
Ethylbenzene	100-41-4	8260D	ND		0.0057	0.0023	mg/Kg	1
2-Hexanone	591-78-6	8260D	ND		0.011	0.0045	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	ND		0.0057	0.0023	mg/Kg	1
Methyl acetate	79-20-9	8260D	ND		0.0057	0.0023	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.0057	0.0023	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		0.011	0.0045	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	ND		0.0057	0.0023	mg/Kg	1
Methylene chloride	75-09-2	8260D	ND		0.0057	0.0023	mg/Kg	1
Styrene	100-42-5	8260D	ND		0.0057	0.0023	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.0057	0.0023	mg/Kg	1
Tetrachloroethene	127-18-4	8260D	ND		0.0057	0.0023	mg/Kg	1
Toluene	108-88-3	8260D	ND		0.0057	0.0023	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		0.0057	0.0023	mg/Kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.0057	0.0023	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.0057	0.0023	mg/Kg	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.0057	0.0023	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22021-008**	
Description: **RI-SB-10 (2-4)**		Matrix: **Solid**	
Date Sampled: **06/21/2022 1145**	Project Name: **TAMP**	% Solids: **75.6**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1408	JM1		46389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.0057	0.0023	mg/Kg	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.0057	0.0023	mg/Kg	1
Vinyl chloride	75-01-4	8260D	ND		0.011	0.0034	mg/Kg	1
Xylenes (total)	1330-20-7	8260D	ND		0.011	0.0045	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		106	79-119
Dibromofluoromethane		101	78-119
1,2-Dichloroethane-d4		100	71-136
Toluene-d8		105	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22021-009**	
Description: **RI-SB-10 (18-20)**		Matrix: **Solid**	
Date Sampled: **06/21/2022 1150**	Project Name: **TAMP**	% Solids: **82.8**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1432	JM1		46389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		0.020	0.0081	mg/Kg	1
Benzene	71-43-2	8260D	ND	S	0.0051	0.0020	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	ND	S	0.0051	0.0020	mg/Kg	1
Bromoform	75-25-2	8260D	ND	S	0.0051	0.0020	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.010	0.0030	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	ND		0.020	0.0041	mg/Kg	1
Carbon disulfide	75-15-0	8260D	ND		0.0051	0.0020	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	ND	S	0.0051	0.0020	mg/Kg	1
Chlorobenzene	108-90-7	8260D	ND	S	0.0051	0.0020	mg/Kg	1
Chloroethane	75-00-3	8260D	ND		0.0051	0.0020	mg/Kg	1
Chloroform	67-66-3	8260D	ND	S	0.0051	0.0020	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND	LS	0.010	0.0030	mg/Kg	1
Cyclohexane	110-82-7	8260D	ND		0.0051	0.0020	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.0051	0.0020	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	ND	S	0.0051	0.0020	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND	S	0.0051	0.0020	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	ND	S	0.0051	0.0020	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	ND	S	0.0051	0.0020	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	ND	S	0.0051	0.0020	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	ND	LS	0.010	0.0030	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	ND	S	0.0051	0.0020	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	ND	S	0.0051	0.0020	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	ND	S	0.0051	0.0020	mg/Kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND	S	0.0051	0.0020	mg/Kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND	S	0.0051	0.0020	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	ND	S	0.0051	0.0020	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND	S	0.0051	0.0020	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND	S	0.0051	0.0020	mg/Kg	1
Ethylbenzene	100-41-4	8260D	ND	S	0.0051	0.0020	mg/Kg	1
2-Hexanone	591-78-6	8260D	ND		0.010	0.0041	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	ND	S	0.0051	0.0020	mg/Kg	1
Methyl acetate	79-20-9	8260D	ND		0.0051	0.0020	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND	S	0.0051	0.0020	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	ND	S	0.010	0.0041	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	ND		0.0051	0.0020	mg/Kg	1
Methylene chloride	75-09-2	8260D	ND	S	0.0051	0.0020	mg/Kg	1
Styrene	100-42-5	8260D	ND	S	0.0051	0.0020	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND	S	0.0051	0.0020	mg/Kg	1
Tetrachloroethene	127-18-4	8260D	ND	S	0.0051	0.0020	mg/Kg	1
Toluene	108-88-3	8260D	ND	S	0.0051	0.0020	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		0.0051	0.0020	mg/Kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND	S	0.0051	0.0020	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	ND	S	0.0051	0.0020	mg/Kg	1
1,1,2-Trichloroethane	79-00-5	8260D	ND	S	0.0051	0.0020	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22021-009**	
Description: **RI-SB-10 (18-20)**		Matrix: **Solid**	
Date Sampled: **06/21/2022 1150**	Project Name: **TAMP**	% Solids: **82.8**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1432	JM1		46389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND	S	0.0051	0.0020	mg/Kg	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.0051	0.0020	mg/Kg	1
Vinyl chloride	75-01-4	8260D	ND	S	0.010	0.0030	mg/Kg	1
Xylenes (total)	1330-20-7	8260D	ND	S	0.010	0.0041	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		108	79-119
Dibromofluoromethane		102	78-119
1,2-Dichloroethane-d4		102	71-136
Toluene-d8		105	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**			Laboratory ID: **XF22021-010**
Description: **RI-SB-11 (4-6)**			Matrix: **Solid**
Date Sampled: **06/21/2022 1200**	Project Name: **TAMP**		% Solids: **83.1** **06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1455	JM1		46389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**0.030**		**0.021**	**0.0085**	**mg/Kg**	**1**
Benzene	71-43-2	8260D	ND		0.0053	0.0021	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	ND		0.0053	0.0021	mg/Kg	1
Bromoform	75-25-2	8260D	ND		0.0053	0.0021	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.011	0.0032	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	ND		0.021	0.0043	mg/Kg	1
Carbon disulfide	75-15-0	8260D	ND		0.0053	0.0021	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	ND		0.0053	0.0021	mg/Kg	1
Chlorobenzene	108-90-7	8260D	ND		0.0053	0.0021	mg/Kg	1
Chloroethane	75-00-3	8260D	ND		0.0053	0.0021	mg/Kg	1
Chloroform	67-66-3	8260D	ND		0.0053	0.0021	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND	L	0.011	0.0032	mg/Kg	1
Cyclohexane	110-82-7	8260D	ND		0.0053	0.0021	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.0053	0.0021	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	ND		0.0053	0.0021	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.0053	0.0021	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.0053	0.0021	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.0053	0.0021	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.0053	0.0021	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	ND	L	0.011	0.0032	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.0053	0.0021	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.0053	0.0021	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.0053	0.0021	mg/Kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.0053	0.0021	mg/Kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.0053	0.0021	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.0053	0.0021	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.0053	0.0021	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.0053	0.0021	mg/Kg	1
Ethylbenzene	100-41-4	8260D	ND		0.0053	0.0021	mg/Kg	1
2-Hexanone	591-78-6	8260D	ND		0.011	0.0043	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	ND		0.0053	0.0021	mg/Kg	1
Methyl acetate	79-20-9	8260D	ND		0.0053	0.0021	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.0053	0.0021	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		0.011	0.0043	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	ND		0.0053	0.0021	mg/Kg	1
Methylene chloride	75-09-2	8260D	ND		0.0053	0.0021	mg/Kg	1
Styrene	100-42-5	8260D	ND		0.0053	0.0021	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.0053	0.0021	mg/Kg	1
Tetrachloroethene	127-18-4	8260D	ND		0.0053	0.0021	mg/Kg	1
Toluene	108-88-3	8260D	ND		0.0053	0.0021	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		0.0053	0.0021	mg/Kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.0053	0.0021	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.0053	0.0021	mg/Kg	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.0053	0.0021	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22021-010**	
Description: **RI-SB-11 (4-6)**		Matrix: **Solid**	
Date Sampled: **06/21/2022 1200**	Project Name: **TAMP**	% Solids: **83.1**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1455	JM1		46389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.0053	0.0021	mg/Kg	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.0053	0.0021	mg/Kg	1
Vinyl chloride	75-01-4	8260D	ND		0.011	0.0032	mg/Kg	1
Xylenes (total)	1330-20-7	8260D	ND		0.011	0.0043	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		105	79-119
Dibromofluoromethane		96	78-119
1,2-Dichloroethane-d4		101	71-136
Toluene-d8		106	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**			Laboratory ID: **XF22021-011**
Description: **RI-SB-11 (10-12)**			Matrix: **Solid**
Date Sampled: **06/21/2022 1210**	Project Name: **TAMP**		% Solids: **74.2** **06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1518	JM1		46389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		0.024	0.0094	mg/Kg	1
Benzene	71-43-2	8260D	ND		0.0059	0.0024	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	ND		0.0059	0.0024	mg/Kg	1
Bromoform	75-25-2	8260D	ND		0.0059	0.0024	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.012	0.0035	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	ND		0.024	0.0047	mg/Kg	1
Carbon disulfide	75-15-0	8260D	ND		0.0059	0.0024	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	ND		0.0059	0.0024	mg/Kg	1
Chlorobenzene	108-90-7	8260D	ND		0.0059	0.0024	mg/Kg	1
Chloroethane	75-00-3	8260D	ND		0.0059	0.0024	mg/Kg	1
Chloroform	67-66-3	8260D	ND		0.0059	0.0024	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND	L	0.012	0.0035	mg/Kg	1
Cyclohexane	110-82-7	8260D	ND		0.0059	0.0024	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.0059	0.0024	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	ND		0.0059	0.0024	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.0059	0.0024	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.0059	0.0024	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.0059	0.0024	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.0059	0.0024	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	ND	L	0.012	0.0035	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.0059	0.0024	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.0059	0.0024	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.0059	0.0024	mg/Kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.0059	0.0024	mg/Kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.0059	0.0024	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.0059	0.0024	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.0059	0.0024	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.0059	0.0024	mg/Kg	1
Ethylbenzene	100-41-4	8260D	ND		0.0059	0.0024	mg/Kg	1
2-Hexanone	591-78-6	8260D	ND		0.012	0.0047	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	ND		0.0059	0.0024	mg/Kg	1
Methyl acetate	79-20-9	8260D	ND		0.0059	0.0024	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.0059	0.0024	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		0.012	0.0047	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	ND		0.0059	0.0024	mg/Kg	1
Methylene chloride	75-09-2	8260D	ND		0.0059	0.0024	mg/Kg	1
Styrene	100-42-5	8260D	ND		0.0059	0.0024	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.0059	0.0024	mg/Kg	1
Tetrachloroethene	127-18-4	8260D	ND		0.0059	0.0024	mg/Kg	1
Toluene	108-88-3	8260D	ND		0.0059	0.0024	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		0.0059	0.0024	mg/Kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.0059	0.0024	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.0059	0.0024	mg/Kg	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.0059	0.0024	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22021-011**	
Description: **RI-SB-11 (10-12)**		Matrix: **Solid**	
Date Sampled: **06/21/2022 1210**	Project Name: **TAMP**	% Solids: **74.2**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1518	JM1		46389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.0059	0.0024	mg/Kg	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.0059	0.0024	mg/Kg	1
Vinyl chloride	75-01-4	8260D	ND		0.012	0.0035	mg/Kg	1
Xylenes (total)	1330-20-7	8260D	ND		0.012	0.0047	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		107	79-119
Dibromofluoromethane		99	78-119
1,2-Dichloroethane-d4		97	71-136
Toluene-d8		104	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**			Laboratory ID: **XF22021-012**
Description: **RI-SB-12 (2-4)**			Matrix: **Solid**
Date Sampled: **06/21/2022 1420**	Project Name: **TAMP**		% Solids: **95.9** **06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1541	JM1		46389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		0.019	0.0075	mg/Kg	1
Benzene	71-43-2	8260D	ND		0.0047	0.0019	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	ND		0.0047	0.0019	mg/Kg	1
Bromoform	75-25-2	8260D	ND		0.0047	0.0019	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.0094	0.0028	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	ND		0.019	0.0038	mg/Kg	1
Carbon disulfide	75-15-0	8260D	ND		0.0047	0.0019	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	ND		0.0047	0.0019	mg/Kg	1
Chlorobenzene	108-90-7	8260D	ND		0.0047	0.0019	mg/Kg	1
Chloroethane	75-00-3	8260D	ND		0.0047	0.0019	mg/Kg	1
Chloroform	67-66-3	8260D	ND		0.0047	0.0019	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND	L	0.0094	0.0028	mg/Kg	1
Cyclohexane	110-82-7	8260D	ND		0.0047	0.0019	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.0047	0.0019	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	ND		0.0047	0.0019	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.0047	0.0019	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.0047	0.0019	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.0047	0.0019	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.0047	0.0019	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	ND	L	0.0094	0.0028	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.0047	0.0019	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.0047	0.0019	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.0047	0.0019	mg/Kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.0047	0.0019	mg/Kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.0047	0.0019	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.0047	0.0019	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.0047	0.0019	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.0047	0.0019	mg/Kg	1
Ethylbenzene	100-41-4	8260D	ND		0.0047	0.0019	mg/Kg	1
2-Hexanone	591-78-6	8260D	ND		0.0094	0.0038	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	ND		0.0047	0.0019	mg/Kg	1
Methyl acetate	79-20-9	8260D	ND		0.0047	0.0019	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.0047	0.0019	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		0.0094	0.0038	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	ND		0.0047	0.0019	mg/Kg	1
Methylene chloride	75-09-2	8260D	ND		0.0047	0.0019	mg/Kg	1
Styrene	100-42-5	8260D	ND		0.0047	0.0019	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.0047	0.0019	mg/Kg	1
Tetrachloroethene	127-18-4	8260D	ND		0.0047	0.0019	mg/Kg	1
Toluene	108-88-3	8260D	ND		0.0047	0.0019	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		0.0047	0.0019	mg/Kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.0047	0.0019	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.0047	0.0019	mg/Kg	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.0047	0.0019	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22021-012**	
Description: **RI-SB-12 (2-4)**		Matrix: **Solid**	
Date Sampled: **06/21/2022 1420**	Project Name: **TAMP**	% Solids: **95.9**	**06/26/2022 1851**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/28/2022 1541	JM1		46389

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.0047	0.0019	mg/Kg	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.0047	0.0019	mg/Kg	1
Vinyl chloride	75-01-4	8260D	ND		0.0094	0.0028	mg/Kg	1
Xylenes (total)	1330-20-7	8260D	ND		0.0094	0.0038	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		106	79-119
Dibromofluoromethane		93	78-119
1,2-Dichloroethane-d4		99	71-136
Toluene-d8		100	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XF22021-013**

Description: **TB-02** Matrix: **Aqueous**

Date Sampled: **06/21/2022** Project Name: **TAMP**

Date Received: **06/22/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	06/25/2022 1720	PAP		46528
2	5030B	8260D	1	06/30/2022 1145	BBW		46681

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND	L	20	5.0	ug/L	1
Benzene	71-43-2	8260D	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		1.0	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		2.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		1.0	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		1.0	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		1.0	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		1.0	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		1.0	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		1.0	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		1.0	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		1.0	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		1.0	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		1.0	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		1.0	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		1.0	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		1.0	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		1.0	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		1.0	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		1.0	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		1.0	0.40	ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22021-013**	
Description: **TB-02**		Matrix: **Aqueous**	
Date Sampled: **06/21/2022**	Project Name: **TAMP**		
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	06/25/2022 1720	PAP		46528
2	5030B	8260D	1	06/30/2022 1145	BBW		46681

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	ND		1.0	0.40	ug/L	1
Trichloroethene	79-01-6	8260D	ND		1.0	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		1.0	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		1.0	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		96	81-118		101	81-118
Bromofluorobenzene		103	85-114		91	85-114
Toluene-d8		97	89-112		96	89-112
Dibromofluoromethane		99	80-119		102	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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QC Summary

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46389-001
Batch: 46389
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	0.020	0.0080	mg/kg	06/28/2022 0950
Benzene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Bromodichloromethane	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Bromoform	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Bromomethane (Methyl bromide)	ND		1	0.010	0.0030	mg/kg	06/28/2022 0950
2-Butanone (MEK)	ND		1	0.020	0.0040	mg/kg	06/28/2022 0950
Carbon disulfide	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Carbon tetrachloride	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Chlorobenzene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Chloroethane	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Chloroform	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Chloromethane (Methyl chloride)	ND		1	0.010	0.0030	mg/kg	06/28/2022 0950
Cyclohexane	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Dibromochloromethane	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
1,2-Dibromoethane (EDB)	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
1,2-Dichlorobenzene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
1,3-Dichlorobenzene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
1,4-Dichlorobenzene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Dichlorodifluoromethane	ND		1	0.010	0.0030	mg/kg	06/28/2022 0950
1,1-Dichloroethane	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
1,2-Dichloroethane	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
1,1-Dichloroethene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
cis-1,2-Dichloroethene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
trans-1,2-Dichloroethene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
1,2-Dichloropropane	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
cis-1,3-Dichloropropene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
trans-1,3-Dichloropropene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Ethylbenzene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
2-Hexanone	ND		1	0.010	0.0040	mg/kg	06/28/2022 0950
Isopropylbenzene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Methyl acetate	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Methyl tertiary butyl ether (MTBE)	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
4-Methyl-2-pentanone	ND		1	0.010	0.0040	mg/kg	06/28/2022 0950
Methylcyclohexane	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Methylene chloride	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Styrene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
1,1,2,2-Tetrachloroethane	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Tetrachloroethene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Toluene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
1,2,4-Trichlorobenzene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
1,1,1-Trichloroethane	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
1,1,2-Trichloroethane	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46389-001
Batch: 46389
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Trichlorofluoromethane	ND		1	0.0050	0.0020	mg/kg	06/28/2022 0950
Vinyl chloride	ND		1	0.010	0.0030	mg/kg	06/28/2022 0950
Xylenes (total)	ND		1	0.010	0.0040	mg/kg	06/28/2022 0950

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		116	79-119
Dibromofluoromethane		98	78-119
1,2-Dichloroethane-d4		101	71-136
Toluene-d8		107	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46389-002
Batch: 46389
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	0.10	0.11		1	109	36-164	06/28/2022 0927
Benzene	0.050	0.051		1	102	77-121	06/28/2022 0927
Bromodichloromethane	0.050	0.051		1	101	75-127	06/28/2022 0927
Bromoform	0.050	0.050		1	100	67-132	06/28/2022 0927
Bromomethane (Methyl bromide)	0.050	0.057		1	114	53-143	06/28/2022 0927
2-Butanone (MEK)	0.10	0.12		1	115	51-148	06/28/2022 0927
Carbon disulfide	0.050	0.051		1	102	63-132	06/28/2022 0927
Carbon tetrachloride	0.050	0.050		1	100	70-135	06/28/2022 0927
Chlorobenzene	0.050	0.051		1	102	79-120	06/28/2022 0927
Chloroethane	0.050	0.057		1	115	59-139	06/28/2022 0927
Chloroform	0.050	0.049		1	98	78-123	06/28/2022 0927
Chloromethane (Methyl chloride)	0.050	0.068	N	1	137	50-136	06/28/2022 0927
Cyclohexane	0.050	0.045		1	90	67-131	06/28/2022 0927
1,2-Dibromo-3-chloropropane (DBCP)	0.050	0.048		1	97	61-132	06/28/2022 0927
Dibromochloromethane	0.050	0.050		1	99	75-127	06/28/2022 0927
1,2-Dibromoethane (EDB)	0.050	0.050		1	99	78-122	06/28/2022 0927
1,2-Dichlorobenzene	0.050	0.051		1	101	78-121	06/28/2022 0927
1,3-Dichlorobenzene	0.050	0.051		1	101	77-121	06/28/2022 0927
1,4-Dichlorobenzene	0.050	0.051		1	102	75-120	06/28/2022 0927
Dichlorodifluoromethane	0.050	0.083	N	1	165	29-149	06/28/2022 0927
1,1-Dichloroethane	0.050	0.050		1	100	76-125	06/28/2022 0927
1,2-Dichloroethane	0.050	0.051		1	103	73-128	06/28/2022 0927
1,1-Dichloroethene	0.050	0.050		1	99	70-131	06/28/2022 0927
cis-1,2-Dichloroethene	0.050	0.050		1	100	77-123	06/28/2022 0927
trans-1,2-Dichloroethene	0.050	0.048		1	95	74-125	06/28/2022 0927
1,2-Dichloropropane	0.050	0.051		1	102	76-123	06/28/2022 0927
cis-1,3-Dichloropropene	0.050	0.052		1	104	74-126	06/28/2022 0927
trans-1,3-Dichloropropene	0.050	0.051		1	101	71-130	06/28/2022 0927
Ethylbenzene	0.050	0.051		1	102	76-122	06/28/2022 0927
2-Hexanone	0.10	0.097		1	97	53-145	06/28/2022 0927
Isopropylbenzene	0.050	0.052		1	103	68-134	06/28/2022 0927
Methyl acetate	0.050	0.044		1	88	53-144	06/28/2022 0927
Methyl tertiary butyl ether (MTBE)	0.050	0.045		1	90	73-125	06/28/2022 0927
4-Methyl-2-pentanone	0.10	0.093		1	93	65-135	06/28/2022 0927
Methylcyclohexane	0.050	0.050		1	100	66-133	06/28/2022 0927
Methylene chloride	0.050	0.049		1	99	70-128	06/28/2022 0927
Styrene	0.050	0.052		1	104	76-124	06/28/2022 0927
1,1,2,2-Tetrachloroethane	0.050	0.048		1	95	70-124	06/28/2022 0927
Tetrachloroethene	0.050	0.051		1	101	73-128	06/28/2022 0927
Toluene	0.050	0.049		1	98	77-121	06/28/2022 0927
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.050	0.049		1	99	66-136	06/28/2022 0927
1,2,4-Trichlorobenzene	0.050	0.052		1	104	67-129	06/28/2022 0927
1,1,1-Trichloroethane	0.050	0.049		1	99	73-130	06/28/2022 0927
1,1,2-Trichloroethane	0.050	0.050		1	100	78-121	06/28/2022 0927

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46389-002
Batch: 46389
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	0.050	0.050		1	100	77-123	06/28/2022 0927
Trichlorofluoromethane	0.050	0.054		1	108	62-140	06/28/2022 0927
Vinyl chloride	0.050	0.067		1	134	56-135	06/28/2022 0927
Xylenes (total)	0.10	0.10		1	103	78-124	06/28/2022 0927

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		97	79-119
Dibromofluoromethane		92	78-119
1,2-Dichloroethane-d4		98	71-136
Toluene-d8		96	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MS

Sample ID: XF22021-009MS
Batch: 46389
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	ND	0.10	0.13		1	134	36-164	06/28/2022 1908
Benzene	ND	0.050	0.044		1	89	77-121	06/28/2022 1908
Bromodichloromethane	ND	0.050	0.041		1	83	75-127	06/28/2022 1908
Bromoform	ND	0.050	0.040		1	80	67-132	06/28/2022 1908
Bromomethane (Methyl bromide)	ND	0.050	0.054		1	108	53-143	06/28/2022 1908
2-Butanone (MEK)	ND	0.10	0.14		1	143	51-148	06/28/2022 1908
Carbon disulfide	ND	0.050	0.050		1	100	63-132	06/28/2022 1908
Carbon tetrachloride	ND	0.050	0.049		1	97	70-135	06/28/2022 1908
Chlorobenzene	ND	0.050	0.041		1	81	79-120	06/28/2022 1908
Chloroethane	ND	0.050	0.058		1	116	59-139	06/28/2022 1908
Chloroform	ND	0.050	0.042		1	83	78-123	06/28/2022 1908
Chloromethane (Methyl chloride)	ND	0.050	0.070	N	1	139	50-136	06/28/2022 1908
Cyclohexane	ND	0.050	0.052		1	103	67-131	06/28/2022 1908
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.050	0.049		1	98	61-132	06/28/2022 1908
Dibromochloromethane	ND	0.050	0.040		1	80	75-127	06/28/2022 1908
1,2-Dibromoethane (EDB)	ND	0.050	0.041		1	82	78-122	06/28/2022 1908
1,2-Dichlorobenzene	ND	0.050	0.037	N	1	74	78-121	06/28/2022 1908
1,3-Dichlorobenzene	ND	0.050	0.039		1	77	77-121	06/28/2022 1908
1,4-Dichlorobenzene	ND	0.050	0.038		1	77	75-120	06/28/2022 1908
Dichlorodifluoromethane	ND	0.050	0.10	N	1	200	29-149	06/28/2022 1908
1,1-Dichloroethane	ND	0.050	0.044		1	88	76-125	06/28/2022 1908
1,2-Dichloroethane	ND	0.050	0.043		1	87	73-128	06/28/2022 1908
1,1-Dichloroethene	ND	0.050	0.049		1	98	70-131	06/28/2022 1908
cis-1,2-Dichloroethene	ND	0.050	0.042		1	84	77-123	06/28/2022 1908
trans-1,2-Dichloroethene	ND	0.050	0.045		1	90	74-125	06/28/2022 1908
1,2-Dichloropropane	ND	0.050	0.043		1	86	76-123	06/28/2022 1908
cis-1,3-Dichloropropene	ND	0.050	0.042		1	83	74-126	06/28/2022 1908
trans-1,3-Dichloropropene	ND	0.050	0.040		1	80	71-130	06/28/2022 1908
Ethylbenzene	ND	0.050	0.043		1	85	76-122	06/28/2022 1908
2-Hexanone	ND	0.10	0.11		1	105	53-145	06/28/2022 1908
Isopropylbenzene	ND	0.050	0.044		1	87	68-134	06/28/2022 1908
Methyl acetate	ND	0.050	0.052		1	104	53-144	06/28/2022 1908
Methyl tertiary butyl ether (MTBE)	ND	0.050	0.037		1	74	73-125	06/28/2022 1908
4-Methyl-2-pentanone	ND	0.10	0.095		1	95	65-135	06/28/2022 1908
Methylcyclohexane	ND	0.050	0.059		1	118	66-133	06/28/2022 1908
Methylene chloride	ND	0.050	0.041		1	81	70-128	06/28/2022 1908
Styrene	ND	0.050	0.041		1	82	76-124	06/28/2022 1908
1,1,2,2-Tetrachloroethane	ND	0.050	0.040		1	80	70-124	06/28/2022 1908
Tetrachloroethene	ND	0.050	0.047		1	94	73-128	06/28/2022 1908
Toluene	ND	0.050	0.041		1	83	77-121	06/28/2022 1908
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.050	0.059		1	118	66-136	06/28/2022 1908
1,2,4-Trichlorobenzene	ND	0.050	0.039		1	77	67-129	06/28/2022 1908
1,1,1-Trichloroethane	ND	0.050	0.046		1	92	73-130	06/28/2022 1908
1,1,2-Trichloroethane	ND	0.050	0.040		1	79	78-121	06/28/2022 1908

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MS

Sample ID: XF22021-009MS
Batch: 46389
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	ND	0.050	0.046		1	92	77-123	06/28/2022 1908
Trichlorofluoromethane	ND	0.050	0.064		1	129	62-140	06/28/2022 1908
Vinyl chloride	ND	0.050	0.076	N	1	152	56-135	06/28/2022 1908
Xylenes (total)	ND	0.10	0.083		1	83	78-124	06/28/2022 1908

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		107	79-119
Dibromofluoromethane		99	78-119
1,2-Dichloroethane-d4		111	71-136
Toluene-d8		102	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XF22021-009MD
Batch: 46389
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acetone	ND	0.10	0.088	+	1	86	42	36-164	20	06/28/2022 1931
Benzene	ND	0.051	0.032	N,+	1	63	31	77-121	20	06/28/2022 1931
Bromodichloromethane	ND	0.051	0.031	N,+	1	61	28	75-127	20	06/28/2022 1931
Bromoform	ND	0.051	0.030	N,+	1	59	28	67-132	20	06/28/2022 1931
Bromomethane (Methyl bromide)	ND	0.051	0.041	+	1	80	29	53-143	20	06/28/2022 1931
2-Butanone (MEK)	ND	0.10	0.088	+	1	86	47	51-148	20	06/28/2022 1931
Carbon disulfide	ND	0.051	0.037	+	1	73	29	63-132	20	06/28/2022 1931
Carbon tetrachloride	ND	0.051	0.034	N,+	1	67	36	70-135	20	06/28/2022 1931
Chlorobenzene	ND	0.051	0.032	N,+	1	62	25	79-120	20	06/28/2022 1931
Chloroethane	ND	0.051	0.042	+	1	81	34	59-139	20	06/28/2022 1931
Chloroform	ND	0.051	0.031	N,+	1	60	31	78-123	20	06/28/2022 1931
Chloromethane (Methyl chloride)	ND	0.051	0.050	+	1	97	33	50-136	20	06/28/2022 1931
Cyclohexane	ND	0.051	0.034	+	1	67	40	67-131	20	06/28/2022 1931
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.051	0.034	+	1	67	35	61-132	20	06/28/2022 1931
Dibromochloromethane	ND	0.051	0.030	N,+	1	58	29	75-127	20	06/28/2022 1931
1,2-Dibromoethane (EDB)	ND	0.051	0.031	N,+	1	61	27	78-122	20	06/28/2022 1931
1,2-Dichlorobenzene	ND	0.051	0.030	N,+	1	58	22	78-121	20	06/28/2022 1931
1,3-Dichlorobenzene	ND	0.051	0.030	N,+	1	59	26	77-121	20	06/28/2022 1931
1,4-Dichlorobenzene	ND	0.051	0.031	N,+	1	60	22	75-120	20	06/28/2022 1931
Dichlorodifluoromethane	ND	0.051	0.065	+	1	127	43	29-149	20	06/28/2022 1931
1,1-Dichloroethane	ND	0.051	0.032	N,+	1	62	33	76-125	20	06/28/2022 1931
1,2-Dichloroethane	ND	0.051	0.032	N,+	1	63	30	73-128	20	06/28/2022 1931
1,1-Dichloroethene	ND	0.051	0.035	N,+	1	68	34	70-131	20	06/28/2022 1931
cis-1,2-Dichloroethene	ND	0.051	0.031	N,+	1	61	30	77-123	20	06/28/2022 1931
trans-1,2-Dichloroethene	ND	0.051	0.033	N,+	1	64	32	74-125	20	06/28/2022 1931
1,2-Dichloropropane	ND	0.051	0.032	N,+	1	63	29	76-123	20	06/28/2022 1931
cis-1,3-Dichloropropene	ND	0.051	0.031	N,+	1	62	27	74-126	20	06/28/2022 1931
trans-1,3-Dichloropropene	ND	0.051	0.031	N,+	1	61	25	71-130	20	06/28/2022 1931
Ethylbenzene	ND	0.051	0.032	N,+	1	63	28	76-122	20	06/28/2022 1931
2-Hexanone	ND	0.10	0.074	+	1	72	35	53-145	20	06/28/2022 1931
Isopropylbenzene	ND	0.051	0.032	N,+	1	63	30	68-134	20	06/28/2022 1931
Methyl acetate	ND	0.051	0.038	+	1	75	30	53-144	20	06/28/2022 1931
Methyl tertiary butyl ether (MTBE)	ND	0.051	0.026	N,+	1	50	37	73-125	20	06/28/2022 1931
4-Methyl-2-pentanone	ND	0.10	0.065	N,+	1	64	37	65-135	20	06/28/2022 1931
Methylcyclohexane	ND	0.051	0.039	+	1	76	42	66-133	20	06/28/2022 1931
Methylene chloride	ND	0.051	0.031	N,+	1	62	25	70-128	20	06/28/2022 1931
Styrene	ND	0.051	0.032	N,+	1	63	25	76-124	20	06/28/2022 1931
1,1,2,2-Tetrachloroethane	ND	0.051	0.030	N,+	1	60	27	70-124	20	06/28/2022 1931
Tetrachloroethene	ND	0.051	0.033	N,+	1	64	36	73-128	20	06/28/2022 1931
Toluene	ND	0.051	0.031	N,+	1	61	29	77-121	20	06/28/2022 1931
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.051	0.039	+	1	76	41	66-136	20	06/28/2022 1931
1,2,4-Trichlorobenzene	ND	0.051	0.030	N,+	1	58	27	67-129	20	06/28/2022 1931
1,1,1-Trichloroethane	ND	0.051	0.033	N,+	1	64	34	73-130	20	06/28/2022 1931
1,1,2-Trichloroethane	ND	0.051	0.030	N,+	1	59	28	78-121	20	06/28/2022 1931

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XF22021-009MD
Batch: 46389
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Trichloroethene	ND	0.051	0.032	N,+	1	63	36	77-123	20	06/28/2022 1931
Trichlorofluoromethane	ND	0.051	0.045	+	1	89	35	62-140	20	06/28/2022 1931
Vinyl chloride	ND	0.051	0.052	+	1	102	38	56-135	20	06/28/2022 1931
Xylenes (total)	ND	0.10	0.063	N,+	1	62	27	78-124	20	06/28/2022 1931

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		108	79-119
Dibromofluoromethane		97	78-119
1,2-Dichloroethane-d4		109	71-136
Toluene-d8		104	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46528-001
Batch: 46528
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	20	5.0	ug/L	06/25/2022 1611
Benzene	ND		1	1.0	0.40	ug/L	06/25/2022 1611
Bromodichloromethane	ND		1	1.0	0.40	ug/L	06/25/2022 1611
Bromoform	ND		1	1.0	0.40	ug/L	06/25/2022 1611
Bromomethane (Methyl bromide)	ND		1	2.0	0.40	ug/L	06/25/2022 1611
2-Butanone (MEK)	ND		1	10	2.0	ug/L	06/25/2022 1611
Carbon tetrachloride	ND		1	1.0	0.40	ug/L	06/25/2022 1611
Chlorobenzene	ND		1	1.0	0.40	ug/L	06/25/2022 1611
Chloroethane	ND		1	2.0	0.40	ug/L	06/25/2022 1611
Chloroform	ND		1	1.0	0.40	ug/L	06/25/2022 1611
Chloromethane (Methyl chloride)	ND		1	2.0	0.50	ug/L	06/25/2022 1611
Cyclohexane	ND		1	1.0	0.40	ug/L	06/25/2022 1611
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	1.0	0.40	ug/L	06/25/2022 1611
Dibromochloromethane	ND		1	1.0	0.40	ug/L	06/25/2022 1611
1,2-Dibromoethane (EDB)	ND		1	1.0	0.40	ug/L	06/25/2022 1611
1,2-Dichlorobenzene	ND		1	1.0	0.40	ug/L	06/25/2022 1611
1,3-Dichlorobenzene	ND		1	1.0	0.40	ug/L	06/25/2022 1611
1,4-Dichlorobenzene	ND		1	1.0	0.40	ug/L	06/25/2022 1611
Dichlorodifluoromethane	ND		1	2.0	0.60	ug/L	06/25/2022 1611
1,1-Dichloroethane	ND		1	1.0	0.40	ug/L	06/25/2022 1611
1,2-Dichloroethane	ND		1	1.0	0.40	ug/L	06/25/2022 1611
1,1-Dichloroethene	ND		1	1.0	0.40	ug/L	06/25/2022 1611
cis-1,2-Dichloroethene	ND		1	1.0	0.40	ug/L	06/25/2022 1611
trans-1,2-Dichloroethene	ND		1	1.0	0.40	ug/L	06/25/2022 1611
1,2-Dichloropropane	ND		1	1.0	0.40	ug/L	06/25/2022 1611
cis-1,3-Dichloropropene	ND		1	1.0	0.40	ug/L	06/25/2022 1611
trans-1,3-Dichloropropene	ND		1	1.0	0.40	ug/L	06/25/2022 1611
Ethylbenzene	ND		1	1.0	0.40	ug/L	06/25/2022 1611
2-Hexanone	ND		1	10	2.0	ug/L	06/25/2022 1611
Isopropylbenzene	ND		1	1.0	0.40	ug/L	06/25/2022 1611
Methyl acetate	ND		1	1.0	0.40	ug/L	06/25/2022 1611
Methyl tertiary butyl ether (MTBE)	ND		1	1.0	0.40	ug/L	06/25/2022 1611
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	06/25/2022 1611
Methylcyclohexane	ND		1	5.0	0.40	ug/L	06/25/2022 1611
Methylene chloride	ND		1	1.0	0.40	ug/L	06/25/2022 1611
Styrene	ND		1	1.0	0.41	ug/L	06/25/2022 1611
1,1,2,2-Tetrachloroethane	ND		1	1.0	0.40	ug/L	06/25/2022 1611
Tetrachloroethene	ND		1	1.0	0.40	ug/L	06/25/2022 1611
Toluene	ND		1	1.0	0.40	ug/L	06/25/2022 1611
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	06/25/2022 1611
1,2,4-Trichlorobenzene	ND		1	1.0	0.40	ug/L	06/25/2022 1611
1,1,1-Trichloroethane	ND		1	1.0	0.40	ug/L	06/25/2022 1611
1,1,2-Trichloroethane	ND		1	1.0	0.40	ug/L	06/25/2022 1611
Trichloroethene	ND		1	1.0	0.40	ug/L	06/25/2022 1611

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46528-001
Batch: 46528
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichlorofluoromethane	ND		1	1.0	0.40	ug/L	06/25/2022 1611
Vinyl chloride	ND		1	1.0	0.40	ug/L	06/25/2022 1611
Xylenes (total)	ND		1	1.0	0.40	ug/L	06/25/2022 1611

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		92	81-118
Bromofluorobenzene		104	85-114
Toluene-d8		101	89-112
Dibromofluoromethane		100	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46528-002
Batch: 46528
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	170	N	1	170	39-160	06/25/2022 1504
Benzene	50	47		1	94	79-120	06/25/2022 1504
Bromodichloromethane	50	47		1	93	79-125	06/25/2022 1504
Bromoform	50	46		1	92	66-130	06/25/2022 1504
Bromomethane (Methyl bromide)	50	47		1	94	53-141	06/25/2022 1504
2-Butanone (MEK)	100	120		1	124	56-143	06/25/2022 1504
Carbon tetrachloride	50	47		1	94	72-136	06/25/2022 1504
Chlorobenzene	50	46		1	92	82-118	06/25/2022 1504
Chloroethane	50	45		1	89	60-138	06/25/2022 1504
Chloroform	50	48		1	95	79-124	06/25/2022 1504
Chloromethane (Methyl chloride)	50	44		1	87	50-139	06/25/2022 1504
Cyclohexane	50	45		1	89	71-130	06/25/2022 1504
1,2-Dibromo-3-chloropropane (DBCP)	50	45		1	90	62-128	06/25/2022 1504
Dibromochloromethane	50	48		1	95	74-126	06/25/2022 1504
1,2-Dibromoethane (EDB)	50	49		1	99	77-121	06/25/2022 1504
1,2-Dichlorobenzene	50	47		1	94	80-119	06/25/2022 1504
1,3-Dichlorobenzene	50	47		1	93	80-119	06/25/2022 1504
1,4-Dichlorobenzene	50	46		1	93	79-118	06/25/2022 1504
Dichlorodifluoromethane	50	47		1	94	32-152	06/25/2022 1504
1,1-Dichloroethane	50	47		1	93	77-125	06/25/2022 1504
1,2-Dichloroethane	50	47		1	95	73-128	06/25/2022 1504
1,1-Dichloroethene	50	47		1	93	71-131	06/25/2022 1504
cis-1,2-Dichloroethene	50	49		1	97	78-123	06/25/2022 1504
trans-1,2-Dichloroethene	50	47		1	94	75-124	06/25/2022 1504
1,2-Dichloropropane	50	47		1	94	78-122	06/25/2022 1504
cis-1,3-Dichloropropene	50	48		1	96	75-124	06/25/2022 1504
trans-1,3-Dichloropropene	50	48		1	96	73-127	06/25/2022 1504
Ethylbenzene	50	46		1	92	79-121	06/25/2022 1504
2-Hexanone	100	100		1	102	57-139	06/25/2022 1504
Isopropylbenzene	50	47		1	94	72-131	06/25/2022 1504
Methyl acetate	50	50		1	101	56-136	06/25/2022 1504
Methyl tertiary butyl ether (MTBE)	50	51		1	102	71-124	06/25/2022 1504
4-Methyl-2-pentanone	100	100		1	104	67-130	06/25/2022 1504
Methylcyclohexane	50	45		1	91	72-132	06/25/2022 1504
Methylene chloride	50	43		1	87	74-124	06/25/2022 1504
Styrene	50	48		1	96	78-123	06/25/2022 1504
1,1,2,2-Tetrachloroethane	50	47		1	94	71-121	06/25/2022 1504
Tetrachloroethene	50	48		1	96	74-129	06/25/2022 1504
Toluene	50	46		1	93	80-121	06/25/2022 1504
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	45		1	90	70-136	06/25/2022 1504
1,2,4-Trichlorobenzene	50	47		1	94	69-130	06/25/2022 1504
1,1,1-Trichloroethane	50	47		1	93	74-131	06/25/2022 1504
1,1,2-Trichloroethane	50	47		1	94	80-119	06/25/2022 1504
Trichloroethene	50	48		1	97	79-123	06/25/2022 1504

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46528-002
Batch: 46528
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichlorofluoromethane	50	48		1	95	65-141	06/25/2022 1504
Vinyl chloride	50	47		1	94	58-137	06/25/2022 1504
Xylenes (total)	100	93		1	93	79-121	06/25/2022 1504

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		90	81-118
Bromofluorobenzene		93	85-114
Toluene-d8		90	89-112
Dibromofluoromethane		94	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46681-001
Batch: 46681
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Carbon disulfide	ND		1	1.0	0.40	ug/L	06/30/2022 1035

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		99	81-118
Bromofluorobenzene		92	85-114
Toluene-d8		95	89-112
Dibromofluoromethane		100	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46681-002
Batch: 46681
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Carbon disulfide	50	46		1	93	64-133	06/30/2022 0929

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		97	81-118
Bromofluorobenzene		89	85-114
Toluene-d8		93	89-112
Dibromofluoromethane		99	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46842-001
Batch: 46842
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035 High

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.25	0.10	mg/kg	07/01/2022 1142

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		106	79-119
Dibromofluoromethane		103	78-119
1,2-Dichloroethane-d4		107	71-136
Toluene-d8		102	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46842-002
Batch: 46842
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035 High

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	2.5	2.8		1	110	77-123	07/01/2022 1119

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		89	79-119
Dibromofluoromethane		88	78-119
1,2-Dichloroethane-d4		92	71-136
Toluene-d8		96	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Chain of Custody
and
Miscellaneous Documents

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www.pacelabs.com

Number 133754

Client: Terracon Consultants Inc.
Address: 2401 Brentwood Rd
City: Raleigh State: NC Zip Code: 27604
Project Name: T.A.M.P.
Project No.: 7021P145
P.O. No.:

Report to Contact: Ethan Dinwiddie
Sampler's Signature: [signature]
Printed Name: Ethan Dinwiddie

Telephone No. / E-mail: (828)-550-5502 / ethan.dinwiddie@terracon.com
Analysis (Attach list if more space is needed)

Quote No.: 25322
Page 1 of 2

XF22021
CSD

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	G-Grab Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	No of Containers by Preservative Type: Unpres.	H2SO4	HNO3	HCl	NaOH	Stock Kit	Field Filtered	VOCs 8260	Remarks / Cooler I.D.
RI-SB-07 (2-4)	6/20	1910	G		X		1					1		X	
RI-SB-07 (12-14)	↓	1915	G		X		1					1		X	
RI-SB-08 (4-6)	↓	1845	G		X		1					1		X	
RI-SB-08 (6-8)	↓	1855	G		X		1					1		X	
RI-SB-09a (1-4)	↓	1815	G		X		1					1		X	
RI-SB-09b (6-8)	↓	1820	G		X		1					1		X	
RI-SB-09b (10-12)	↓	1830	G		X		1					1		X	
RI-SB-10 (2-4)	6/21	1145	G		X		1					1		X	
RI-SB-10 (18-20)	↓	1150	G		X		1					1		X	
RI-SB-11 (4-6)	↓	1200	G		X		1					1		X	

Turn Around Time Required (Prior lab approval required for expedited TAT.) ☒ Standard ☐ Rush (Specify)

Sample Disposal ☐ Return to Client ☒ Disposal by Lab

Possible Hazard Identification ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☒ Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by [signature]	6/21/22	1700	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by FedEx	6-22-22	0935	4. Laboratory Received by [signature]	6-22-22	0935

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on ice (Circle) Yes No Ice Pack
Receipt Temp. 4.9 °C
Temp Blank ☒ Y ☐ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME003N2-01

3

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Number 133753

Client: Terracon Consultants Inc.	Report to Contact: Ethan Dinwiddie	Telephone No. / E-mail: (828) 550-5502 / ethan.dinwiddie@terracon.com	Quote No. 25322
Address: 2401 Brentwood Rd.	Sampler's Signature: X [signature]	Analysis (Attach list if more space is needed)	Page 2 of 2
City: Raleigh State: NC Zip Code: 27604	Printed Name: Ethan Dinwiddie		XF22021
Project Name: T.A.M.P.			CSD
Project No.: 7021P145	P.O. No.		

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	Grab (G) Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	No of Containers by Preservative Type: Unpres.	H2SO4	HNO3	HCl	NaOH	Ethanol	Field Filtered	VOCs 8260	Remarks / Cooler I.D.
RI-SB-11 (10-12)	6/21	1210	G		X		1					1		X	
RI-SB-12 (2-4)	↓	1420	G		X		1					1		X	
TB-02	↓	—	G	X						2				X	
MS/MSD-SB-01	↓	1200	G		X		2					2		X	

Turn Around Time Required (Prior lab approval required for expedited TAT.) ☒ Standard ☐ Rush (Specify)

Sample Disposal: ☐ Return to Client ☒ Disposal by Lab

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by [signature]	6/21	1700	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by FedEx	6-22-22	2935	4. Laboratory Received by [signature]	6-22-22	[signature]

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on ice (Circle) Yes No Ice Pack Receipt Temp. 4.9 °C Temp Blank Y N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME008N2-01

Pace Analytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: TERRACON Cooler Inspected by/date: TEC / 06/22/2022 Lot #: XF22021

Means of receipt: ☐ Pace ☐ Client ☐ UPS ☑ FedEx ☐ Other: _____

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: 22-480

4.9 / 4.9 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 6 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☑ Yes	☐ No	☐ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? _____
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☑ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☑ Yes	☐ No	☐ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote #

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA _____ were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA _____ were received with bubbles >6 mm in diameter.

Samples(s) NA _____ were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: TEC Date: 06/22/2022

Comments:

Report of Analysis

Terracon Consultants, Inc.
2401 Brentwood Road
Suite 107 I
Raleigh, NC 27604
Attention: Ethan Dinwiddie

Project Name: TAMP

Project Number: 7021P145

Lot Number:**XF22018**

Date Completed:07/11/2022

08/02/2022 1:56 PM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.
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Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
Terracon Consultants, Inc.
Lot Number: XF22018

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Additionally, the DoD QSM version 5.3 has been followed for these samples. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs, the DoD QSM, or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

Where applicable, all soil sample results (including LOQ and DL if requested) are corrected for dry weight unless flagged with a "W" qualifier.

VOA 8260D

The laboratory control sample (LCS) for analytical batch 46528 exceeded acceptance criteria for Acetone. This analyte was biased high and was not detected in the associated sample: XF22018-012 (EB-01).

The continuing calibration verification (CCV) associated with sample XF22018-012 (EB-01) for analytes: Acetone and 2-Butanone recovered above the upper control limit. The sample associated with this CCV were non-detect for the affected analytes; therefore, the data has been reported.

The method blank associated with batch 46528 had Carbon disulfide detected at a concentration that was above the DL but below the LOQ. All samples associated with this method blank were non-detect for carbon disulfide.

SVOA 8270E

Samples XF22018-003 (RI-SB-03 (2-6)) and XF22018-013 (RI-SB-12(2-6)) were diluted due to appearance or extract color. The LOQ has been elevated to reflect the dilution.

The initial calibration verification (ICV) associated with samples XF22018-001, XF22018-002, XF22018-003, XF22018-004, XF22018-005, XF22018-006, XF22018-007, XF22018-008, XF22018-010, XF22018-011, and XF22018-013 exceeded DOD control criteria (80-120%) for Nitrobenzene (79%). The data has been reported.

XF22018-001 (RI-SB-01 (2-8)) (Run 1) (Analysis Batch 47038) (Prep Batch 45902) TCL Semivolatiles
XF22018-002 (RI-SB-02 (2-0)) (Run 1) (Analysis Batch 47038) (Prep Batch 45902) TCL Semivolatiles
XF22018-003 (RI-SB-03 (2-6)) (Run 1) (Analysis Batch 47038) (Prep Batch 45902) TCL Semivolatiles
XF22018-004 (RI-SB-05 (2-8)) (Run 1) (Analysis Batch 47038) (Prep Batch 45902) TCL Semivolatiles
XF22018-005 (RI-SB-06 (4-8)) (Run 1) (Analysis Batch 47038) (Prep Batch 45902) TCL Semivolatiles
XF22018-006 (RI-SB-07 (2-6)) (Run 1) (Analysis Batch 47038) (Prep Batch 45902) TCL Semivolatiles
XF22018-007 (RI-SB-08 (2-6)) (Run 1) (Analysis Batch 47038) (Prep Batch 45902) TCL Semivolatiles
XF22018-008 (RI-SB-09b (2-8)) (Run 1) (Analysis Batch 47038) (Prep Batch 45902) TCL Semivolatiles
XF22018-010 (RI-SB-11 (10-12)) (Run 1) (Analysis Batch 47038) (Prep Batch 45902) TCL Semivolatiles
XF22018-011 (RI-SB-10 (6-10)) (Run 1) (Analysis Batch 47038) (Prep Batch 45902) TCL Semivolatiles
XF22018-013 (RI-SB-12(2-6)) (Run 1) (Analysis Batch 47038) (Prep Batch 45902) TCL Semivolatiles

The initial calibration verification (ICV) associated for sample XF22018-012 (EB-01) exceeded DOD control criteria (80-120%) for Nitrobenzene (79%). The data has been reported.

XF22018-012 (EB-01) (Run 1) (Analysis Batch 47050) (Prep Batch 45818) TCL Semivolatiles (RVE)

The method blank associated with batch 45818 had Naphthalene detected at a concentration that was above the DL but below the LOQ. All samples associated with this method blank that have detections for Naphthalene have been flagged with a "B”.

The LCS for batch 45818 recovered outside the upper control for bis (2-ethylhexyl)phthalate. all of the associated samples were non-detect for this analyte.

Metals 6020B
Due to sample matrix effect on the internal standard (ISTD), a dilution was required for the following samples: XF22018-002, XF22018-003, XF22018-004, XF22018-005, XF22018-006, XF22018-008, XF22018-010, and XF22018-011. The LOQ has been adjusted accordingly.

XF22018-002 (RI-SB-02 (2-0)) (Run 2) (Analysis Batch 47013) (Prep Batch 45893) ICP-MS Metals
XF22018-003 (RI-SB-03 (2-6)) (Run 2) (Analysis Batch 47013) (Prep Batch 45893) ICP-MS Metals
XF22018-004 (RI-SB-05 (2-8)) (Run 2) (Analysis Batch 47013) (Prep Batch 45893) ICP-MS Metals
XF22018-005 (RI-SB-06 (4-8)) (Run 2) (Analysis Batch 47013) (Prep Batch 45893) ICP-MS Metals
XF22018-006 (RI-SB-07 (2-6)) (Run 2) (Analysis Batch 47013) (Prep Batch 45893) ICP-MS Metals

XF22018-008 (RI-SB-09b (2-8)) (Run 2) (Analysis Batch 47013) (Prep Batch 45893) ICP-MS Metals
XF22018-010 (RI-SB-11 (10-12)) (Run 2) (Analysis Batch 47013) (Prep Batch 45893) ICP-MS Metals
XF22018-011 (RI-SB-10 (6-10)) (Run 2) (Analysis Batch 47013) (Prep Batch 45893) ICP-MS Metals

The MS/MSD for batch 45893 and parent sample XF22018-011 (RI-SB-10 (6-10)), recovered outside control limits for a few elements. The associated LCS passed acceptance criteria.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the

cover page.

Sample Summary

Terracon Consultants, Inc.

Lot Number: XF22018

Project Name: TAMP

Project Number: 7021P145

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	RI-SB-01 (2-8)	Solid	06/20/2022 1800	06/22/2022
002	RI-SB-02 (2-0)	Solid	06/20/2022 1710	06/22/2022
003	RI-SB-03 (2-6)	Solid	06/20/2022 1900	06/22/2022
004	RI-SB-05 (2-8)	Solid	06/20/2022 2000	06/22/2022
005	RI-SB-06 (4-8)	Solid	06/20/2022 1945	06/22/2022
006	RI-SB-07 (2-6)	Solid	06/20/2022 1925	06/22/2022
007	RI-SB-08 (2-6)	Solid	06/20/2022 1900	06/22/2022
008	RI-SB-09b (2-8)	Solid	06/20/2022 1835	06/22/2022
010	RI-SB-11 (10-12)	Solid	06/21/2022 1240	06/22/2022
011	RI-SB-10 (6-10)	Solid	06/21/2022 1200	06/22/2022
012	EB-01	Aqueous	06/21/2022 1435	06/22/2022
013	RI-SB-12(2-6)	Solid	06/21/2022 1420	06/22/2022

(12 samples)

Detection Summary
Terracon Consultants, Inc.
Lot Number: XF22018
Project Name: TAMP
Project Number: 7021P145

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	RI-SB-01 (2-8)	Solid	Acenaphthylene	8270E	25		ug/kg	9
001	RI-SB-01 (2-8)	Solid	Anthracene	8270E	8.0	J	ug/kg	9
001	RI-SB-01 (2-8)	Solid	Benzo(a)pyrene	8270E	27		ug/kg	9
001	RI-SB-01 (2-8)	Solid	Benzo(b)fluoranthene	8270E	21		ug/kg	9
001	RI-SB-01 (2-8)	Solid	Benzo(g,h,i)perylene	8270E	32		ug/kg	9
001	RI-SB-01 (2-8)	Solid	Benzo(k)fluoranthene	8270E	5.6	J	ug/kg	9
001	RI-SB-01 (2-8)	Solid	Fluoranthene	8270E	8.9	J	ug/kg	9
001	RI-SB-01 (2-8)	Solid	Indeno(1,2,3-c,d)pyrene	8270E	18		ug/kg	10
001	RI-SB-01 (2-8)	Solid	Pyrene	8270E	18		ug/kg	10
001	RI-SB-01 (2-8)	Solid	Arsenic	6020B	0.99		mg/kg	11
001	RI-SB-01 (2-8)	Solid	Barium	6020B	39		mg/kg	11
001	RI-SB-01 (2-8)	Solid	Chromium	6020B	12		mg/kg	11
001	RI-SB-01 (2-8)	Solid	Lead	6020B	4.1		mg/kg	11
001	RI-SB-01 (2-8)	Solid	Selenium	6020B	0.76	J	mg/kg	11
002	RI-SB-02 (2-0)	Solid	Acenaphthene	8270E	30		ug/kg	12
002	RI-SB-02 (2-0)	Solid	Acenaphthylene	8270E	10	J	ug/kg	12
002	RI-SB-02 (2-0)	Solid	Anthracene	8270E	33		ug/kg	12
002	RI-SB-02 (2-0)	Solid	Benzo(a)anthracene	8270E	22		ug/kg	12
002	RI-SB-02 (2-0)	Solid	Benzo(a)pyrene	8270E	19		ug/kg	12
002	RI-SB-02 (2-0)	Solid	Benzo(b)fluoranthene	8270E	18	J	ug/kg	12
002	RI-SB-02 (2-0)	Solid	Benzo(g,h,i)perylene	8270E	15	J	ug/kg	12
002	RI-SB-02 (2-0)	Solid	Chrysene	8270E	27		ug/kg	12
002	RI-SB-02 (2-0)	Solid	Fluoranthene	8270E	39		ug/kg	12
002	RI-SB-02 (2-0)	Solid	Fluorene	8270E	46		ug/kg	12
002	RI-SB-02 (2-0)	Solid	Indeno(1,2,3-c,d)pyrene	8270E	9.6	J	ug/kg	13
002	RI-SB-02 (2-0)	Solid	2-Methylnaphthalene	8270E	73		ug/kg	13
002	RI-SB-02 (2-0)	Solid	Naphthalene	8270E	51		ug/kg	13
002	RI-SB-02 (2-0)	Solid	Phenanthrene	8270E	120		ug/kg	13
002	RI-SB-02 (2-0)	Solid	Pyrene	8270E	62		ug/kg	13
002	RI-SB-02 (2-0)	Solid	Arsenic	6020B	3.0		mg/kg	14
002	RI-SB-02 (2-0)	Solid	Barium	6020B	160		mg/kg	14
002	RI-SB-02 (2-0)	Solid	Chromium	6020B	15		mg/kg	14
002	RI-SB-02 (2-0)	Solid	Lead	6020B	3.8		mg/kg	14
002	RI-SB-02 (2-0)	Solid	Selenium	6020B	5.6		mg/kg	14
003	RI-SB-03 (2-6)	Solid	Pyrene	8270E	8.6	J	ug/kg	16
003	RI-SB-03 (2-6)	Solid	Arsenic	6020B	2.0		mg/kg	17
003	RI-SB-03 (2-6)	Solid	Barium	6020B	140		mg/kg	17
003	RI-SB-03 (2-6)	Solid	Chromium	6020B	14		mg/kg	17
003	RI-SB-03 (2-6)	Solid	Lead	6020B	3.2		mg/kg	17
003	RI-SB-03 (2-6)	Solid	Selenium	6020B	6.2		mg/kg	17
004	RI-SB-05 (2-8)	Solid	Acenaphthylene	8270E	19		ug/kg	18
004	RI-SB-05 (2-8)	Solid	Anthracene	8270E	15	J	ug/kg	18
004	RI-SB-05 (2-8)	Solid	Benzo(a)anthracene	8270E	21		ug/kg	18

Detection Summary (Continued)

Lot Number: XF22018

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
004	RI-SB-05 (2-8)	Solid	Benzo(a)pyrene	8270E	38		ug/kg	18
004	RI-SB-05 (2-8)	Solid	Benzo(b)fluoranthene	8270E	28		ug/kg	18
004	RI-SB-05 (2-8)	Solid	Benzo(g,h,i)perylene	8270E	25		ug/kg	18
004	RI-SB-05 (2-8)	Solid	Benzo(k)fluoranthene	8270E	8.7	J	ug/kg	18
004	RI-SB-05 (2-8)	Solid	Chrysene	8270E	18		ug/kg	18
004	RI-SB-05 (2-8)	Solid	Fluoranthene	8270E	31		ug/kg	18
004	RI-SB-05 (2-8)	Solid	Indeno(1,2,3-c,d)pyrene	8270E	18		ug/kg	19
004	RI-SB-05 (2-8)	Solid	Phenanthrene	8270E	32		ug/kg	19
004	RI-SB-05 (2-8)	Solid	Pyrene	8270E	65		ug/kg	19
004	RI-SB-05 (2-8)	Solid	Arsenic	6020B	0.37	J	mg/kg	20
004	RI-SB-05 (2-8)	Solid	Barium	6020B	120		mg/kg	20
004	RI-SB-05 (2-8)	Solid	Chromium	6020B	7.6		mg/kg	20
004	RI-SB-05 (2-8)	Solid	Selenium	6020B	1.8		mg/kg	20
005	RI-SB-06 (4-8)	Solid	Acenaphthylene	8270E	16	J	ug/kg	21
005	RI-SB-06 (4-8)	Solid	Anthracene	8270E	10	J	ug/kg	21
005	RI-SB-06 (4-8)	Solid	Benzo(a)anthracene	8270E	23		ug/kg	21
005	RI-SB-06 (4-8)	Solid	Benzo(a)pyrene	8270E	35		ug/kg	21
005	RI-SB-06 (4-8)	Solid	Benzo(b)fluoranthene	8270E	29		ug/kg	21
005	RI-SB-06 (4-8)	Solid	Benzo(g,h,i)perylene	8270E	25		ug/kg	21
005	RI-SB-06 (4-8)	Solid	Benzo(k)fluoranthene	8270E	12	J	ug/kg	21
005	RI-SB-06 (4-8)	Solid	Chrysene	8270E	27		ug/kg	21
005	RI-SB-06 (4-8)	Solid	Fluoranthene	8270E	33		ug/kg	21
005	RI-SB-06 (4-8)	Solid	Indeno(1,2,3-c,d)pyrene	8270E	17		ug/kg	22
005	RI-SB-06 (4-8)	Solid	Phenanthrene	8270E	18		ug/kg	22
005	RI-SB-06 (4-8)	Solid	Pyrene	8270E	86		ug/kg	22
005	RI-SB-06 (4-8)	Solid	Arsenic	6020B	1.5		mg/kg	23
005	RI-SB-06 (4-8)	Solid	Barium	6020B	140		mg/kg	23
005	RI-SB-06 (4-8)	Solid	Chromium	6020B	47		mg/kg	23
005	RI-SB-06 (4-8)	Solid	Lead	6020B	2.2		mg/kg	23
005	RI-SB-06 (4-8)	Solid	Selenium	6020B	5.2		mg/kg	23
006	RI-SB-07 (2-6)	Solid	Acenaphthylene	8270E	21		ug/kg	24
006	RI-SB-07 (2-6)	Solid	Anthracene	8270E	11	J	ug/kg	24
006	RI-SB-07 (2-6)	Solid	Benzo(a)anthracene	8270E	21		ug/kg	24
006	RI-SB-07 (2-6)	Solid	Benzo(a)pyrene	8270E	35		ug/kg	24
006	RI-SB-07 (2-6)	Solid	Benzo(b)fluoranthene	8270E	32		ug/kg	24
006	RI-SB-07 (2-6)	Solid	Benzo(g,h,i)perylene	8270E	37		ug/kg	24
006	RI-SB-07 (2-6)	Solid	Benzo(k)fluoranthene	8270E	12	J	ug/kg	24
006	RI-SB-07 (2-6)	Solid	Chrysene	8270E	22		ug/kg	24
006	RI-SB-07 (2-6)	Solid	Fluoranthene	8270E	31		ug/kg	24
006	RI-SB-07 (2-6)	Solid	Indeno(1,2,3-c,d)pyrene	8270E	21		ug/kg	25
006	RI-SB-07 (2-6)	Solid	Phenanthrene	8270E	29		ug/kg	25
006	RI-SB-07 (2-6)	Solid	Pyrene	8270E	40		ug/kg	25
006	RI-SB-07 (2-6)	Solid	Arsenic	6020B	0.84		mg/kg	26
006	RI-SB-07 (2-6)	Solid	Barium	6020B	210		mg/kg	26
006	RI-SB-07 (2-6)	Solid	Chromium	6020B	120		mg/kg	26
006	RI-SB-07 (2-6)	Solid	Lead	6020B	4.8		mg/kg	26
006	RI-SB-07 (2-6)	Solid	Selenium	6020B	1.4		mg/kg	26
006	RI-SB-07 (2-6)	Solid	Silver	6020B	0.24	J	mg/kg	26

Detection Summary (Continued)

Lot Number: XF22018

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
007	RI-SB-08 (2-6)	Solid	Acenaphthene	8270E	160		ug/kg	27
007	RI-SB-08 (2-6)	Solid	Acenaphthylene	8270E	69		ug/kg	27
007	RI-SB-08 (2-6)	Solid	Anthracene	8270E	210		ug/kg	27
007	RI-SB-08 (2-6)	Solid	Benzo(a)anthracene	8270E	150		ug/kg	27
007	RI-SB-08 (2-6)	Solid	Benzo(a)pyrene	8270E	140		ug/kg	27
007	RI-SB-08 (2-6)	Solid	Benzo(b)fluoranthene	8270E	120		ug/kg	27
007	RI-SB-08 (2-6)	Solid	Benzo(g,h,i)perylene	8270E	77		ug/kg	27
007	RI-SB-08 (2-6)	Solid	Benzo(k)fluoranthene	8270E	38		ug/kg	27
007	RI-SB-08 (2-6)	Solid	Chrysene	8270E	190		ug/kg	27
007	RI-SB-08 (2-6)	Solid	Dibenzofuran	8270E	74	J	ug/kg	27
007	RI-SB-08 (2-6)	Solid	Fluoranthene	8270E	330		ug/kg	27
007	RI-SB-08 (2-6)	Solid	Fluorene	8270E	250		ug/kg	27
007	RI-SB-08 (2-6)	Solid	Indeno(1,2,3-c,d)pyrene	8270E	55		ug/kg	28
007	RI-SB-08 (2-6)	Solid	2-Methylnaphthalene	8270E	160		ug/kg	28
007	RI-SB-08 (2-6)	Solid	Naphthalene	8270E	71		ug/kg	28
007	RI-SB-08 (2-6)	Solid	Phenanthrene	8270E	880		ug/kg	28
007	RI-SB-08 (2-6)	Solid	Pyrene	8270E	540		ug/kg	28
007	RI-SB-08 (2-6)	Solid	Arsenic	6020B	0.91		mg/kg	29
007	RI-SB-08 (2-6)	Solid	Barium	6020B	190		mg/kg	29
007	RI-SB-08 (2-6)	Solid	Chromium	6020B	28		mg/kg	29
007	RI-SB-08 (2-6)	Solid	Lead	6020B	5.4		mg/kg	29
007	RI-SB-08 (2-6)	Solid	Selenium	6020B	0.74	J	mg/kg	29
008	RI-SB-09b (2-8)	Solid	Acenaphthene	8270E	85		ug/kg	30
008	RI-SB-09b (2-8)	Solid	Anthracene	8270E	220		ug/kg	30
008	RI-SB-09b (2-8)	Solid	Benzo(a)anthracene	8270E	460		ug/kg	30
008	RI-SB-09b (2-8)	Solid	Benzo(a)pyrene	8270E	450		ug/kg	30
008	RI-SB-09b (2-8)	Solid	Benzo(b)fluoranthene	8270E	530		ug/kg	30
008	RI-SB-09b (2-8)	Solid	Benzo(g,h,i)perylene	8270E	220		ug/kg	30
008	RI-SB-09b (2-8)	Solid	Benzo(k)fluoranthene	8270E	180		ug/kg	30
008	RI-SB-09b (2-8)	Solid	Carbazole	8270E	110	J	ug/kg	30
008	RI-SB-09b (2-8)	Solid	Chrysene	8270E	470		ug/kg	30
008	RI-SB-09b (2-8)	Solid	Fluoranthene	8270E	860		ug/kg	30
008	RI-SB-09b (2-8)	Solid	Fluorene	8270E	79		ug/kg	30
008	RI-SB-09b (2-8)	Solid	Indeno(1,2,3-c,d)pyrene	8270E	210		ug/kg	31
008	RI-SB-09b (2-8)	Solid	Phenanthrene	8270E	820		ug/kg	31
008	RI-SB-09b (2-8)	Solid	Pyrene	8270E	950		ug/kg	31
008	RI-SB-09b (2-8)	Solid	Arsenic	6020B	1.8		mg/kg	32
008	RI-SB-09b (2-8)	Solid	Barium	6020B	150		mg/kg	32
008	RI-SB-09b (2-8)	Solid	Chromium	6020B	23		mg/kg	32
008	RI-SB-09b (2-8)	Solid	Lead	6020B	6.8		mg/kg	32
008	RI-SB-09b (2-8)	Solid	Selenium	6020B	4.8		mg/kg	32
010	RI-SB-11 (10-12)	Solid	Caprolactam	8270E	8.2	J	ug/kg	33
010	RI-SB-11 (10-12)	Solid	Fluoranthene	8270E	2.9	J	ug/kg	33
010	RI-SB-11 (10-12)	Solid	Phenanthrene	8270E	2.6	J	ug/kg	34
010	RI-SB-11 (10-12)	Solid	Pyrene	8270E	3.1	J	ug/kg	34
010	RI-SB-11 (10-12)	Solid	Arsenic	6020B	0.76		mg/kg	35
010	RI-SB-11 (10-12)	Solid	Barium	6020B	220		mg/kg	35
010	RI-SB-11 (10-12)	Solid	Chromium	6020B	410		mg/kg	35

Detection Summary (Continued)

Lot Number: XF22018

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
010	RI-SB-11 (10-12)	Solid	Lead	6020B	1.9	J	mg/kg	35
010	RI-SB-11 (10-12)	Solid	Selenium	6020B	2.6		mg/kg	35
011	RI-SB-10 (6-10)	Solid	Caprolactam	8270E	11	J	ug/kg	36
011	RI-SB-10 (6-10)	Solid	Fluoranthene	8270E	1.8	J	ug/kg	36
011	RI-SB-10 (6-10)	Solid	Pyrene	8270E	2.4	J	ug/kg	37
011	RI-SB-10 (6-10)	Solid	Arsenic	6020B	1.6		mg/kg	38
011	RI-SB-10 (6-10)	Solid	Barium	6020B	110		mg/kg	38
011	RI-SB-10 (6-10)	Solid	Chromium	6020B	71	S	mg/kg	38
011	RI-SB-10 (6-10)	Solid	Lead	6020B	11		mg/kg	38
011	RI-SB-10 (6-10)	Solid	Selenium	6020B	3.0		mg/kg	38
012	EB-01	Aqueous	Acetone	8260D	12	JL	ug/L	39
012	EB-01	Aqueous	Methylene chloride	8260D	1.7		ug/L	39
012	EB-01	Aqueous	Caprolactam	8270E	1.1	J	ug/L	41
012	EB-01	Aqueous	Fluoranthene	8270E	0.046	J	ug/L	41
012	EB-01	Aqueous	2-Methylnaphthalene	8270E	0.041	J	ug/L	42
012	EB-01	Aqueous	Naphthalene	8270E	0.14	BJ	ug/L	42
012	EB-01	Aqueous	Phenol	8270E	1.8		ug/L	42
012	EB-01	Aqueous	Pyrene	8270E	0.061	J	ug/L	42
012	EB-01	Aqueous	Barium	6020B	1.3	J	ug/L	43
012	EB-01	Aqueous	Lead	6020B	2.3		ug/L	43
013	RI-SB-12(2-6)	Solid	Arsenic	6020B	2.5		mg/kg	46
013	RI-SB-12(2-6)	Solid	Barium	6020B	40		mg/kg	46
013	RI-SB-12(2-6)	Solid	Chromium	6020B	26		mg/kg	46
013	RI-SB-12(2-6)	Solid	Lead	6020B	10		mg/kg	46
013	RI-SB-12(2-6)	Solid	Selenium	6020B	1.2		mg/kg	46

(164 detections)

Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-001**	
Description: **RI-SB-01 (2-8)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1800**	Project Name: **TAMP**	% Solids: **81.8**	**06/24/2022 2219**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	5	07/05/2022 2056	SCD	06/23/2022 1240	45902

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	12	U	16	12	4.8	ug/kg	1
Acenaphthylene	**208-96-8**	**8270E**	**25**		**16**	12	**5.5**	**ug/kg**	**1**
Acetophenone	98-86-2	8270E	58	U	75	58	29	ug/kg	1
Anthracene	**120-12-7**	**8270E**	**8.0**	**J**	**16**	12	**3.0**	**ug/kg**	**1**
Atrazine	1912-24-9	8270E	58	U	75	58	29	ug/kg	1
Benzaldehyde	100-52-7	8270E	58	U	75	58	29	ug/kg	1
Benzo(a)anthracene	56-55-3	8270E	12	U	16	12	3.4	ug/kg	1
Benzo(a)pyrene	**50-32-8**	**8270E**	**27**		**16**	12	**3.8**	**ug/kg**	**1**
Benzo(b)fluoranthene	**205-99-2**	**8270E**	**21**		**16**	12	**2.9**	**ug/kg**	**1**
Benzo(g,h,i)perylene	**191-24-2**	**8270E**	**32**		**16**	12	**3.8**	**ug/kg**	**1**
Benzo(k)fluoranthene	**207-08-9**	**8270E**	**5.6**	**J**	**16**	8.9	**2.8**	**ug/kg**	**1**
1,1'-Biphenyl	92-52-4	8270E	58	U	75	58	29	ug/kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	58	U	75	58	29	ug/kg	1
Butyl benzyl phthalate	85-68-7	8270E	58	U	75	58	29	ug/kg	1
Caprolactam	105-60-2	8270E	58	U	75	58	29	ug/kg	1
Carbazole	86-74-8	8270E	58	U	75	58	29	ug/kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	58	U	75	58	29	ug/kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	58	U	75	58	29	ug/kg	1
4-Chloroaniline	106-47-8	8270E	58	U	75	58	29	ug/kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	58	U	75	58	29	ug/kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	58	U	75	58	29	ug/kg	1
2-Chloronaphthalene	91-58-7	8270E	58	U	75	58	29	ug/kg	1
2-Chlorophenol	95-57-8	8270E	58	U	75	58	29	ug/kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	58	U	75	58	29	ug/kg	1
Chrysene	218-01-9	8270E	8.9	U	16	8.9	2.6	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270E	12	U	16	12	3.0	ug/kg	1
Dibenzofuran	132-64-9	8270E	58	U	75	58	29	ug/kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	58	U	75	58	29	ug/kg	1
2,4-Dichlorophenol	120-83-2	8270E	58	U	75	58	29	ug/kg	1
Diethylphthalate	84-66-2	8270E	58	U	75	58	29	ug/kg	1
Dimethyl phthalate	131-11-3	8270E	90	U	120	90	43	ug/kg	1
2,4-Dimethylphenol	105-67-9	8270E	58	U	75	58	29	ug/kg	1
Di-n-butyl phthalate	84-74-2	8270E	58	U	75	58	29	ug/kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	290	U	390	290	150	ug/kg	1
2,4-Dinitrophenol	51-28-5	8270E	290	U	390	290	150	ug/kg	1
2,4-Dinitrotoluene	121-14-2	8270E	120	U	160	120	58	ug/kg	1
2,6-Dinitrotoluene	606-20-2	8270E	120	U	160	120	58	ug/kg	1
Di-n-octylphthalate	117-84-0	8270E	58	U	75	58	29	ug/kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	290	U	390	290	150	ug/kg	1
Fluoranthene	**206-44-0**	**8270E**	**8.9**	**J**	**16**	8.9	**2.4**	**ug/kg**	**1**
Fluorene	86-73-7	8270E	12	U	16	12	3.3	ug/kg	1
Hexachlorobenzene	118-74-1	8270E	58	U	75	58	29	ug/kg	1
Hexachlorobutadiene	87-68-3	8270E	58	U	75	58	29	ug/kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	290	U	390	290	150	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-001**	
Description: **RI-SB-01 (2-8)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1800**	Project Name: **TAMP**	% Solids: **81.8**	**06/24/2022 2219**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	5	07/05/2022 2056	SCD	06/23/2022 1240	45902

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	58	U	75	58	29	ug/kg	1
Indeno(1,2,3-c,d)pyrene	**193-39-5**	**8270E**	**18**		**16**	12	**5.8**	**ug/kg**	**1**
Isophorone	78-59-1	8270E	58	U	75	58	29	ug/kg	1
2-Methylnaphthalene	91-57-6	8270E	12	U	16	12	5.7	ug/kg	1
2-Methylphenol	95-48-7	8270E	58	U	75	58	29	ug/kg	1
3+4-Methylphenol	106-44-5	8270E	120	U	160	120	58	ug/kg	1
Naphthalene	91-20-3	8270E	12	U	16	12	5.6	ug/kg	1
2-Nitroaniline	88-74-4	8270E	120	U	160	120	58	ug/kg	1
3-Nitroaniline	99-09-2	8270E	120	U	160	120	58	ug/kg	1
4-Nitroaniline	100-01-6	8270E	120	U	160	120	58	ug/kg	1
Nitrobenzene	98-95-3	8270E	58	U	75	58	29	ug/kg	1
2-Nitrophenol	88-75-5	8270E	120	U	160	120	58	ug/kg	1
4-Nitrophenol	100-02-7	8270E	290	U	390	290	150	ug/kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	58	U	75	58	29	ug/kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	58	U	75	58	29	ug/kg	1
Pentachlorophenol	87-86-5	8270E	290	U	390	290	150	ug/kg	1
Phenanthrene	85-01-8	8270E	12	U	16	12	4.2	ug/kg	1
Phenol	108-95-2	8270E	58	U	75	58	29	ug/kg	1
Pyrene	**129-00-0**	**8270E**	**18**		**16**	12	**2.9**	**ug/kg**	**1**
2,4,5-Trichlorophenol	95-95-4	8270E	58	U	75	58	29	ug/kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	58	U	75	58	29	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		70	44-115
2-Fluorophenol		89	35-115
Nitrobenzene-d5		77	37-122
Phenol-d5		79	33-122
Terphenyl-d14		98	54-127
2,4,6-Tribromophenol		73	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-001**	
Description: **RI-SB-01 (2-8)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1800**	Project Name: **TAMP**	% Solids: **81.8**	**06/24/2022 2219**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/04/2022 1600	BPK	06/23/2022 1018	45893

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**0.99**		**0.48**	0.38	**0.19**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**39**		**1.2**	0.58	**0.30**	**mg/kg**	**1**
Cadmium	7440-43-9	6020B	0.058	U	0.12	0.058	0.024	mg/kg	1
Chromium	**7440-47-3**	**6020B**	**12**		**1.2**	1.0	**0.53**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**4.1**		**0.24**	0.13	**0.065**	**mg/kg**	**1**
Selenium	**7782-49-2**	**6020B**	**0.76**	**J**	**1.2**	0.87	**0.45**	**mg/kg**	**1**
Silver	7440-22-4	6020B	0.12	U	0.24	0.12	0.057	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-002**	
Description: **RI-SB-02 (2-0)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1710**	Project Name: **TAMP**	% Solids: **69.3**	**06/24/2022 2219**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	5	07/05/2022 1557	SCD	06/23/2022 1240	45902

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	**83-32-9**	**8270E**	**30**		**19**	14	**5.8**	**ug/kg**	**1**
Acenaphthylene	**208-96-8**	**8270E**	**10**	**J**	**19**	14	**6.6**	**ug/kg**	**1**
Acetophenone	98-86-2	8270E	69	U	90	69	35	ug/kg	1
Anthracene	**120-12-7**	**8270E**	**33**		**19**	14	**3.5**	**ug/kg**	**1**
Atrazine	1912-24-9	8270E	69	U	90	69	35	ug/kg	1
Benzaldehyde	100-52-7	8270E	69	U	90	69	35	ug/kg	1
Benzo(a)anthracene	**56-55-3**	**8270E**	**22**		**19**	14	**4.1**	**ug/kg**	**1**
Benzo(a)pyrene	**50-32-8**	**8270E**	**19**		**19**	14	**4.6**	**ug/kg**	**1**
Benzo(b)fluoranthene	**205-99-2**	**8270E**	**18**	**J**	**19**	14	**3.5**	**ug/kg**	**1**
Benzo(g,h,i)perylene	**191-24-2**	**8270E**	**15**	**J**	**19**	14	**4.5**	**ug/kg**	**1**
Benzo(k)fluoranthene	207-08-9	8270E	11	U	19	11	3.3	ug/kg	1
1,1'-Biphenyl	92-52-4	8270E	69	U	90	69	35	ug/kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	69	U	90	69	35	ug/kg	1
Butyl benzyl phthalate	85-68-7	8270E	69	U	90	69	35	ug/kg	1
Caprolactam	105-60-2	8270E	69	U	90	69	35	ug/kg	1
Carbazole	86-74-8	8270E	69	U	90	69	35	ug/kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	69	U	90	69	35	ug/kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	69	U	90	69	35	ug/kg	1
4-Chloroaniline	106-47-8	8270E	69	U	90	69	35	ug/kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	69	U	90	69	35	ug/kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	69	U	90	69	35	ug/kg	1
2-Chloronaphthalene	91-58-7	8270E	69	U	90	69	35	ug/kg	1
2-Chlorophenol	95-57-8	8270E	69	U	90	69	35	ug/kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	69	U	90	69	35	ug/kg	1
Chrysene	**218-01-9**	**8270E**	**27**		**19**	11	**3.1**	**ug/kg**	**1**
Dibenzo(a,h)anthracene	53-70-3	8270E	14	U	19	14	3.5	ug/kg	1
Dibenzofuran	132-64-9	8270E	69	U	90	69	35	ug/kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	69	U	90	69	35	ug/kg	1
2,4-Dichlorophenol	120-83-2	8270E	69	U	90	69	35	ug/kg	1
Diethylphthalate	84-66-2	8270E	69	U	90	69	35	ug/kg	1
Dimethyl phthalate	131-11-3	8270E	110	U	140	110	51	ug/kg	1
2,4-Dimethylphenol	105-67-9	8270E	69	U	90	69	35	ug/kg	1
Di-n-butyl phthalate	84-74-2	8270E	69	U	90	69	35	ug/kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	350	U	470	350	170	ug/kg	1
2,4-Dinitrophenol	51-28-5	8270E	350	U	470	350	170	ug/kg	1
2,4-Dinitrotoluene	121-14-2	8270E	140	U	190	140	69	ug/kg	1
2,6-Dinitrotoluene	606-20-2	8270E	140	U	190	140	69	ug/kg	1
Di-n-octylphthalate	117-84-0	8270E	69	U	90	69	35	ug/kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	350	U	470	350	170	ug/kg	1
Fluoranthene	**206-44-0**	**8270E**	**39**		**19**	11	**2.9**	**ug/kg**	**1**
Fluorene	**86-73-7**	**8270E**	**46**		**19**	14	**4.0**	**ug/kg**	**1**
Hexachlorobenzene	118-74-1	8270E	69	U	90	69	35	ug/kg	1
Hexachlorobutadiene	87-68-3	8270E	69	U	90	69	35	ug/kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	350	U	470	350	170	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-002**	
Description: **RI-SB-02 (2-0)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1710**	Project Name: **TAMP**	% Solids: **69.3**	**06/24/2022 2219**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	5	07/05/2022 1557	SCD	06/23/2022 1240	45902

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	69	U	90	69	35	ug/kg	1
Indeno(1,2,3-c,d)pyrene	**193-39-5**	**8270E**	**9.6**	**J**	**19**	14	**6.9**	**ug/kg**	**1**
Isophorone	78-59-1	8270E	69	U	90	69	35	ug/kg	1
2-Methylnaphthalene	**91-57-6**	**8270E**	**73**		**19**	14	**6.9**	**ug/kg**	**1**
2-Methylphenol	95-48-7	8270E	69	U	90	69	35	ug/kg	1
3+4-Methylphenol	106-44-5	8270E	140	U	190	140	69	ug/kg	1
Naphthalene	**91-20-3**	**8270E**	**51**		**19**	14	**6.7**	**ug/kg**	**1**
2-Nitroaniline	88-74-4	8270E	140	U	190	140	69	ug/kg	1
3-Nitroaniline	99-09-2	8270E	140	U	190	140	69	ug/kg	1
4-Nitroaniline	100-01-6	8270E	140	U	190	140	69	ug/kg	1
Nitrobenzene	98-95-3	8270E	69	U	90	69	35	ug/kg	1
2-Nitrophenol	88-75-5	8270E	140	U	190	140	69	ug/kg	1
4-Nitrophenol	100-02-7	8270E	350	U	470	350	170	ug/kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	69	U	90	69	35	ug/kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	69	U	90	69	35	ug/kg	1
Pentachlorophenol	87-86-5	8270E	350	U	470	350	170	ug/kg	1
Phenanthrene	**85-01-8**	**8270E**	**120**		**19**	14	**5.0**	**ug/kg**	**1**
Phenol	108-95-2	8270E	69	U	90	69	35	ug/kg	1
Pyrene	**129-00-0**	**8270E**	**62**		**19**	14	**3.5**	**ug/kg**	**1**
2,4,5-Trichlorophenol	95-95-4	8270E	69	U	90	69	35	ug/kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	69	U	90	69	35	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		79	44-115
2-Fluorophenol		84	35-115
Nitrobenzene-d5		80	37-122
Phenol-d5		70	33-122
Terphenyl-d14		101	54-127
2,4,6-Tribromophenol		100	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-002**	
Description: **RI-SB-02 (2-0)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1710**	Project Name: **TAMP**	% Solids: **69.3**	**06/24/2022 2219**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/04/2022 1607	BPK	06/23/2022 1018	45893
2	3050B	6020B	10	07/04/2022 2242	BPK	06/23/2022 1018	45893

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**3.0**		**0.61**	0.49	**0.24**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**160**		**16**	7.7	**3.8**	**mg/kg**	**2**
Cadmium	7440-43-9	6020B	0.77	U	1.6	0.77	0.31	mg/kg	2
Chromium	**7440-47-3**	**6020B**	**15**		**1.6**	1.4	**0.67**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**3.8**		**3.1**	1.7	**0.83**	**mg/kg**	**2**
Selenium	**7782-49-2**	**6020B**	**5.6**		**1.6**	1.2	**0.58**	**mg/kg**	**1**
Silver	7440-22-4	6020B	0.16	U	0.31	0.16	0.073	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XF22018-003**
Description: **RI-SB-03 (2-6)** Matrix: **Solid**
Date Sampled: **06/20/2022 1900** Project Name: **TAMP** % Solids: **78.0** **06/24/2022 2219**
Date Received: **06/22/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	5	07/05/2022 1622	SCD	06/23/2022 1240	45902

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	13	U	17	13	5.1	ug/kg	1
Acenaphthylene	208-96-8	8270E	13	U	17	13	5.9	ug/kg	1
Acetophenone	98-86-2	8270E	62	U	81	62	31	ug/kg	1
Anthracene	120-12-7	8270E	13	U	17	13	3.2	ug/kg	1
Atrazine	1912-24-9	8270E	62	U	81	62	31	ug/kg	1
Benzaldehyde	100-52-7	8270E	62	U	81	62	31	ug/kg	1
Benzo(a)anthracene	56-55-3	8270E	13	U	17	13	3.7	ug/kg	1
Benzo(a)pyrene	50-32-8	8270E	13	U	17	13	4.1	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270E	13	U	17	13	3.1	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270E	13	U	17	13	4.0	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270E	9.4	U	17	9.4	3.0	ug/kg	1
1,1'-Biphenyl	92-52-4	8270E	62	U	81	62	31	ug/kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	62	U	81	62	31	ug/kg	1
Butyl benzyl phthalate	85-68-7	8270E	62	U	81	62	31	ug/kg	1
Caprolactam	105-60-2	8270E	62	U	81	62	31	ug/kg	1
Carbazole	86-74-8	8270E	62	U	81	62	31	ug/kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	62	U	81	62	31	ug/kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	62	U	81	62	31	ug/kg	1
4-Chloroaniline	106-47-8	8270E	62	U	81	62	31	ug/kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	62	U	81	62	31	ug/kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	62	U	81	62	31	ug/kg	1
2-Chloronaphthalene	91-58-7	8270E	62	U	81	62	31	ug/kg	1
2-Chlorophenol	95-57-8	8270E	62	U	81	62	31	ug/kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	62	U	81	62	31	ug/kg	1
Chrysene	218-01-9	8270E	9.4	U	17	9.4	2.8	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270E	13	U	17	13	3.2	ug/kg	1
Dibenzofuran	132-64-9	8270E	62	U	81	62	31	ug/kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	62	U	81	62	31	ug/kg	1
2,4-Dichlorophenol	120-83-2	8270E	62	U	81	62	31	ug/kg	1
Diethylphthalate	84-66-2	8270E	62	U	81	62	31	ug/kg	1
Dimethyl phthalate	131-11-3	8270E	90	U	120	90	46	ug/kg	1
2,4-Dimethylphenol	105-67-9	8270E	62	U	81	62	31	ug/kg	1
Di-n-butyl phthalate	84-74-2	8270E	62	U	81	62	31	ug/kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	310	U	420	310	160	ug/kg	1
2,4-Dinitrophenol	51-28-5	8270E	310	U	420	310	160	ug/kg	1
2,4-Dinitrotoluene	121-14-2	8270E	130	U	170	130	62	ug/kg	1
2,6-Dinitrotoluene	606-20-2	8270E	130	U	170	130	62	ug/kg	1
Di-n-octylphthalate	117-84-0	8270E	62	U	81	62	31	ug/kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	310	U	420	310	160	ug/kg	1
Fluoranthene	206-44-0	8270E	9.4	U	17	9.4	2.6	ug/kg	1
Fluorene	86-73-7	8270E	13	U	17	13	3.5	ug/kg	1
Hexachlorobenzene	118-74-1	8270E	62	U	81	62	31	ug/kg	1
Hexachlorobutadiene	87-68-3	8270E	62	U	81	62	31	ug/kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	310	U	420	310	160	ug/kg	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-003**	
Description: **RI-SB-03 (2-6)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1900**	Project Name: **TAMP**	% Solids: **78.0**	**06/24/2022 2219**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	5	07/05/2022 1622	SCD	06/23/2022 1240	45902

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	62	U	81	62	31	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	13	U	17	13	6.2	ug/kg	1
Isophorone	78-59-1	8270E	62	U	81	62	31	ug/kg	1
2-Methylnaphthalene	91-57-6	8270E	13	U	17	13	6.1	ug/kg	1
2-Methylphenol	95-48-7	8270E	62	U	81	62	31	ug/kg	1
3+4-Methylphenol	106-44-5	8270E	130	U	170	130	62	ug/kg	1
Naphthalene	91-20-3	8270E	13	U	17	13	6.0	ug/kg	1
2-Nitroaniline	88-74-4	8270E	130	U	170	130	62	ug/kg	1
3-Nitroaniline	99-09-2	8270E	130	U	170	130	62	ug/kg	1
4-Nitroaniline	100-01-6	8270E	130	U	170	130	62	ug/kg	1
Nitrobenzene	98-95-3	8270E	62	U	81	62	31	ug/kg	1
2-Nitrophenol	88-75-5	8270E	130	U	170	130	62	ug/kg	1
4-Nitrophenol	100-02-7	8270E	310	U	420	310	160	ug/kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	62	U	81	62	31	ug/kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	62	U	81	62	31	ug/kg	1
Pentachlorophenol	87-86-5	8270E	310	U	420	310	160	ug/kg	1
Phenanthrene	85-01-8	8270E	13	U	17	13	4.5	ug/kg	1
Phenol	108-95-2	8270E	62	U	81	62	31	ug/kg	1
Pyrene	**129-00-0**	**8270E**	**8.6**	**J**	**17**	13	**3.1**	**ug/kg**	**1**
2,4,5-Trichlorophenol	95-95-4	8270E	62	U	81	62	31	ug/kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	62	U	81	62	31	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		76	44-115
2-Fluorophenol		83	35-115
Nitrobenzene-d5		82	37-122
Phenol-d5		84	33-122
Terphenyl-d14		109	54-127
2,4,6-Tribromophenol		80	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-003**	
Description: **RI-SB-03 (2-6)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1900**	Project Name: **TAMP**	% Solids: **78.0**	**06/24/2022 2219**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/04/2022 1615	BPK	06/23/2022 1018	45893
2	3050B	6020B	10	07/04/2022 2250	BPK	06/23/2022 1018	45893

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**2.0**		**0.52**	0.42	**0.21**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**140**		**14**	6.7	**3.2**	**mg/kg**	**2**
Cadmium	7440-43-9	6020B	0.67	U	1.4	0.67	0.26	mg/kg	2
Chromium	**7440-47-3**	**6020B**	**14**		**1.4**	1.2	**0.58**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**3.2**		**2.6**	1.4	**0.71**	**mg/kg**	**2**
Selenium	**7782-49-2**	**6020B**	**6.2**		**1.4**	1.0	**0.49**	**mg/kg**	**1**
Silver	7440-22-4	6020B	0.13	U	0.26	0.13	0.062	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-004**	
Description: **RI-SB-05 (2-8)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 2000**	Project Name: **TAMP**	% Solids: **82.8**	**06/24/2022 2219**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	5	07/05/2022 1646	SCD	06/23/2022 1240	45902

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	12	U	16	12	5.0	ug/kg	1
Acenaphthylene	**208-96-8**	**8270E**	**19**		**16**	12	**5.7**	**ug/kg**	**1**
Acetophenone	98-86-2	8270E	60	U	78	60	30	ug/kg	1
Anthracene	**120-12-7**	**8270E**	**15**	**J**	**16**	12	**3.1**	**ug/kg**	**1**
Atrazine	1912-24-9	8270E	60	U	78	60	30	ug/kg	1
Benzaldehyde	100-52-7	8270E	60	U	78	60	30	ug/kg	1
Benzo(a)anthracene	**56-55-3**	**8270E**	**21**		**16**	12	**3.5**	**ug/kg**	**1**
Benzo(a)pyrene	**50-32-8**	**8270E**	**38**		**16**	12	**4.0**	**ug/kg**	**1**
Benzo(b)fluoranthene	**205-99-2**	**8270E**	**28**		**16**	12	**3.0**	**ug/kg**	**1**
Benzo(g,h,i)perylene	**191-24-2**	**8270E**	**25**		**16**	12	**3.9**	**ug/kg**	**1**
Benzo(k)fluoranthene	**207-08-9**	**8270E**	**8.7**	**J**	**16**	8.9	**2.9**	**ug/kg**	**1**
1,1'-Biphenyl	92-52-4	8270E	60	U	78	60	30	ug/kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	60	U	78	60	30	ug/kg	1
Butyl benzyl phthalate	85-68-7	8270E	60	U	78	60	30	ug/kg	1
Caprolactam	105-60-2	8270E	60	U	78	60	30	ug/kg	1
Carbazole	86-74-8	8270E	60	U	78	60	30	ug/kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	60	U	78	60	30	ug/kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	60	U	78	60	30	ug/kg	1
4-Chloroaniline	106-47-8	8270E	60	U	78	60	30	ug/kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	60	U	78	60	30	ug/kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	60	U	78	60	30	ug/kg	1
2-Chloronaphthalene	91-58-7	8270E	60	U	78	60	30	ug/kg	1
2-Chlorophenol	95-57-8	8270E	60	U	78	60	30	ug/kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	60	U	78	60	30	ug/kg	1
Chrysene	**218-01-9**	**8270E**	**18**		**16**	8.9	**2.7**	**ug/kg**	**1**
Dibenzo(a,h)anthracene	53-70-3	8270E	12	U	16	12	3.1	ug/kg	1
Dibenzofuran	132-64-9	8270E	60	U	78	60	30	ug/kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	60	U	78	60	30	ug/kg	1
2,4-Dichlorophenol	120-83-2	8270E	60	U	78	60	30	ug/kg	1
Diethylphthalate	84-66-2	8270E	60	U	78	60	30	ug/kg	1
Dimethyl phthalate	131-11-3	8270E	90	U	120	90	44	ug/kg	1
2,4-Dimethylphenol	105-67-9	8270E	60	U	78	60	30	ug/kg	1
Di-n-butyl phthalate	84-74-2	8270E	60	U	78	60	30	ug/kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	300	U	400	300	150	ug/kg	1
2,4-Dinitrophenol	51-28-5	8270E	300	U	400	300	150	ug/kg	1
2,4-Dinitrotoluene	121-14-2	8270E	120	U	160	120	60	ug/kg	1
2,6-Dinitrotoluene	606-20-2	8270E	120	U	160	120	60	ug/kg	1
Di-n-octylphthalate	117-84-0	8270E	60	U	78	60	30	ug/kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	300	U	400	300	150	ug/kg	1
Fluoranthene	**206-44-0**	**8270E**	**31**		**16**	8.9	**2.5**	**ug/kg**	**1**
Fluorene	86-73-7	8270E	12	U	16	12	3.4	ug/kg	1
Hexachlorobenzene	118-74-1	8270E	60	U	78	60	30	ug/kg	1
Hexachlorobutadiene	87-68-3	8270E	60	U	78	60	30	ug/kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	300	U	400	300	150	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-004**	
Description: **RI-SB-05 (2-8)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 2000**	Project Name: **TAMP**	% Solids: **82.8**	**06/24/2022 2219**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	5	07/05/2022 1646	SCD	06/23/2022 1240	45902

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	60	U	78	60	30	ug/kg	1
Indeno(1,2,3-c,d)pyrene	**193-39-5**	**8270E**	**18**		**16**	12	**6.0**	**ug/kg**	**1**
Isophorone	78-59-1	8270E	60	U	78	60	30	ug/kg	1
2-Methylnaphthalene	91-57-6	8270E	12	U	16	12	5.9	ug/kg	1
2-Methylphenol	95-48-7	8270E	60	U	78	60	30	ug/kg	1
3+4-Methylphenol	106-44-5	8270E	120	U	160	120	60	ug/kg	1
Naphthalene	91-20-3	8270E	12	U	16	12	5.8	ug/kg	1
2-Nitroaniline	88-74-4	8270E	120	U	160	120	60	ug/kg	1
3-Nitroaniline	99-09-2	8270E	120	U	160	120	60	ug/kg	1
4-Nitroaniline	100-01-6	8270E	120	U	160	120	60	ug/kg	1
Nitrobenzene	98-95-3	8270E	60	U	78	60	30	ug/kg	1
2-Nitrophenol	88-75-5	8270E	120	U	160	120	60	ug/kg	1
4-Nitrophenol	100-02-7	8270E	300	U	400	300	150	ug/kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	60	U	78	60	30	ug/kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	60	U	78	60	30	ug/kg	1
Pentachlorophenol	87-86-5	8270E	300	U	400	300	150	ug/kg	1
Phenanthrene	**85-01-8**	**8270E**	**32**		**16**	12	**4.3**	**ug/kg**	**1**
Phenol	108-95-2	8270E	60	U	78	60	30	ug/kg	1
Pyrene	**129-00-0**	**8270E**	**65**		**16**	12	**3.0**	**ug/kg**	**1**
2,4,5-Trichlorophenol	95-95-4	8270E	60	U	78	60	30	ug/kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	60	U	78	60	30	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		78	44-115
2-Fluorophenol		81	35-115
Nitrobenzene-d5		83	37-122
Phenol-d5		79	33-122
Terphenyl-d14		112	54-127
2,4,6-Tribromophenol		77	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-004**	
Description: **RI-SB-05 (2-8)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 2000**	Project Name: **TAMP**	% Solids: **82.8**	**06/24/2022 2219**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/04/2022 1622	BPK	06/23/2022 1018	45893
2	3050B	6020B	10	07/04/2022 2258	BPK	06/23/2022 1018	45893

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**0.37**	**J**	**0.55**	0.44	**0.22**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**120**		**14**	6.7	**3.4**	**mg/kg**	**2**
Cadmium	7440-43-9	6020B	0.67	U	1.4	0.67	0.28	mg/kg	2
Chromium	**7440-47-3**	**6020B**	**7.6**		**1.4**	1.2	**0.61**	**mg/kg**	**1**
Lead	7439-92-1	6020B	1.5	U	2.8	1.5	0.75	mg/kg	2
Selenium	**7782-49-2**	**6020B**	**1.8**		**1.4**	1.0	**0.52**	**mg/kg**	**1**
Silver	7440-22-4	6020B	0.14	U	0.28	0.14	0.067	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-005**	
Description: **RI-SB-06 (4-8)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1945**	Project Name: **TAMP**	% Solids: **79.7**	**06/24/2022 2219**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	5	07/05/2022 1711	SCD	06/23/2022 1240	45902

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	13	U	17	13	5.1	ug/kg	1
Acenaphthylene	**208-96-8**	**8270E**	**16**	**J**	**17**	13	**5.9**	**ug/kg**	**1**
Acetophenone	98-86-2	8270E	62	U	80	62	31	ug/kg	1
Anthracene	**120-12-7**	**8270E**	**10**	**J**	**17**	13	**3.2**	**ug/kg**	**1**
Atrazine	1912-24-9	8270E	62	U	80	62	31	ug/kg	1
Benzaldehyde	100-52-7	8270E	62	U	80	62	31	ug/kg	1
Benzo(a)anthracene	**56-55-3**	**8270E**	**23**		**17**	13	**3.7**	**ug/kg**	**1**
Benzo(a)pyrene	**50-32-8**	**8270E**	**35**		**17**	13	**4.1**	**ug/kg**	**1**
Benzo(b)fluoranthene	**205-99-2**	**8270E**	**29**		**17**	13	**3.1**	**ug/kg**	**1**
Benzo(g,h,i)perylene	**191-24-2**	**8270E**	**25**		**17**	13	**4.0**	**ug/kg**	**1**
Benzo(k)fluoranthene	**207-08-9**	**8270E**	**12**	**J**	**17**	9.4	**3.0**	**ug/kg**	**1**
1,1'-Biphenyl	92-52-4	8270E	62	U	80	62	31	ug/kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	62	U	80	62	31	ug/kg	1
Butyl benzyl phthalate	85-68-7	8270E	62	U	80	62	31	ug/kg	1
Caprolactam	105-60-2	8270E	62	U	80	62	31	ug/kg	1
Carbazole	86-74-8	8270E	62	U	80	62	31	ug/kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	62	U	80	62	31	ug/kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	62	U	80	62	31	ug/kg	1
4-Chloroaniline	106-47-8	8270E	62	U	80	62	31	ug/kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	62	U	80	62	31	ug/kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	62	U	80	62	31	ug/kg	1
2-Chloronaphthalene	91-58-7	8270E	62	U	80	62	31	ug/kg	1
2-Chlorophenol	95-57-8	8270E	62	U	80	62	31	ug/kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	62	U	80	62	31	ug/kg	1
Chrysene	**218-01-9**	**8270E**	**27**		**17**	9.4	**2.8**	**ug/kg**	**1**
Dibenzo(a,h)anthracene	53-70-3	8270E	13	U	17	13	3.2	ug/kg	1
Dibenzofuran	132-64-9	8270E	62	U	80	62	31	ug/kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	62	U	80	62	31	ug/kg	1
2,4-Dichlorophenol	120-83-2	8270E	62	U	80	62	31	ug/kg	1
Diethylphthalate	84-66-2	8270E	62	U	80	62	31	ug/kg	1
Dimethyl phthalate	131-11-3	8270E	90	U	120	90	46	ug/kg	1
2,4-Dimethylphenol	105-67-9	8270E	62	U	80	62	31	ug/kg	1
Di-n-butyl phthalate	84-74-2	8270E	62	U	80	62	31	ug/kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	310	U	410	310	150	ug/kg	1
2,4-Dinitrophenol	51-28-5	8270E	310	U	410	310	150	ug/kg	1
2,4-Dinitrotoluene	121-14-2	8270E	130	U	170	130	62	ug/kg	1
2,6-Dinitrotoluene	606-20-2	8270E	130	U	170	130	62	ug/kg	1
Di-n-octylphthalate	117-84-0	8270E	62	U	80	62	31	ug/kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	310	U	410	310	150	ug/kg	1
Fluoranthene	**206-44-0**	**8270E**	**33**		**17**	9.4	**2.6**	**ug/kg**	**1**
Fluorene	86-73-7	8270E	13	U	17	13	3.5	ug/kg	1
Hexachlorobenzene	118-74-1	8270E	62	U	80	62	31	ug/kg	1
Hexachlorobutadiene	87-68-3	8270E	62	U	80	62	31	ug/kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	310	U	410	310	150	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-005**	
Description: **RI-SB-06 (4-8)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1945**	Project Name: **TAMP**	% Solids: **79.7**	**06/24/2022 2219**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	5	07/05/2022 1711	SCD	06/23/2022 1240	45902

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	62	U	80	62	31	ug/kg	1
Indeno(1,2,3-c,d)pyrene	**193-39-5**	**8270E**	**17**		**17**	13	**6.2**	**ug/kg**	**1**
Isophorone	78-59-1	8270E	62	U	80	62	31	ug/kg	1
2-Methylnaphthalene	91-57-6	8270E	13	U	17	13	6.1	ug/kg	1
2-Methylphenol	95-48-7	8270E	62	U	80	62	31	ug/kg	1
3+4-Methylphenol	106-44-5	8270E	130	U	170	130	62	ug/kg	1
Naphthalene	91-20-3	8270E	13	U	17	13	6.0	ug/kg	1
2-Nitroaniline	88-74-4	8270E	130	U	170	130	62	ug/kg	1
3-Nitroaniline	99-09-2	8270E	130	U	170	130	62	ug/kg	1
4-Nitroaniline	100-01-6	8270E	130	U	170	130	62	ug/kg	1
Nitrobenzene	98-95-3	8270E	62	U	80	62	31	ug/kg	1
2-Nitrophenol	88-75-5	8270E	130	U	170	130	62	ug/kg	1
4-Nitrophenol	100-02-7	8270E	310	U	410	310	150	ug/kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	62	U	80	62	31	ug/kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	62	U	80	62	31	ug/kg	1
Pentachlorophenol	87-86-5	8270E	310	U	410	310	150	ug/kg	1
Phenanthrene	**85-01-8**	**8270E**	**18**		**17**	13	**4.5**	**ug/kg**	**1**
Phenol	108-95-2	8270E	62	U	80	62	31	ug/kg	1
Pyrene	**129-00-0**	**8270E**	**86**		**17**	13	**3.1**	**ug/kg**	**1**
2,4,5-Trichlorophenol	95-95-4	8270E	62	U	80	62	31	ug/kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	62	U	80	62	31	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		71	44-115
2-Fluorophenol		89	35-115
Nitrobenzene-d5		80	37-122
Phenol-d5		81	33-122
Terphenyl-d14		103	54-127
2,4,6-Tribromophenol		68	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-005**	
Description: **RI-SB-06 (4-8)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1945**	Project Name: **TAMP**	% Solids: **79.7**	**06/24/2022 2219**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/04/2022 1630	BPK	06/23/2022 1018	45893
2	3050B	6020B	10	07/04/2022 2320	BPK	06/23/2022 1018	45893

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**1.5**		**0.44**	0.35	**0.18**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**140**		**12**	5.8	**2.7**	**mg/kg**	**2**
Cadmium	7440-43-9	6020B	0.58	U	1.2	0.58	0.22	mg/kg	2
Chromium	**7440-47-3**	**6020B**	**47**		**1.2**	1.0	**0.49**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**2.2**		**2.2**	1.2	**0.60**	**mg/kg**	**2**
Selenium	**7782-49-2**	**6020B**	**5.2**		**1.2**	0.87	**0.42**	**mg/kg**	**1**
Silver	7440-22-4	6020B	0.11	U	0.22	0.11	0.053	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-006**	
Description: **RI-SB-07 (2-6)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1925**	Project Name: **TAMP**	% Solids: **81.1**	**06/24/2022 2219**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	5	07/05/2022 1736	SCD	06/23/2022 1240	45902

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	12	U	16	12	5.0	ug/kg	1
Acenaphthylene	**208-96-8**	**8270E**	**21**		**16**	12	**5.7**	**ug/kg**	**1**
Acetophenone	98-86-2	8270E	60	U	78	60	30	ug/kg	1
Anthracene	**120-12-7**	**8270E**	**11**	**J**	**16**	12	**3.1**	**ug/kg**	**1**
Atrazine	1912-24-9	8270E	60	U	78	60	30	ug/kg	1
Benzaldehyde	100-52-7	8270E	60	U	78	60	30	ug/kg	1
Benzo(a)anthracene	**56-55-3**	**8270E**	**21**		**16**	12	**3.5**	**ug/kg**	**1**
Benzo(a)pyrene	**50-32-8**	**8270E**	**35**		**16**	12	**4.0**	**ug/kg**	**1**
Benzo(b)fluoranthene	**205-99-2**	**8270E**	**32**		**16**	12	**3.0**	**ug/kg**	**1**
Benzo(g,h,i)perylene	**191-24-2**	**8270E**	**37**		**16**	12	**3.9**	**ug/kg**	**1**
Benzo(k)fluoranthene	**207-08-9**	**8270E**	**12**	**J**	**16**	8.9	**2.9**	**ug/kg**	**1**
1,1'-Biphenyl	92-52-4	8270E	60	U	78	60	30	ug/kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	60	U	78	60	30	ug/kg	1
Butyl benzyl phthalate	85-68-7	8270E	60	U	78	60	30	ug/kg	1
Caprolactam	105-60-2	8270E	60	U	78	60	30	ug/kg	1
Carbazole	86-74-8	8270E	60	U	78	60	30	ug/kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	60	U	78	60	30	ug/kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	60	U	78	60	30	ug/kg	1
4-Chloroaniline	106-47-8	8270E	60	U	78	60	30	ug/kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	60	U	78	60	30	ug/kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	60	U	78	60	30	ug/kg	1
2-Chloronaphthalene	91-58-7	8270E	60	U	78	60	30	ug/kg	1
2-Chlorophenol	95-57-8	8270E	60	U	78	60	30	ug/kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	60	U	78	60	30	ug/kg	1
Chrysene	**218-01-9**	**8270E**	**22**		**16**	8.9	**2.7**	**ug/kg**	**1**
Dibenzo(a,h)anthracene	53-70-3	8270E	12	U	16	12	3.1	ug/kg	1
Dibenzofuran	132-64-9	8270E	60	U	78	60	30	ug/kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	60	U	78	60	30	ug/kg	1
2,4-Dichlorophenol	120-83-2	8270E	60	U	78	60	30	ug/kg	1
Diethylphthalate	84-66-2	8270E	60	U	78	60	30	ug/kg	1
Dimethyl phthalate	131-11-3	8270E	90	U	120	90	44	ug/kg	1
2,4-Dimethylphenol	105-67-9	8270E	60	U	78	60	30	ug/kg	1
Di-n-butyl phthalate	84-74-2	8270E	60	U	78	60	30	ug/kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	300	U	400	300	150	ug/kg	1
2,4-Dinitrophenol	51-28-5	8270E	300	U	400	300	150	ug/kg	1
2,4-Dinitrotoluene	121-14-2	8270E	120	U	160	120	60	ug/kg	1
2,6-Dinitrotoluene	606-20-2	8270E	120	U	160	120	60	ug/kg	1
Di-n-octylphthalate	117-84-0	8270E	60	U	78	60	30	ug/kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	300	U	400	300	150	ug/kg	1
Fluoranthene	**206-44-0**	**8270E**	**31**		**16**	8.9	**2.5**	**ug/kg**	**1**
Fluorene	86-73-7	8270E	12	U	16	12	3.4	ug/kg	1
Hexachlorobenzene	118-74-1	8270E	60	U	78	60	30	ug/kg	1
Hexachlorobutadiene	87-68-3	8270E	60	U	78	60	30	ug/kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	300	U	400	300	150	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-006**	
Description: **RI-SB-07 (2-6)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1925**	Project Name: **TAMP**	% Solids: **81.1**	**06/24/2022 2219**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	5	07/05/2022 1736	SCD	06/23/2022 1240	45902

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	60	U	78	60	30	ug/kg	1
Indeno(1,2,3-c,d)pyrene	**193-39-5**	**8270E**	**21**		**16**	12	**6.0**	**ug/kg**	**1**
Isophorone	78-59-1	8270E	60	U	78	60	30	ug/kg	1
2-Methylnaphthalene	91-57-6	8270E	12	U	16	12	5.9	ug/kg	1
2-Methylphenol	95-48-7	8270E	60	U	78	60	30	ug/kg	1
3+4-Methylphenol	106-44-5	8270E	120	U	160	120	60	ug/kg	1
Naphthalene	91-20-3	8270E	12	U	16	12	5.8	ug/kg	1
2-Nitroaniline	88-74-4	8270E	120	U	160	120	60	ug/kg	1
3-Nitroaniline	99-09-2	8270E	120	U	160	120	60	ug/kg	1
4-Nitroaniline	100-01-6	8270E	120	U	160	120	60	ug/kg	1
Nitrobenzene	98-95-3	8270E	60	U	78	60	30	ug/kg	1
2-Nitrophenol	88-75-5	8270E	120	U	160	120	60	ug/kg	1
4-Nitrophenol	100-02-7	8270E	300	U	400	300	150	ug/kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	60	U	78	60	30	ug/kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	60	U	78	60	30	ug/kg	1
Pentachlorophenol	87-86-5	8270E	300	U	400	300	150	ug/kg	1
Phenanthrene	**85-01-8**	**8270E**	**29**		**16**	12	**4.3**	**ug/kg**	**1**
Phenol	108-95-2	8270E	60	U	78	60	30	ug/kg	1
Pyrene	**129-00-0**	**8270E**	**40**		**16**	12	**3.0**	**ug/kg**	**1**
2,4,5-Trichlorophenol	95-95-4	8270E	60	U	78	60	30	ug/kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	60	U	78	60	30	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		66	44-115
2-Fluorophenol		75	35-115
Nitrobenzene-d5		77	37-122
Phenol-d5		75	33-122
Terphenyl-d14		97	54-127
2,4,6-Tribromophenol		67	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-006**	
Description: **RI-SB-07 (2-6)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1925**	Project Name: **TAMP**	% Solids: **81.1**	**06/24/2022 2219**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/04/2022 1638	BPK	06/23/2022 1018	45893
2	3050B	6020B	10	07/04/2022 2328	BPK	06/23/2022 1018	45893
3	3050B	6020B	10	07/06/2022 1104	BNW	06/23/2022 1018	45893

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**0.84**		**0.49**	0.39	**0.20**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**210**		**13**	6.3	**3.0**	**mg/kg**	**2**
Cadmium	7440-43-9	6020B	0.63	U	1.3	0.63	0.25	mg/kg	2
Chromium	**7440-47-3**	**6020B**	**120**		**13**	11	**5.4**	**mg/kg**	**3**
Lead	**7439-92-1**	**6020B**	**4.8**		**2.5**	1.4	**0.67**	**mg/kg**	**2**
Selenium	**7782-49-2**	**6020B**	**1.4**		**1.3**	0.95	**0.46**	**mg/kg**	**1**
Silver	**7440-22-4**	**6020B**	**0.24**	**J**	**0.25**	0.13	**0.059**	**mg/kg**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-007**	
Description: **RI-SB-08 (2-6)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1900**	Project Name: **TAMP**	% Solids: **72.7**	**06/24/2022 2219**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	10	07/05/2022 1801	SCD	06/23/2022 1240	45902

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	**83-32-9**	**8270E**	**160**		**35**	26	**11**	**ug/kg**	**1**
Acenaphthylene	**208-96-8**	**8270E**	**69**		**35**	26	**12**	**ug/kg**	**1**
Acetophenone	98-86-2	8270E	130	U	170	130	66	ug/kg	1
Anthracene	**120-12-7**	**8270E**	**210**		**35**	26	**6.7**	**ug/kg**	**1**
Atrazine	1912-24-9	8270E	130	U	170	130	66	ug/kg	1
Benzaldehyde	100-52-7	8270E	130	U	170	130	66	ug/kg	1
Benzo(a)anthracene	**56-55-3**	**8270E**	**150**		**35**	26	**7.8**	**ug/kg**	**1**
Benzo(a)pyrene	**50-32-8**	**8270E**	**140**		**35**	26	**8.7**	**ug/kg**	**1**
Benzo(b)fluoranthene	**205-99-2**	**8270E**	**120**		**35**	26	**6.6**	**ug/kg**	**1**
Benzo(g,h,i)perylene	**191-24-2**	**8270E**	**77**		**35**	26	**8.5**	**ug/kg**	**1**
Benzo(k)fluoranthene	**207-08-9**	**8270E**	**38**		**35**	19	**6.3**	**ug/kg**	**1**
1,1'-Biphenyl	92-52-4	8270E	130	U	170	130	66	ug/kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	130	U	170	130	66	ug/kg	1
Butyl benzyl phthalate	85-68-7	8270E	130	U	170	130	66	ug/kg	1
Caprolactam	105-60-2	8270E	130	U	170	130	66	ug/kg	1
Carbazole	86-74-8	8270E	130	U	170	130	66	ug/kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	130	U	170	130	66	ug/kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	130	U	170	130	66	ug/kg	1
4-Chloroaniline	106-47-8	8270E	130	U	170	130	66	ug/kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	130	U	170	130	66	ug/kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	130	U	170	130	66	ug/kg	1
2-Chloronaphthalene	91-58-7	8270E	130	U	170	130	66	ug/kg	1
2-Chlorophenol	95-57-8	8270E	130	U	170	130	66	ug/kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	130	U	170	130	66	ug/kg	1
Chrysene	**218-01-9**	**8270E**	**190**		**35**	19	**5.9**	**ug/kg**	**1**
Dibenzo(a,h)anthracene	53-70-3	8270E	26	U	35	26	6.7	ug/kg	1
Dibenzofuran	**132-64-9**	**8270E**	**74**	**J**	**170**	130	**66**	**ug/kg**	**1**
3,3'-Dichlorobenzidine	91-94-1	8270E	130	U	170	130	66	ug/kg	1
2,4-Dichlorophenol	120-83-2	8270E	130	U	170	130	66	ug/kg	1
Diethylphthalate	84-66-2	8270E	130	U	170	130	66	ug/kg	1
Dimethyl phthalate	131-11-3	8270E	200	U	260	200	97	ug/kg	1
2,4-Dimethylphenol	105-67-9	8270E	130	U	170	130	66	ug/kg	1
Di-n-butyl phthalate	84-74-2	8270E	130	U	170	130	66	ug/kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	660	U	880	660	330	ug/kg	1
2,4-Dinitrophenol	51-28-5	8270E	660	U	880	660	330	ug/kg	1
2,4-Dinitrotoluene	121-14-2	8270E	260	U	350	260	130	ug/kg	1
2,6-Dinitrotoluene	606-20-2	8270E	260	U	350	260	130	ug/kg	1
Di-n-octylphthalate	117-84-0	8270E	130	U	170	130	66	ug/kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	660	U	880	660	330	ug/kg	1
Fluoranthene	**206-44-0**	**8270E**	**330**		**35**	19	**5.5**	**ug/kg**	**1**
Fluorene	**86-73-7**	**8270E**	**250**		**35**	26	**7.5**	**ug/kg**	**1**
Hexachlorobenzene	118-74-1	8270E	130	U	170	130	66	ug/kg	1
Hexachlorobutadiene	87-68-3	8270E	130	U	170	130	66	ug/kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	660	U	880	660	330	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-007**	
Description: **RI-SB-08 (2-6)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1900**	Project Name: **TAMP**	% Solids: **72.7**	**06/24/2022 2219**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	10	07/05/2022 1801	SCD	06/23/2022 1240	45902

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	130	U	170	130	66	ug/kg	1
Indeno(1,2,3-c,d)pyrene	**193-39-5**	**8270E**	**55**		**35**	26	**13**	**ug/kg**	**1**
Isophorone	78-59-1	8270E	130	U	170	130	66	ug/kg	1
2-Methylnaphthalene	**91-57-6**	**8270E**	**160**		**35**	26	**13**	**ug/kg**	**1**
2-Methylphenol	95-48-7	8270E	130	U	170	130	66	ug/kg	1
3+4-Methylphenol	106-44-5	8270E	260	U	350	260	130	ug/kg	1
Naphthalene	**91-20-3**	**8270E**	**71**		**35**	26	**13**	**ug/kg**	**1**
2-Nitroaniline	88-74-4	8270E	260	U	350	260	130	ug/kg	1
3-Nitroaniline	99-09-2	8270E	260	U	350	260	130	ug/kg	1
4-Nitroaniline	100-01-6	8270E	260	U	350	260	130	ug/kg	1
Nitrobenzene	98-95-3	8270E	130	U	170	130	66	ug/kg	1
2-Nitrophenol	88-75-5	8270E	260	U	350	260	130	ug/kg	1
4-Nitrophenol	100-02-7	8270E	660	U	880	660	330	ug/kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	130	U	170	130	66	ug/kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	130	U	170	130	66	ug/kg	1
Pentachlorophenol	87-86-5	8270E	660	U	880	660	330	ug/kg	1
Phenanthrene	**85-01-8**	**8270E**	**880**		**35**	26	**9.5**	**ug/kg**	**1**
Phenol	108-95-2	8270E	130	U	170	130	66	ug/kg	1
Pyrene	**129-00-0**	**8270E**	**540**		**35**	26	**6.6**	**ug/kg**	**1**
2,4,5-Trichlorophenol	95-95-4	8270E	130	U	170	130	66	ug/kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	130	U	170	130	66	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		81	44-115
2-Fluorophenol		68	35-115
Nitrobenzene-d5		115	37-122
Phenol-d5		58	33-122
Terphenyl-d14		98	54-127
2,4,6-Tribromophenol		122	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-007**	
Description: **RI-SB-08 (2-6)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1900**	Project Name: **TAMP**	% Solids: **72.7**	**06/24/2022 2219**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/04/2022 1700	BPK	06/23/2022 1018	45893
2	3050B	6020B	10	07/04/2022 2336	BPK	06/23/2022 1018	45893

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**0.91**		**0.54**	0.43	**0.22**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**190**		**14**	6.7	**3.4**	**mg/kg**	**2**
Cadmium	7440-43-9	6020B	0.067	U	0.14	0.067	0.027	mg/kg	1
Chromium	**7440-47-3**	**6020B**	**28**		**1.4**	1.2	**0.60**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**5.4**		**0.27**	0.15	**0.074**	**mg/kg**	**1**
Selenium	**7782-49-2**	**6020B**	**0.74**	**J**	**1.4**	1.0	**0.51**	**mg/kg**	**1**
Silver	7440-22-4	6020B	0.14	U	0.27	0.14	0.065	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-008**	
Description: **RI-SB-09b (2-8)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1835**	Project Name: **TAMP**	% Solids: **75.0**	**06/24/2022 2219**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	10	07/05/2022 1826	SCD	06/23/2022 1240	45902

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	**83-32-9**	**8270E**	**85**		**35**	26	**11**	**ug/kg**	**1**
Acenaphthylene	208-96-8	8270E	26	U	35	26	12	ug/kg	1
Acetophenone	98-86-2	8270E	130	U	170	130	65	ug/kg	1
Anthracene	**120-12-7**	**8270E**	**220**		**35**	26	**6.6**	**ug/kg**	**1**
Atrazine	1912-24-9	8270E	130	U	170	130	65	ug/kg	1
Benzaldehyde	100-52-7	8270E	130	U	170	130	65	ug/kg	1
Benzo(a)anthracene	**56-55-3**	**8270E**	**460**		**35**	26	**7.7**	**ug/kg**	**1**
Benzo(a)pyrene	**50-32-8**	**8270E**	**450**		**35**	26	**8.6**	**ug/kg**	**1**
Benzo(b)fluoranthene	**205-99-2**	**8270E**	**530**		**35**	26	**6.5**	**ug/kg**	**1**
Benzo(g,h,i)perylene	**191-24-2**	**8270E**	**220**		**35**	26	**8.4**	**ug/kg**	**1**
Benzo(k)fluoranthene	**207-08-9**	**8270E**	**180**		**35**	19	**6.2**	**ug/kg**	**1**
1,1'-Biphenyl	92-52-4	8270E	130	U	170	130	65	ug/kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	130	U	170	130	65	ug/kg	1
Butyl benzyl phthalate	85-68-7	8270E	130	U	170	130	65	ug/kg	1
Caprolactam	105-60-2	8270E	130	U	170	130	65	ug/kg	1
Carbazole	**86-74-8**	**8270E**	**110**	**J**	**170**	130	**65**	**ug/kg**	**1**
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	130	U	170	130	65	ug/kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	130	U	170	130	65	ug/kg	1
4-Chloroaniline	106-47-8	8270E	130	U	170	130	65	ug/kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	130	U	170	130	65	ug/kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	130	U	170	130	65	ug/kg	1
2-Chloronaphthalene	91-58-7	8270E	130	U	170	130	65	ug/kg	1
2-Chlorophenol	95-57-8	8270E	130	U	170	130	65	ug/kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	130	U	170	130	65	ug/kg	1
Chrysene	**218-01-9**	**8270E**	**470**		**35**	19	**5.8**	**ug/kg**	**1**
Dibenzo(a,h)anthracene	53-70-3	8270E	26	U	35	26	6.6	ug/kg	1
Dibenzofuran	132-64-9	8270E	130	U	170	130	65	ug/kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	130	U	170	130	65	ug/kg	1
2,4-Dichlorophenol	120-83-2	8270E	130	U	170	130	65	ug/kg	1
Diethylphthalate	84-66-2	8270E	130	U	170	130	65	ug/kg	1
Dimethyl phthalate	131-11-3	8270E	200	U	260	200	96	ug/kg	1
2,4-Dimethylphenol	105-67-9	8270E	130	U	170	130	65	ug/kg	1
Di-n-butyl phthalate	84-74-2	8270E	130	U	170	130	65	ug/kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	650	U	870	650	320	ug/kg	1
2,4-Dinitrophenol	51-28-5	8270E	650	U	870	650	320	ug/kg	1
2,4-Dinitrotoluene	121-14-2	8270E	260	U	350	260	130	ug/kg	1
2,6-Dinitrotoluene	606-20-2	8270E	260	U	350	260	130	ug/kg	1
Di-n-octylphthalate	117-84-0	8270E	130	U	170	130	65	ug/kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	650	U	870	650	320	ug/kg	1
Fluoranthene	**206-44-0**	**8270E**	**860**		**35**	19	**5.5**	**ug/kg**	**1**
Fluorene	**86-73-7**	**8270E**	**79**		**35**	26	**7.4**	**ug/kg**	**1**
Hexachlorobenzene	118-74-1	8270E	130	U	170	130	65	ug/kg	1
Hexachlorobutadiene	87-68-3	8270E	130	U	170	130	65	ug/kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	650	U	870	650	320	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-008**	
Description: **RI-SB-09b (2-8)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1835**	Project Name: **TAMP**	% Solids: **75.0**	**06/24/2022 2219**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	10	07/05/2022 1826	SCD	06/23/2022 1240	45902

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	130	U	170	130	65	ug/kg	1
Indeno(1,2,3-c,d)pyrene	**193-39-5**	**8270E**	**210**		**35**	26	**13**	**ug/kg**	**1**
Isophorone	78-59-1	8270E	130	U	170	130	65	ug/kg	1
2-Methylnaphthalene	91-57-6	8270E	26	U	35	26	13	ug/kg	1
2-Methylphenol	95-48-7	8270E	130	U	170	130	65	ug/kg	1
3+4-Methylphenol	106-44-5	8270E	260	U	350	260	130	ug/kg	1
Naphthalene	91-20-3	8270E	26	U	35	26	13	ug/kg	1
2-Nitroaniline	88-74-4	8270E	260	U	350	260	130	ug/kg	1
3-Nitroaniline	99-09-2	8270E	260	U	350	260	130	ug/kg	1
4-Nitroaniline	100-01-6	8270E	260	U	350	260	130	ug/kg	1
Nitrobenzene	98-95-3	8270E	130	U	170	130	65	ug/kg	1
2-Nitrophenol	88-75-5	8270E	260	U	350	260	130	ug/kg	1
4-Nitrophenol	100-02-7	8270E	650	U	870	650	320	ug/kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	130	U	170	130	65	ug/kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	130	U	170	130	65	ug/kg	1
Pentachlorophenol	87-86-5	8270E	650	U	870	650	320	ug/kg	1
Phenanthrene	**85-01-8**	**8270E**	**820**		**35**	26	**9.4**	**ug/kg**	**1**
Phenol	108-95-2	8270E	130	U	170	130	65	ug/kg	1
Pyrene	**129-00-0**	**8270E**	**950**		**35**	26	**6.5**	**ug/kg**	**1**
2,4,5-Trichlorophenol	95-95-4	8270E	130	U	170	130	65	ug/kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	130	U	170	130	65	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		73	44-115
2-Fluorophenol		38	35-115
Nitrobenzene-d5		117	37-122
Phenol-d5		50	33-122
Terphenyl-d14		99	54-127
2,4,6-Tribromophenol		103	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-008**	
Description: **RI-SB-09b (2-8)**		Matrix: **Solid**	
Date Sampled: **06/20/2022 1835**	Project Name: **TAMP**	% Solids: **75.0**	**06/24/2022 2219**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/04/2022 1708	BPK	06/23/2022 1018	45893
2	3050B	6020B	10	07/04/2022 2343	BPK	06/23/2022 1018	45893

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**1.8**		**0.47**	0.38	**0.19**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**150**		**12**	5.8	**2.9**	**mg/kg**	**2**
Cadmium	7440-43-9	6020B	0.58	U	1.2	0.58	0.24	mg/kg	2
Chromium	**7440-47-3**	**6020B**	**23**		**1.2**	1.0	**0.52**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**6.8**		**2.4**	1.3	**0.64**	**mg/kg**	**2**
Selenium	**7782-49-2**	**6020B**	**4.8**		**1.2**	0.87	**0.45**	**mg/kg**	**1**
Silver	7440-22-4	6020B	0.12	U	0.24	0.12	0.057	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-010**	
Description: **RI-SB-11 (10-12)**		Matrix: **Solid**	
Date Sampled: **06/21/2022 1240**	Project Name: **TAMP**	% Solids: **61.8**	**06/22/2022 2358**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	1	07/05/2022 1916	SCD	06/23/2022 1240	45902

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	3.1	U	4.2	3.1	1.3	ug/kg	1
Acenaphthylene	208-96-8	8270E	3.1	U	4.2	3.1	1.5	ug/kg	1
Acetophenone	98-86-2	8270E	15	U	20	15	7.8	ug/kg	1
Anthracene	120-12-7	8270E	3.1	U	4.2	3.1	0.79	ug/kg	1
Atrazine	1912-24-9	8270E	15	U	20	15	7.8	ug/kg	1
Benzaldehyde	100-52-7	8270E	15	U	20	15	7.8	ug/kg	1
Benzo(a)anthracene	56-55-3	8270E	3.1	U	4.2	3.1	0.92	ug/kg	1
Benzo(a)pyrene	50-32-8	8270E	3.1	U	4.2	3.1	1.0	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270E	3.1	U	4.2	3.1	0.78	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270E	3.1	U	4.2	3.1	1.0	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270E	2.3	U	4.2	2.3	0.75	ug/kg	1
1,1'-Biphenyl	92-52-4	8270E	15	U	20	15	7.8	ug/kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	15	U	20	15	7.8	ug/kg	1
Butyl benzyl phthalate	85-68-7	8270E	15	U	20	15	7.8	ug/kg	1
Caprolactam	**105-60-2**	**8270E**	**8.2**	**J**	**20**	15	**7.8**	**ug/kg**	**1**
Carbazole	86-74-8	8270E	15	U	20	15	7.8	ug/kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	15	U	20	15	7.8	ug/kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	15	U	20	15	7.8	ug/kg	1
4-Chloroaniline	106-47-8	8270E	15	U	20	15	7.8	ug/kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	15	U	20	15	7.8	ug/kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	15	U	20	15	7.8	ug/kg	1
2-Chloronaphthalene	91-58-7	8270E	15	U	20	15	7.8	ug/kg	1
2-Chlorophenol	95-57-8	8270E	15	U	20	15	7.8	ug/kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	15	U	20	15	7.8	ug/kg	1
Chrysene	218-01-9	8270E	2.3	U	4.2	2.3	0.70	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270E	3.1	U	4.2	3.1	0.79	ug/kg	1
Dibenzofuran	132-64-9	8270E	15	U	20	15	7.8	ug/kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	15	U	20	15	7.8	ug/kg	1
2,4-Dichlorophenol	120-83-2	8270E	15	U	20	15	7.8	ug/kg	1
Diethylphthalate	84-66-2	8270E	15	U	20	15	7.8	ug/kg	1
Dimethyl phthalate	131-11-3	8270E	23	U	31	23	12	ug/kg	1
2,4-Dimethylphenol	105-67-9	8270E	15	U	20	15	7.8	ug/kg	1
Di-n-butyl phthalate	84-74-2	8270E	15	U	20	15	7.8	ug/kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	75	U	100	75	39	ug/kg	1
2,4-Dinitrophenol	51-28-5	8270E	75	U	100	75	39	ug/kg	1
2,4-Dinitrotoluene	121-14-2	8270E	31	U	42	31	16	ug/kg	1
2,6-Dinitrotoluene	606-20-2	8270E	31	U	42	31	16	ug/kg	1
Di-n-octylphthalate	117-84-0	8270E	15	U	20	15	7.8	ug/kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	75	U	100	75	39	ug/kg	1
Fluoranthene	**206-44-0**	**8270E**	**2.9**	**J**	**4.2**	2.3	**0.65**	**ug/kg**	**1**
Fluorene	86-73-7	8270E	3.1	U	4.2	3.1	0.89	ug/kg	1
Hexachlorobenzene	118-74-1	8270E	15	U	20	15	7.8	ug/kg	1
Hexachlorobutadiene	87-68-3	8270E	15	U	20	15	7.8	ug/kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	75	U	100	75	39	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-010**	
Description: **RI-SB-11 (10-12)**		Matrix: **Solid**	
Date Sampled: **06/21/2022 1240**	Project Name: **TAMP**	% Solids: **61.8**	**06/22/2022 2358**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	1	07/05/2022 1916	SCD	06/23/2022 1240	45902

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	15	U	20	15	7.8	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	3.1	U	4.2	3.1	1.6	ug/kg	1
Isophorone	78-59-1	8270E	15	U	20	15	7.8	ug/kg	1
2-Methylnaphthalene	91-57-6	8270E	3.1	U	4.2	3.1	1.5	ug/kg	1
2-Methylphenol	95-48-7	8270E	15	U	20	15	7.8	ug/kg	1
3+4-Methylphenol	106-44-5	8270E	31	U	42	31	16	ug/kg	1
Naphthalene	91-20-3	8270E	3.1	U	4.2	3.1	1.5	ug/kg	1
2-Nitroaniline	88-74-4	8270E	31	U	42	31	16	ug/kg	1
3-Nitroaniline	99-09-2	8270E	31	U	42	31	16	ug/kg	1
4-Nitroaniline	100-01-6	8270E	31	U	42	31	16	ug/kg	1
Nitrobenzene	98-95-3	8270E	15	U	20	15	7.8	ug/kg	1
2-Nitrophenol	88-75-5	8270E	31	U	42	31	16	ug/kg	1
4-Nitrophenol	100-02-7	8270E	75	U	100	75	39	ug/kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	15	U	20	15	7.8	ug/kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	15	U	20	15	7.8	ug/kg	1
Pentachlorophenol	87-86-5	8270E	75	U	100	75	39	ug/kg	1
Phenanthrene	**85-01-8**	**8270E**	**2.6**	**J**	**4.2**	3.1	**1.1**	**ug/kg**	**1**
Phenol	108-95-2	8270E	15	U	20	15	7.8	ug/kg	1
Pyrene	**129-00-0**	**8270E**	**3.1**	**J**	**4.2**	3.1	**0.78**	**ug/kg**	**1**
2,4,5-Trichlorophenol	95-95-4	8270E	15	U	20	15	7.8	ug/kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	15	U	20	15	7.8	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		75	44-115
2-Fluorophenol		81	35-115
Nitrobenzene-d5		56	37-122
Phenol-d5		67	33-122
Terphenyl-d14		102	54-127
2,4,6-Tribromophenol		69	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-010**	
Description: **RI-SB-11 (10-12)**		Matrix: **Solid**	
Date Sampled: **06/21/2022 1240**	Project Name: **TAMP**	% Solids: **61.8**	**06/22/2022 2358**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/04/2022 1723	BPK	06/23/2022 1018	45893
2	3050B	6020B	10	07/04/2022 2358	BPK	06/23/2022 1018	45893
3	3050B	6020B	10	07/06/2022 1107	BNW	06/23/2022 1018	45893

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**0.76**		**0.63**	0.50	**0.25**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**220**		**16**	7.7	**3.9**	**mg/kg**	**2**
Cadmium	7440-43-9	6020B	0.77	U	1.6	0.77	0.32	mg/kg	2
Chromium	**7440-47-3**	**6020B**	**410**		**16**	14	**7.0**	**mg/kg**	**3**
Lead	**7439-92-1**	**6020B**	**1.9**	**J**	**3.2**	1.7	**0.86**	**mg/kg**	**2**
Selenium	**7782-49-2**	**6020B**	**2.6**		**1.6**	1.2	**0.60**	**mg/kg**	**1**
Silver	7440-22-4	6020B	0.16	U	0.32	0.16	0.076	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-011**	
Description: **RI-SB-10 (6-10)**		Matrix: **Solid**	
Date Sampled: **06/21/2022 1200**	Project Name: **TAMP**	% Solids: **73.3**	**06/22/2022 2358**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	1	07/05/2022 1941	SCD	06/23/2022 1240	45902

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	2.7	U	3.6	2.7	1.1	ug/kg	1
Acenaphthylene	208-96-8	8270E	2.7	U	3.6	2.7	1.3	ug/kg	1
Acetophenone	98-86-2	8270E	14	U	18	14	6.7	ug/kg	1
Anthracene	120-12-7	8270E	2.7	U	3.6	2.7	0.69	ug/kg	1
Atrazine	1912-24-9	8270E	14	U	18	14	6.7	ug/kg	1
Benzaldehyde	100-52-7	8270E	14	U	18	14	6.7	ug/kg	1
Benzo(a)anthracene	56-55-3	8270E	2.7	U	3.6	2.7	0.79	ug/kg	1
Benzo(a)pyrene	50-32-8	8270E	2.7	U	3.6	2.7	0.89	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270E	2.7	U	3.6	2.7	0.67	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270E	2.7	U	3.6	2.7	0.88	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270E	2.0	U	3.6	2.0	0.65	ug/kg	1
1,1'-Biphenyl	92-52-4	8270E	14	U	18	14	6.7	ug/kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	14	U	18	14	6.7	ug/kg	1
Butyl benzyl phthalate	85-68-7	8270E	14	U	18	14	6.7	ug/kg	1
Caprolactam	**105-60-2**	**8270E**	**11**	**J**	**18**	14	**6.7**	**ug/kg**	**1**
Carbazole	86-74-8	8270E	14	U	18	14	6.7	ug/kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	14	U	18	14	6.7	ug/kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	14	U	18	14	6.7	ug/kg	1
4-Chloroaniline	106-47-8	8270E	14	U	18	14	6.7	ug/kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	14	U	18	14	6.7	ug/kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	14	U	18	14	6.7	ug/kg	1
2-Chloronaphthalene	91-58-7	8270E	14	U	18	14	6.7	ug/kg	1
2-Chlorophenol	95-57-8	8270E	14	U	18	14	6.7	ug/kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	14	U	18	14	6.7	ug/kg	1
Chrysene	218-01-9	8270E	2.0	U	3.6	2.0	0.61	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270E	2.7	U	3.6	2.7	0.69	ug/kg	1
Dibenzofuran	132-64-9	8270E	14	U	18	14	6.7	ug/kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	14	U	18	14	6.7	ug/kg	1
2,4-Dichlorophenol	120-83-2	8270E	14	U	18	14	6.7	ug/kg	1
Diethylphthalate	84-66-2	8270E	14	U	18	14	6.7	ug/kg	1
Dimethyl phthalate	131-11-3	8270E	20	U	27	20	10	ug/kg	1
2,4-Dimethylphenol	105-67-9	8270E	14	U	18	14	6.7	ug/kg	1
Di-n-butyl phthalate	84-74-2	8270E	14	U	18	14	6.7	ug/kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	67	U	90	67	34	ug/kg	1
2,4-Dinitrophenol	51-28-5	8270E	67	U	90	67	34	ug/kg	1
2,4-Dinitrotoluene	121-14-2	8270E	27	U	36	27	13	ug/kg	1
2,6-Dinitrotoluene	606-20-2	8270E	27	U	36	27	13	ug/kg	1
Di-n-octylphthalate	117-84-0	8270E	14	U	18	14	6.7	ug/kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	67	U	90	67	34	ug/kg	1
Fluoranthene	**206-44-0**	**8270E**	**1.8**	**J**	**3.6**	2.0	**0.57**	**ug/kg**	**1**
Fluorene	86-73-7	8270E	2.7	U	3.6	2.7	0.77	ug/kg	1
Hexachlorobenzene	118-74-1	8270E	14	U	18	14	6.7	ug/kg	1
Hexachlorobutadiene	87-68-3	8270E	14	U	18	14	6.7	ug/kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	67	U	90	67	34	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-011**	
Description: **RI-SB-10 (6-10)**		Matrix: **Solid**	
Date Sampled: **06/21/2022 1200**	Project Name: **TAMP**	% Solids: **73.3**	**06/22/2022 2358**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	1	07/05/2022 1941	SCD	06/23/2022 1240	45902

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	14	U	18	14	6.7	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	2.7	U	3.6	2.7	1.3	ug/kg	1
Isophorone	78-59-1	8270E	14	U	18	14	6.7	ug/kg	1
2-Methylnaphthalene	91-57-6	8270E	2.7	U	3.6	2.7	1.3	ug/kg	1
2-Methylphenol	95-48-7	8270E	14	U	18	14	6.7	ug/kg	1
3+4-Methylphenol	106-44-5	8270E	27	U	36	27	13	ug/kg	1
Naphthalene	91-20-3	8270E	2.7	U	3.6	2.7	1.3	ug/kg	1
2-Nitroaniline	88-74-4	8270E	27	U	36	27	13	ug/kg	1
3-Nitroaniline	99-09-2	8270E	27	U	36	27	13	ug/kg	1
4-Nitroaniline	100-01-6	8270E	27	U	36	27	13	ug/kg	1
Nitrobenzene	98-95-3	8270E	14	U	18	14	6.7	ug/kg	1
2-Nitrophenol	88-75-5	8270E	27	U	36	27	13	ug/kg	1
4-Nitrophenol	100-02-7	8270E	67	U	90	67	34	ug/kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	14	U	18	14	6.7	ug/kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	14	U	18	14	6.7	ug/kg	1
Pentachlorophenol	87-86-5	8270E	67	U	90	67	34	ug/kg	1
Phenanthrene	85-01-8	8270E	2.7	U	3.6	2.7	0.97	ug/kg	1
Phenol	108-95-2	8270E	14	U	18	14	6.7	ug/kg	1
Pyrene	**129-00-0**	**8270E**	**2.4**	**J**	**3.6**	2.7	**0.67**	**ug/kg**	**1**
2,4,5-Trichlorophenol	95-95-4	8270E	14	U	18	14	6.7	ug/kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	14	U	18	14	6.7	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		67	44-115
2-Fluorophenol		78	35-115
Nitrobenzene-d5		47	37-122
Phenol-d5		67	33-122
Terphenyl-d14		95	54-127
2,4,6-Tribromophenol		59	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-011**	
Description: **RI-SB-10 (6-10)**		Matrix: **Solid**	
Date Sampled: **06/21/2022 1200**	Project Name: **TAMP**	% Solids: **73.3**	**06/22/2022 2358**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/04/2022 1731	BPK	06/23/2022 1018	45893
2	3050B	6020B	10	07/05/2022 0006	BPK	06/23/2022 1018	45893

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**1.6**		**0.50**	0.40	**0.20**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**110**		**13**	6.3	**3.1**	**mg/kg**	**2**
Cadmium	7440-43-9	6020B	0.63	U	1.3	0.63	0.25	mg/kg	2
Chromium	**7440-47-3**	**6020B**	**71**	**S**	**1.3**	1.1	**0.55**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**11**		**2.5**	1.4	**0.68**	**mg/kg**	**2**
Selenium	**7782-49-2**	**6020B**	**3.0**		**1.3**	0.95	**0.47**	**mg/kg**	**1**
Silver	7440-22-4	6020B	0.13	US	0.25	0.13	0.060	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XF22018-012**

Description: **EB-01** Matrix: **Aqueous**

Date Sampled: **06/21/2022 1435** Project Name: **TAMP**

Date Received: **06/22/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	06/25/2022 1657	PAP		46528

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**12**	**JL**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	**75-09-2**	**8260D**	**1.7**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-012**	
Description: **EB-01**		Matrix: **Aqueous**	
Date Sampled: **06/21/2022 1435**	Project Name: **TAMP**		
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	06/25/2022 1657	PAP		46528

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		98	81-118
Bromofluorobenzene		106	85-114
Toluene-d8		101	89-112
Dibromofluoromethane		101	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XF22018-012**

Description: **EB-01** Matrix: **Aqueous**

Date Sampled: **06/21/2022 1435** Project Name: **TAMP**

Date Received: **06/22/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	07/05/2022 2006	SCD	06/22/2022 1452	45818

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	**105-60-2**	**8270E**	**1.1**	**J**	**3.0**	2.0	**1.0**	**ug/L**	**1**
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	84-74-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	UL	4.0	3.0	1.5	ug/L	1
Fluoranthene	**206-44-0**	**8270E**	**0.046**	**J**	**0.20**	0.10	**0.040**	**ug/L**	**1**
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XF22018-012**
Description: **EB-01** Matrix: **Aqueous**
Date Sampled: **06/21/2022 1435** Project Name: **TAMP**
Date Received: **06/22/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	07/05/2022 2006	SCD	06/22/2022 1452	45818

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	**91-57-6**	**8270E**	**0.041**	**J**	**0.20**	0.10	**0.040**	**ug/L**	**1**
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	**91-20-3**	**8270E**	**0.14**	**BJ**	**0.20**	0.10	**0.040**	**ug/L**	**1**
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	**108-95-2**	**8270E**	**1.8**		**1.6**	1.0	**0.50**	**ug/L**	**1**
Pyrene	**129-00-0**	**8270E**	**0.061**	**J**	**0.20**	0.10	**0.040**	**ug/L**	**1**
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		80	44-119
2-Fluorophenol		46	19-119
Nitrobenzene-d5		57	44-120
Phenol-d5		59	10-115
Terphenyl-d14		111	50-134
2,4,6-Tribromophenol		66	43-140

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U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.** Laboratory ID: **XF22018-012**

Description: **EB-01** Matrix: **Aqueous**

Date Sampled: **06/21/2022 1435** Project Name: **TAMP**

Date Received: **06/22/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	07/02/2022 2014	BPK	06/27/2022 1524	46273
1		7470A	1	06/24/2022 0737	JAB2	06/24/2022 0236	46040

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**1.3**	**J**	**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	7440-43-9	6020B	0.25	U	0.50	0.25	0.13	ug/L	1
Chromium	7440-47-3	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Lead	**7439-92-1**	**6020B**	**2.3**		**1.0**	0.50	**0.25**	**ug/L**	**1**
Mercury	7439-97-6	7470A	0.00018	U	0.00020	0.00018	0.000091	mg/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-013**	
Description: **RI-SB-12(2-6)**		Matrix: **Solid**	
Date Sampled: **06/21/2022 1420**	Project Name: **TAMP**	% Solids: **93.4**	**06/22/2022 2358**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	5	07/05/2022 2031	SCD	06/23/2022 1240	45902

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	10	U	14	10	4.4	ug/kg	1
Acenaphthylene	208-96-8	8270E	10	U	14	10	5.0	ug/kg	1
Acetophenone	98-86-2	8270E	53	U	69	53	27	ug/kg	1
Anthracene	120-12-7	8270E	10	U	14	10	2.7	ug/kg	1
Atrazine	1912-24-9	8270E	53	U	69	53	27	ug/kg	1
Benzaldehyde	100-52-7	8270E	53	U	69	53	27	ug/kg	1
Benzo(a)anthracene	56-55-3	8270E	10	U	14	10	3.1	ug/kg	1
Benzo(a)pyrene	50-32-8	8270E	10	U	14	10	3.5	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270E	10	U	14	10	2.7	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270E	10	U	14	10	3.5	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270E	7.8	U	14	7.8	2.6	ug/kg	1
1,1'-Biphenyl	92-52-4	8270E	53	U	69	53	27	ug/kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	53	U	69	53	27	ug/kg	1
Butyl benzyl phthalate	85-68-7	8270E	53	U	69	53	27	ug/kg	1
Caprolactam	105-60-2	8270E	53	U	69	53	27	ug/kg	1
Carbazole	86-74-8	8270E	53	U	69	53	27	ug/kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	53	U	69	53	27	ug/kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	53	U	69	53	27	ug/kg	1
4-Chloroaniline	106-47-8	8270E	53	U	69	53	27	ug/kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	53	U	69	53	27	ug/kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	53	U	69	53	27	ug/kg	1
2-Chloronaphthalene	91-58-7	8270E	53	U	69	53	27	ug/kg	1
2-Chlorophenol	95-57-8	8270E	53	U	69	53	27	ug/kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	53	U	69	53	27	ug/kg	1
Chrysene	218-01-9	8270E	7.8	U	14	7.8	2.4	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270E	10	U	14	10	2.7	ug/kg	1
Dibenzofuran	132-64-9	8270E	53	U	69	53	27	ug/kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	53	U	69	53	27	ug/kg	1
2,4-Dichlorophenol	120-83-2	8270E	53	U	69	53	27	ug/kg	1
Diethylphthalate	84-66-2	8270E	53	U	69	53	27	ug/kg	1
Dimethyl phthalate	131-11-3	8270E	83	U	110	83	39	ug/kg	1
2,4-Dimethylphenol	105-67-9	8270E	53	U	69	53	27	ug/kg	1
Di-n-butyl phthalate	84-74-2	8270E	53	U	69	53	27	ug/kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	270	U	360	270	130	ug/kg	1
2,4-Dinitrophenol	51-28-5	8270E	270	U	360	270	130	ug/kg	1
2,4-Dinitrotoluene	121-14-2	8270E	100	U	140	100	53	ug/kg	1
2,6-Dinitrotoluene	606-20-2	8270E	100	U	140	100	53	ug/kg	1
Di-n-octylphthalate	117-84-0	8270E	53	U	69	53	27	ug/kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	270	U	360	270	130	ug/kg	1
Fluoranthene	206-44-0	8270E	7.8	U	14	7.8	2.2	ug/kg	1
Fluorene	86-73-7	8270E	10	U	14	10	3.0	ug/kg	1
Hexachlorobenzene	118-74-1	8270E	53	U	69	53	27	ug/kg	1
Hexachlorobutadiene	87-68-3	8270E	53	U	69	53	27	ug/kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	270	U	360	270	130	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-013**	
Description: **RI-SB-12(2-6)**		Matrix: **Solid**	
Date Sampled: **06/21/2022 1420**	Project Name: **TAMP**	% Solids: **93.4**	**06/22/2022 2358**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	5	07/05/2022 2031	SCD	06/23/2022 1240	45902

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	53	U	69	53	27	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	10	U	14	10	5.3	ug/kg	1
Isophorone	78-59-1	8270E	53	U	69	53	27	ug/kg	1
2-Methylnaphthalene	91-57-6	8270E	10	U	14	10	5.3	ug/kg	1
2-Methylphenol	95-48-7	8270E	53	U	69	53	27	ug/kg	1
3+4-Methylphenol	106-44-5	8270E	100	U	140	100	53	ug/kg	1
Naphthalene	91-20-3	8270E	10	U	14	10	5.2	ug/kg	1
2-Nitroaniline	88-74-4	8270E	100	U	140	100	53	ug/kg	1
3-Nitroaniline	99-09-2	8270E	100	U	140	100	53	ug/kg	1
4-Nitroaniline	100-01-6	8270E	100	U	140	100	53	ug/kg	1
Nitrobenzene	98-95-3	8270E	53	U	69	53	27	ug/kg	1
2-Nitrophenol	88-75-5	8270E	100	U	140	100	53	ug/kg	1
4-Nitrophenol	100-02-7	8270E	270	U	360	270	130	ug/kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	53	U	69	53	27	ug/kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	53	U	69	53	27	ug/kg	1
Pentachlorophenol	87-86-5	8270E	270	U	360	270	130	ug/kg	1
Phenanthrene	85-01-8	8270E	10	U	14	10	3.8	ug/kg	1
Phenol	108-95-2	8270E	53	U	69	53	27	ug/kg	1
Pyrene	129-00-0	8270E	10	U	14	10	2.7	ug/kg	1
2,4,5-Trichlorophenol	95-95-4	8270E	53	U	69	53	27	ug/kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	53	U	69	53	27	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		75	44-115
2-Fluorophenol		82	35-115
Nitrobenzene-d5		81	37-122
Phenol-d5		77	33-122
Terphenyl-d14		105	54-127
2,4,6-Tribromophenol		73	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF22018-013**	
Description: **RI-SB-12(2-6)**		Matrix: **Solid**	
Date Sampled: **06/21/2022 1420**	Project Name: **TAMP**	% Solids: **93.4**	**06/22/2022 2358**
Date Received: **06/22/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/04/2022 1809	BPK	06/23/2022 1018	45893

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**2.5**		**0.43**	0.34	**0.17**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**40**		**1.1**	0.53	**0.26**	**mg/kg**	**1**
Cadmium	7440-43-9	6020B	0.053	U	0.11	0.053	0.021	mg/kg	1
Chromium	**7440-47-3**	**6020B**	**26**		**1.1**	0.94	**0.47**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**10**		**0.21**	0.11	**0.058**	**mg/kg**	**1**
Selenium	**7782-49-2**	**6020B**	**1.2**		**1.1**	0.80	**0.40**	**mg/kg**	**1**
Silver	7440-22-4	6020B	0.11	U	0.21	0.11	0.051	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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QC Summary

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46528-001
Batch: 46528
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	06/25/2022 1611
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	06/25/2022 1611
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	06/25/2022 1611
Carbon disulfide	**0.43**	**J**	**1**	**1.0**	0.80	**0.40**	**ug/L**	**06/25/2022 1611**
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	06/25/2022 1611
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	06/25/2022 1611
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	06/25/2022 1611
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	06/25/2022 1611
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	06/25/2022 1611
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	06/25/2022 1611
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	06/25/2022 1611
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	06/25/2022 1611
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46528-001
Batch: 46528
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	06/25/2022 1611

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		92	81-118
Bromofluorobenzene		104	85-114
Toluene-d8		101	89-112
Dibromofluoromethane		100	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46528-002
Batch: 46528
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	170	N	1	170	39-160	06/25/2022 1504
Benzene	50	47		1	94	79-120	06/25/2022 1504
Bromodichloromethane	50	47		1	93	79-125	06/25/2022 1504
Bromoform	50	46		1	92	66-130	06/25/2022 1504
Bromomethane (Methyl bromide)	50	47		1	94	53-141	06/25/2022 1504
2-Butanone (MEK)	100	120		1	124	56-143	06/25/2022 1504
Carbon disulfide	50	46		1	92	64-133	06/25/2022 1504
Carbon tetrachloride	50	47		1	94	72-136	06/25/2022 1504
Chlorobenzene	50	46		1	92	82-118	06/25/2022 1504
Chloroethane	50	45		1	89	60-138	06/25/2022 1504
Chloroform	50	48		1	95	79-124	06/25/2022 1504
Chloromethane (Methyl chloride)	50	44		1	87	50-139	06/25/2022 1504
Cyclohexane	50	45		1	89	71-130	06/25/2022 1504
1,2-Dibromo-3-chloropropane (DBCP)	50	45		1	90	62-128	06/25/2022 1504
Dibromochloromethane	50	48		1	95	74-126	06/25/2022 1504
1,2-Dibromoethane (EDB)	50	49		1	99	77-121	06/25/2022 1504
1,2-Dichlorobenzene	50	47		1	94	80-119	06/25/2022 1504
1,3-Dichlorobenzene	50	47		1	93	80-119	06/25/2022 1504
1,4-Dichlorobenzene	50	46		1	93	79-118	06/25/2022 1504
Dichlorodifluoromethane	50	47		1	94	32-152	06/25/2022 1504
1,1-Dichloroethane	50	47		1	93	77-125	06/25/2022 1504
1,2-Dichloroethane	50	47		1	95	73-128	06/25/2022 1504
1,1-Dichloroethene	50	47		1	93	71-131	06/25/2022 1504
cis-1,2-Dichloroethene	50	49		1	97	78-123	06/25/2022 1504
trans-1,2-Dichloroethene	50	47		1	94	75-124	06/25/2022 1504
1,2-Dichloropropane	50	47		1	94	78-122	06/25/2022 1504
cis-1,3-Dichloropropene	50	48		1	96	75-124	06/25/2022 1504
trans-1,3-Dichloropropene	50	48		1	96	73-127	06/25/2022 1504
Ethylbenzene	50	46		1	92	79-121	06/25/2022 1504
2-Hexanone	100	100		1	102	57-139	06/25/2022 1504
Isopropylbenzene	50	47		1	94	72-131	06/25/2022 1504
Methyl acetate	50	50		1	101	56-136	06/25/2022 1504
Methyl tertiary butyl ether (MTBE)	50	51		1	102	71-124	06/25/2022 1504
4-Methyl-2-pentanone	100	100		1	104	67-130	06/25/2022 1504
Methylcyclohexane	50	45		1	91	72-132	06/25/2022 1504
Methylene chloride	50	43		1	87	74-124	06/25/2022 1504
Styrene	50	48		1	96	78-123	06/25/2022 1504
1,1,2,2-Tetrachloroethane	50	47		1	94	71-121	06/25/2022 1504
Tetrachloroethene	50	48		1	96	74-129	06/25/2022 1504
Toluene	50	46		1	93	80-121	06/25/2022 1504
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	45		1	90	70-136	06/25/2022 1504
1,2,4-Trichlorobenzene	50	47		1	94	69-130	06/25/2022 1504
1,1,1-Trichloroethane	50	47		1	93	74-131	06/25/2022 1504
1,1,2-Trichloroethane	50	47		1	94	80-119	06/25/2022 1504

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46528-002
Batch: 46528
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	48		1	97	79-123	06/25/2022 1504
Trichlorofluoromethane	50	48		1	95	65-141	06/25/2022 1504
Vinyl chloride	50	47		1	94	58-137	06/25/2022 1504
Xylenes (total)	100	93		1	93	79-121	06/25/2022 1504

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		90	81-118
Bromofluorobenzene		93	85-114
Toluene-d8		90	89-112
Dibromofluoromethane		94	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ45818-001
Batch: 45818
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 06/22/2022 1452

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acenaphthene	0.10	U	1	0.20	0.10	0.040	ug/L	07/05/2022 1507
Acenaphthylene	0.10	U	1	0.20	0.10	0.040	ug/L	07/05/2022 1507
Acetophenone	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
Anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	07/05/2022 1507
Atrazine	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
Benzaldehyde	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
Benzo(a)anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	07/05/2022 1507
Benzo(a)pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	07/05/2022 1507
Benzo(b)fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	07/05/2022 1507
Benzo(g,h,i)perylene	0.10	U	1	0.20	0.10	0.040	ug/L	07/05/2022 1507
Benzo(k)fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	07/05/2022 1507
1,1'-Biphenyl	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
4-Bromophenyl phenyl ether	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
Butyl benzyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
Caprolactam	2.0	U	1	3.0	2.0	1.0	ug/L	07/05/2022 1507
Carbazole	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
bis (2-Chloro-1-methylethyl) ether	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
4-Chloro-3-methyl phenol	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
4-Chloroaniline	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
bis(2-Chloroethoxy)methane	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
bis(2-Chloroethyl)ether	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
2-Chloronaphthalene	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
2-Chlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
4-Chlorophenyl phenyl ether	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
Chrysene	0.10	U	1	0.20	0.10	0.040	ug/L	07/05/2022 1507
Dibenzo(a,h)anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	07/05/2022 1507
Dibenzofuran	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
3,3'-Dichlorobenzidine	3.5	U	1	4.0	3.5	1.8	ug/L	07/05/2022 1507
2,4-Dichlorophenol	0.50	U	1	1.6	0.50	0.25	ug/L	07/05/2022 1507
Diethylphthalate	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
Dimethyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
2,4-Dimethylphenol	1.5	U	1	2.0	1.5	0.62	ug/L	07/05/2022 1507
Di-n-butyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
4,6-Dinitro-2-methylphenol	2.0	U	1	4.0	2.0	1.0	ug/L	07/05/2022 1507
2,4-Dinitrophenol	2.0	U	1	4.0	2.0	1.0	ug/L	07/05/2022 1507
2,4-Dinitrotoluene	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
2,6-Dinitrotoluene	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
Di-n-octylphthalate	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
bis(2-Ethylhexyl)phthalate	3.0	U	1	4.0	3.0	1.5	ug/L	07/05/2022 1507
Fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	07/05/2022 1507
Fluorene	0.10	U	1	0.20	0.10	0.040	ug/L	07/05/2022 1507
Hexachlorobenzene	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
Hexachlorobutadiene	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
Hexachlorocyclopentadiene	4.0	U	1	4.0	4.0	2.0	ug/L	07/05/2022 1507

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ45818-001
Batch: 45818
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 06/22/2022 1452

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Hexachloroethane	0.40	U	1	0.80	0.40	0.17	ug/L	07/05/2022 1507
Indeno(1,2,3-c,d)pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	07/05/2022 1507
Isophorone	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
2-Methylnaphthalene	0.10	U	1	0.20	0.10	0.040	ug/L	07/05/2022 1507
2-Methylphenol	1.3	U	1	1.6	1.3	0.67	ug/L	07/05/2022 1507
3+4-Methylphenol	3.0	U	1	4.0	3.0	1.5	ug/L	07/05/2022 1507
Naphthalene	**0.16**	**J**	**1**	**0.20**	0.10	**0.040**	**ug/L**	**07/05/2022 1507**
2-Nitroaniline	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
3-Nitroaniline	2.0	U	1	3.0	2.0	1.0	ug/L	07/05/2022 1507
4-Nitroaniline	3.0	U	1	4.0	3.0	1.5	ug/L	07/05/2022 1507
Nitrobenzene	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
2-Nitrophenol	2.0	U	1	3.2	2.0	1.0	ug/L	07/05/2022 1507
4-Nitrophenol	4.0	U	1	5.0	4.0	2.0	ug/L	07/05/2022 1507
N-Nitrosodi-n-propylamine	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
N-Nitrosodiphenylamine (Diphenylamine)	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
Pentachlorophenol	4.0	U	1	5.0	4.0	2.0	ug/L	07/05/2022 1507
Phenanthrene	0.10	U	1	0.20	0.10	0.040	ug/L	07/05/2022 1507
Phenol	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
Pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	07/05/2022 1507
2,4,5-Trichlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507
2,4,6-Trichlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	07/05/2022 1507

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		78	44-119
2-Fluorophenol		56	19-119
Nitrobenzene-d5		60	44-120
Phenol-d5		57	10-115
Terphenyl-d14		109	50-134
2,4,6-Tribromophenol		58	43-140

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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ45818-002
Batch: 45818
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 06/22/2022 1452

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acenaphthene	8.0	7.4		1	93	47-122	07/05/2022 1418
Acenaphthylene	8.0	7.4		1	93	41-130	07/05/2022 1418
Acetophenone	8.0	8.7		1	109	46-118	07/05/2022 1418
Anthracene	8.0	7.4		1	93	57-123	07/05/2022 1418
Atrazine	8.0	7.9		1	98	44-142	07/05/2022 1418
Benzaldehyde	8.0	4.3		1	54	20-115	07/05/2022 1418
Benzo(a)anthracene	8.0	7.6		1	95	58-125	07/05/2022 1418
Benzo(a)pyrene	8.0	7.4		1	93	54-128	07/05/2022 1418
Benzo(b)fluoranthene	8.0	7.9		1	99	53-131	07/05/2022 1418
Benzo(g,h,i)perylene	8.0	7.7		1	96	50-134	07/05/2022 1418
Benzo(k)fluoranthene	8.0	7.7		1	96	57-129	07/05/2022 1418
1,1'-Biphenyl	8.0	7.0		1	87	49-115	07/05/2022 1418
4-Bromophenyl phenyl ether	8.0	7.3		1	91	55-124	07/05/2022 1418
Butyl benzyl phthalate	8.0	8.4		1	105	53-134	07/05/2022 1418
Caprolactam	8.0	8.3		1	103	44-152	07/05/2022 1418
Carbazole	8.0	7.0		1	88	60-122	07/05/2022 1418
bis (2-Chloro-1-methylethyl) ether	8.0	6.8		1	85	37-130	07/05/2022 1418
4-Chloro-3-methyl phenol	8.0	7.2		1	90	52-119	07/05/2022 1418
4-Chloroaniline	8.0	4.5		1	56	33-117	07/05/2022 1418
bis(2-Chloroethoxy)methane	8.0	6.9		1	86	48-120	07/05/2022 1418
bis(2-Chloroethyl)ether	8.0	6.5		1	81	43-118	07/05/2022 1418
2-Chloronaphthalene	8.0	7.0		1	88	40-116	07/05/2022 1418
2-Chlorophenol	8.0	7.3		1	91	38-117	07/05/2022 1418
4-Chlorophenyl phenyl ether	8.0	6.9		1	86	53-121	07/05/2022 1418
Chrysene	8.0	7.4		1	93	59-123	07/05/2022 1418
Dibenzo(a,h)anthracene	8.0	7.4		1	93	51-134	07/05/2022 1418
Dibenzofuran	8.0	6.6		1	82	53-118	07/05/2022 1418
3,3'-Dichlorobenzidine	8.0	3.0		1	37	27-129	07/05/2022 1418
2,4-Dichlorophenol	8.0	6.3		1	78	47-121	07/05/2022 1418
Diethylphthalate	8.0	7.5		1	93	56-125	07/05/2022 1418
Dimethyl phthalate	8.0	7.6		1	96	45-127	07/05/2022 1418
2,4-Dimethylphenol	8.0	6.1		1	76	31-124	07/05/2022 1418
Di-n-butyl phthalate	8.0	7.9		1	98	59-127	07/05/2022 1418
4,6-Dinitro-2-methylphenol	8.0	7.2		1	90	44-137	07/05/2022 1418
2,4-Dinitrophenol	16	11		1	67	23-143	07/05/2022 1418
2,4-Dinitrotoluene	8.0	6.9		1	86	57-128	07/05/2022 1418
2,6-Dinitrotoluene	8.0	7.1		1	89	57-124	07/05/2022 1418
Di-n-octylphthalate	8.0	7.8		1	97	51-140	07/05/2022 1418
bis(2-Ethylhexyl)phthalate	8.0	12	N	1	150	55-135	07/05/2022 1418
Fluoranthene	8.0	7.6		1	95	57-128	07/05/2022 1418
Fluorene	8.0	7.1		1	89	52-124	07/05/2022 1418
Hexachlorobenzene	8.0	6.7		1	84	53-125	07/05/2022 1418
Hexachlorobutadiene	8.0	5.4		1	68	22-124	07/05/2022 1418
Hexachlorocyclopentadiene	40	24		1	59	16-96	07/05/2022 1418

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ45818-002
Batch: 45818
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 06/22/2022 1452

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Hexachloroethane	8.0	6.7		1	84	21-115	07/05/2022 1418
Indeno(1,2,3-c,d)pyrene	8.0	7.6		1	95	52-134	07/05/2022 1418
Isophorone	8.0	5.6		1	70	42-124	07/05/2022 1418
2-Methylnaphthalene	8.0	6.8		1	85	40-121	07/05/2022 1418
2-Methylphenol	8.0	9.3		1	116	30-117	07/05/2022 1418
3+4-Methylphenol	8.0	8.5		1	107	29-110	07/05/2022 1418
Naphthalene	8.0	7.0		1	87	40-121	07/05/2022 1418
2-Nitroaniline	8.0	8.0		1	100	55-127	07/05/2022 1418
3-Nitroaniline	8.0	4.5		1	57	41-128	07/05/2022 1418
4-Nitroaniline	8.0	5.9		1	74	30-135	07/05/2022 1418
Nitrobenzene	8.0	4.6		1	57	45-121	07/05/2022 1418
2-Nitrophenol	8.0	6.8		1	84	47-123	07/05/2022 1418
4-Nitrophenol	16	12		1	74	53-130	07/05/2022 1418
N-Nitrosodi-n-propylamine	8.0	6.6		1	83	49-119	07/05/2022 1418
N-Nitrosodiphenylamine (Diphenylamine)	8.0	7.7		1	97	51-123	07/05/2022 1418
Pentachlorophenol	16	13		1	81	35-138	07/05/2022 1418
Phenanthrene	8.0	7.6		1	96	59-120	07/05/2022 1418
Phenol	8.0	7.4		1	93	49-117	07/05/2022 1418
Pyrene	8.0	8.2		1	102	57-126	07/05/2022 1418
2,4,5-Trichlorophenol	8.0	7.2		1	90	53-123	07/05/2022 1418
2,4,6-Trichlorophenol	8.0	7.4		1	92	50-125	07/05/2022 1418

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		85	44-119
2-Fluorophenol		85	19-119
Nitrobenzene-d5		64	44-120
Phenol-d5		85	10-115
Terphenyl-d14		101	50-134
2,4,6-Tribromophenol		80	43-140

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ45902-001
Batch: 45902
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 06/23/2022 1240

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acenaphthene	2.0	U	1	2.7	2.0	0.83	ug/kg	07/05/2022 1442
Acenaphthylene	2.0	U	1	2.7	2.0	0.95	ug/kg	07/05/2022 1442
Acetophenone	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
Anthracene	2.0	U	1	2.7	2.0	0.51	ug/kg	07/05/2022 1442
Atrazine	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
Benzaldehyde	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
Benzo(a)anthracene	2.0	U	1	2.7	2.0	0.59	ug/kg	07/05/2022 1442
Benzo(a)pyrene	2.0	U	1	2.7	2.0	0.66	ug/kg	07/05/2022 1442
Benzo(b)fluoranthene	2.0	U	1	2.7	2.0	0.50	ug/kg	07/05/2022 1442
Benzo(g,h,i)perylene	2.0	U	1	2.7	2.0	0.65	ug/kg	07/05/2022 1442
Benzo(k)fluoranthene	1.5	U	1	2.7	1.5	0.48	ug/kg	07/05/2022 1442
1,1'-Biphenyl	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
4-Bromophenyl phenyl ether	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
Butyl benzyl phthalate	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
Caprolactam	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
Carbazole	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
bis (2-Chloro-1-methylethyl) ether	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
4-Chloro-3-methyl phenol	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
4-Chloroaniline	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
bis(2-Chloroethoxy)methane	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
bis(2-Chloroethyl)ether	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
2-Chloronaphthalene	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
2-Chlorophenol	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
4-Chlorophenyl phenyl ether	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
Chrysene	1.5	U	1	2.7	1.5	0.45	ug/kg	07/05/2022 1442
Dibenzo(a,h)anthracene	2.0	U	1	2.7	2.0	0.51	ug/kg	07/05/2022 1442
Dibenzofuran	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
3,3'-Dichlorobenzidine	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
2,4-Dichlorophenol	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
Diethylphthalate	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
Dimethyl phthalate	15	U	1	20	15	7.4	ug/kg	07/05/2022 1442
2,4-Dimethylphenol	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
Di-n-butyl phthalate	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
4,6-Dinitro-2-methylphenol	50	U	1	67	50	25	ug/kg	07/05/2022 1442
2,4-Dinitrophenol	50	U	1	67	50	25	ug/kg	07/05/2022 1442
2,4-Dinitrotoluene	20	U	1	27	20	10	ug/kg	07/05/2022 1442
2,6-Dinitrotoluene	20	U	1	27	20	10	ug/kg	07/05/2022 1442
Di-n-octylphthalate	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
bis(2-Ethylhexyl)phthalate	50	U	1	67	50	25	ug/kg	07/05/2022 1442
Fluoranthene	1.5	U	1	2.7	1.5	0.42	ug/kg	07/05/2022 1442
Fluorene	2.0	U	1	2.7	2.0	0.57	ug/kg	07/05/2022 1442
Hexachlorobenzene	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
Hexachlorobutadiene	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
Hexachlorocyclopentadiene	50	U	1	67	50	25	ug/kg	07/05/2022 1442

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ45902-001
Batch: 45902
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 06/23/2022 1240

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Hexachloroethane	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
Indeno(1,2,3-c,d)pyrene	2.0	U	1	2.7	2.0	1.0	ug/kg	07/05/2022 1442
Isophorone	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
2-Methylnaphthalene	2.0	U	1	2.7	2.0	0.99	ug/kg	07/05/2022 1442
2-Methylphenol	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
3+4-Methylphenol	20	U	1	27	20	10	ug/kg	07/05/2022 1442
Naphthalene	2.0	U	1	2.7	2.0	0.97	ug/kg	07/05/2022 1442
2-Nitroaniline	20	U	1	27	20	10	ug/kg	07/05/2022 1442
3-Nitroaniline	20	U	1	27	20	10	ug/kg	07/05/2022 1442
4-Nitroaniline	20	U	1	27	20	10	ug/kg	07/05/2022 1442
Nitrobenzene	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
2-Nitrophenol	20	U	1	27	20	10	ug/kg	07/05/2022 1442
4-Nitrophenol	50	U	1	67	50	25	ug/kg	07/05/2022 1442
N-Nitrosodi-n-propylamine	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
N-Nitrosodiphenylamine (Diphenylamine)	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
Pentachlorophenol	50	U	1	67	50	25	ug/kg	07/05/2022 1442
Phenanthrene	2.0	U	1	2.7	2.0	0.72	ug/kg	07/05/2022 1442
Phenol	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
Pyrene	2.0	U	1	2.7	2.0	0.50	ug/kg	07/05/2022 1442
2,4,5-Trichlorophenol	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442
2,4,6-Trichlorophenol	10	U	1	13	10	5.0	ug/kg	07/05/2022 1442

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		74	44-115
2-Fluorophenol		81	35-115
Nitrobenzene-d5		55	37-122
Phenol-d5		70	33-122
Terphenyl-d14		114	54-127
2,4,6-Tribromophenol		61	39-132

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ45902-002
Batch: 45902
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 06/23/2022 1240

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acenaphthene	130	100		1	78	40-123	07/05/2022 1328
Acenaphthylene	130	110		1	80	32-132	07/05/2022 1328
Acetophenone	130	99		1	75	33-115	07/05/2022 1328
Anthracene	130	110		1	82	47-123	07/05/2022 1328
Atrazine	130	110		1	82	47-127	07/05/2022 1328
Benzaldehyde	130	98		1	74	10-110	07/05/2022 1328
Benzo(a)anthracene	130	110		1	81	49-126	07/05/2022 1328
Benzo(a)pyrene	130	110		1	83	45-129	07/05/2022 1328
Benzo(b)fluoranthene	130	110		1	82	45-132	07/05/2022 1328
Benzo(g,h,i)perylene	130	110		1	83	43-134	07/05/2022 1328
Benzo(k)fluoranthene	130	110		1	84	47-132	07/05/2022 1328
1,1'-Biphenyl	130	98		1	74	40-117	07/05/2022 1328
4-Bromophenyl phenyl ether	130	110		1	79	46-124	07/05/2022 1328
Butyl benzyl phthalate	130	120		1	92	48-132	07/05/2022 1328
Caprolactam	130	110		1	82	46-117	07/05/2022 1328
Carbazole	130	110		1	83	50-123	07/05/2022 1328
bis (2-Chloro-1-methylethyl) ether	130	95		1	71	33-131	07/05/2022 1328
4-Chloro-3-methyl phenol	130	110		1	82	45-122	07/05/2022 1328
4-Chloroaniline	130	39		1	30	17-106	07/05/2022 1328
bis(2-Chloroethoxy)methane	130	99		1	74	36-121	07/05/2022 1328
bis(2-Chloroethyl)ether	130	87		1	66	31-120	07/05/2022 1328
2-Chloronaphthalene	130	100		1	76	41-114	07/05/2022 1328
2-Chlorophenol	130	100		1	79	34-121	07/05/2022 1328
4-Chlorophenyl phenyl ether	130	100		1	77	45-121	07/05/2022 1328
Chrysene	130	110		1	82	50-124	07/05/2022 1328
Dibenzo(a,h)anthracene	130	110		1	84	45-134	07/05/2022 1328
Dibenzofuran	130	94		1	71	44-120	07/05/2022 1328
3,3'-Dichlorobenzidine	130	110		1	82	22-121	07/05/2022 1328
2,4-Dichlorophenol	130	93		1	70	40-122	07/05/2022 1328
Diethylphthalate	130	110		1	83	50-124	07/05/2022 1328
Dimethyl phthalate	130	110		1	86	48-124	07/05/2022 1328
2,4-Dimethylphenol	130	120		1	89	30-127	07/05/2022 1328
Di-n-butyl phthalate	130	110		1	84	51-128	07/05/2022 1328
4,6-Dinitro-2-methylphenol	130	85		1	64	29-132	07/05/2022 1328
2,4-Dinitrophenol	270	110		1	40	10-113	07/05/2022 1328
2,4-Dinitrotoluene	130	100		1	75	48-126	07/05/2022 1328
2,6-Dinitrotoluene	130	110		1	80	46-124	07/05/2022 1328
Di-n-octylphthalate	130	120		1	87	45-140	07/05/2022 1328
bis(2-Ethylhexyl)phthalate	130	130		1	96	51-133	07/05/2022 1328
Fluoranthene	130	110		1	81	50-127	07/05/2022 1328
Fluorene	130	100		1	79	43-125	07/05/2022 1328
Hexachlorobenzene	130	100		1	76	45-122	07/05/2022 1328
Hexachlorobutadiene	130	91		1	68	32-123	07/05/2022 1328
Hexachlorocyclopentadiene	670	420		1	63	18-121	07/05/2022 1328

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ45902-002
Batch: 45902
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 06/23/2022 1240

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Hexachloroethane	130	110		1	79	28-117	07/05/2022 1328
Indeno(1,2,3-c,d)pyrene	130	110		1	84	45-133	07/05/2022 1328
Isophorone	130	83		1	63	30-122	07/05/2022 1328
2-Methylnaphthalene	130	100		1	75	38-122	07/05/2022 1328
2-Methylphenol	130	120		1	88	32-122	07/05/2022 1328
3+4-Methylphenol	130	110		1	81	34-119	07/05/2022 1328
Naphthalene	130	98		1	74	35-123	07/05/2022 1328
2-Nitroaniline	130	120		1	87	44-127	07/05/2022 1328
3-Nitroaniline	130	89		1	67	33-119	07/05/2022 1328
4-Nitroaniline	130	120		1	89	50-150	07/05/2022 1328
Nitrobenzene	130	69		1	52	34-122	07/05/2022 1328
2-Nitrophenol	130	93		1	70	36-123	07/05/2022 1328
4-Nitrophenol	270	170		1	64	30-132	07/05/2022 1328
N-Nitrosodi-n-propylamine	130	97		1	73	36-120	07/05/2022 1328
N-Nitrosodiphenylamine (Diphenylamine)	130	110		1	86	38-127	07/05/2022 1328
Pentachlorophenol	270	170		1	65	25-133	07/05/2022 1328
Phenanthrene	130	110		1	83	50-121	07/05/2022 1328
Phenol	130	110		1	82	34-121	07/05/2022 1328
Pyrene	130	120		1	88	47-127	07/05/2022 1328
2,4,5-Trichlorophenol	130	100		1	77	41-124	07/05/2022 1328
2,4,6-Trichlorophenol	130	100		1	79	39-126	07/05/2022 1328

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		75	44-115
2-Fluorophenol		81	35-115
Nitrobenzene-d5		56	37-122
Phenol-d5		70	33-122
Terphenyl-d14		85	54-127
2,4,6-Tribromophenol		68	39-132

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - MB

Sample ID: XQ45893-001
Batch: 45893
Analytical Method: 6020B

Matrix: Solid
Prep Method: 3050B
Prep Date: 06/23/2022 1018

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Arsenic	0.40	U	1	0.50	0.40	0.20	mg/kg	07/04/2022 1537
Barium	0.63	U	1	1.3	0.63	0.31	mg/kg	07/04/2022 1537
Cadmium	0.063	U	1	0.13	0.063	0.025	mg/kg	07/04/2022 1537
Chromium	1.1	U	1	1.3	1.1	0.55	mg/kg	07/04/2022 1537
Lead	0.14	U	1	0.25	0.14	0.068	mg/kg	07/04/2022 1537
Selenium	0.95	U	1	1.3	0.95	0.47	mg/kg	07/04/2022 1537
Silver	0.13	U	1	0.25	0.13	0.060	mg/kg	07/04/2022 1537

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - LCS

Sample ID: XQ45893-002
Batch: 45893
Analytical Method: 6020B

Matrix: Solid
Prep Method: 3050B
Prep Date: 06/23/2022 1018

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Arsenic	50	50		1	99	82-118	07/04/2022 1544
Barium	50	53		1	106	86-116	07/04/2022 1544
Cadmium	50	51		1	102	84-116	07/04/2022 1544
Chromium	50	46		1	91	83-119	07/04/2022 1544
Lead	50	57		1	113	84-118	07/04/2022 1544
Selenium	50	43		1	87	80-119	07/04/2022 1544
Silver	50	58		1	116	83-118	07/04/2022 1544

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - MS

Sample ID: XF22018-011MS
Batch: 45893
Analytical Method: 6020B

Matrix: Solid
Prep Method: 3050B
Prep Date: 06/23/2022 1018

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Arsenic	1.6	47	43		1	89	82-118	07/04/2022 1738
Barium	110	240	170	N	10	26	86-116	07/05/2022 0014
Cadmium	ND	47	40		10	85	84-116	07/05/2022 0014
Chromium	71	47	120		1	99	83-119	07/04/2022 1738
Lead	11	240	48	N	10	15	84-118	07/05/2022 0014
Selenium	3.0	47	42		1	83	80-119	07/04/2022 1738
Silver	ND	47	52		1	110	83-118	07/04/2022 1738

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - MSD

Sample ID: XF22018-011MD
Batch: 45893
Analytical Method: 6020B

Matrix: Solid
Prep Method: 3050B
Prep Date: 06/23/2022 1018

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Arsenic	1.6	67	76	+	1	112	55	82-118	20	07/04/2022 1746
Barium	110	330	180	N	10	20	3.1	86-116	20	07/05/2022 0021
Cadmium	ND	67	63	+	10	94	45	84-116	20	07/05/2022 0021
Chromium	71	67	170	N,+	1	155	39	83-119	20	07/04/2022 1746
Lead	11	330	72	N,+	10	18	41	84-118	20	07/05/2022 0021
Selenium	3.0	67	74	+	1	106	55	80-119	20	07/04/2022 1746
Silver	ND	67	87	N,+	1	130	50	83-118	20	07/04/2022 1746

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MB

Sample ID: XQ46273-001
Batch: 46273
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 06/27/2022 1524

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Arsenic	2.5	U	1	5.0	2.5	1.3	ug/L	07/02/2022 1959
Barium	2.5	U	1	5.0	2.5	1.3	ug/L	07/02/2022 1959
Cadmium	0.25	U	1	0.50	0.25	0.13	ug/L	07/02/2022 1959
Chromium	2.5	U	1	5.0	2.5	1.3	ug/L	07/02/2022 1959
Lead	0.50	U	1	1.0	0.50	0.25	ug/L	07/02/2022 1959
Selenium	2.5	U	1	5.0	2.5	1.3	ug/L	07/02/2022 1959
Silver	0.50	U	1	1.0	0.50	0.25	ug/L	07/02/2022 1959

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - LCS

Sample ID: XQ46273-002
Batch: 46273
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 06/27/2022 1524

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Arsenic	100	100		1	105	84-116	07/02/2022 2003
Barium	100	100		1	103	86-114	07/02/2022 2003
Cadmium	100	100		1	104	87-115	07/02/2022 2003
Chromium	100	100		1	104	85-116	07/02/2022 2003
Lead	100	110		1	105	88-115	07/02/2022 2003
Selenium	100	110		1	107	80-120	07/02/2022 2003
Silver	100	100		1	104	85-116	07/02/2022 2003

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MS

Sample ID: XF22018-012MS
Batch: 46273
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 06/27/2022 1524

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Arsenic	ND	100	110		1	106	84-116	07/02/2022 2018
Barium	1.3	100	100		1	100	86-114	07/02/2022 2018
Cadmium	ND	100	100		1	104	87-115	07/02/2022 2018
Chromium	ND	100	110		1	107	85-116	07/02/2022 2018
Lead	2.3	100	100		1	102	88-115	07/02/2022 2018
Selenium	ND	100	100		1	103	80-120	07/02/2022 2018
Silver	ND	100	100		1	104	85-116	07/02/2022 2018

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MSD

Sample ID: XF22018-012MD
Batch: 46273
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 06/27/2022 1524

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Arsenic	ND	100	110		1	107	1.7	84-116	20	07/02/2022 2022
Barium	1.3	100	110		1	104	4.0	86-114	20	07/02/2022 2022
Cadmium	ND	100	110		1	106	2.1	87-115	20	07/02/2022 2022
Chromium	ND	100	110		1	108	0.41	85-116	20	07/02/2022 2022
Lead	2.3	100	100		1	102	0.40	88-115	20	07/02/2022 2022
Selenium	ND	100	110		1	106	3.5	80-120	20	07/02/2022 2022
Silver	ND	100	110		1	107	2.4	85-116	20	07/02/2022 2022

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MB

Sample ID: XQ46040-001
Batch: 46040
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 06/24/2022 0236

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Mercury	0.00018	U	1	0.00020	0.00018	0.000091	mg/L	06/24/2022 0630

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - LCS

Sample ID: XQ46040-002
Batch: 46040
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 06/24/2022 0236

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Mercury	0.0020	0.0019		1	97	82-119	06/24/2022 0632

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Chain of Custody
and
Miscellaneous Documents

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Project No.: 7021P145
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Sampler's Signature: X
Printed Name: Ethan Dinwiddie
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Quote No.: 25322
Page 1 of 2
XF22018
CSD

Analysis (Attach list if more space is needed): SVOCs; RCRA 8 Metals

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	Grab/Comp G-Grab C-Comp	Matrix: Aqueous	Solid	Non-Aqueous	No of Containers by Preservative Type: Unpres.	HNO3	H2SO4	HCl	NaOH	Na2S2O3	NaHSO4	Other	SVOCs	RCRA 8 Metals	Remarks / Cooler I.D.
RI-SB-01 (2-8)	6/20	1800	C		X		2								X	X	
RI-SB-02 (2-6)		1710	C		X		2								X	X	
RI-SB-03 (2-6)		1900	C		X		2								X	X	
~~RI-SB-04 ( ) 500~~		~~1940~~	C		X		2								X	X	
RI-SB-05 (2-8)		2000	C		X		2								X	X	
RI-SB-06 (4-8)		1945	C		X		2								X	X	
RI-SB-07 (2-6)		1925	C		X		2								X	X	
RI-SB-08 (2-6)		1900	C		X		2								X	X	
RI-SB-09 (2-8)		1835	C		X		2								X	X	
RI-SB-10 (6-10)	6/21	1155	C		X		2								X	X	

Turn Around Time Required (Prior lab approval required for expedited TAT): ☒ Standard ☐ Rush (Specify)

Sample Disposal: ☐ Return to Client ☒ Disposal by Lab

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☒ Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by	6/21/22	1700	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by Fedex	6/22/22	0935	4. Laboratory received by: Rec'd	6/22/22	0935

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on ice (Circle): (Yes) No Ice Pack
Receipt Temp. 4.0 °C
Temp Blank: ☒ ☐ N

Document Number: ME003N2-01

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Final/Client Copy

Pace Analytical®

PACE ANALYTICAL SERVICES, LLC
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.pacelabs.com

Number 133751

Client: Terracon Consultants Inc.
Address: 2401 Brentwood Rd.
City: Raleigh State: NC Zip Code: 27604
Project Name: T.A.M.P.
Project No.: 7021 8145
P.O. No.:

Report to Contact: Ethan Dinwiddie
Sampler's Signature: X [signature]
Printed Name: Ethan Dinwiddie

Telephone No. / E-mail: (828)-550-5502 / ethan.dinwiddie@terracon.com
Quote No.: 25322
Analysis (Attach list if more space is needed)
Page 2 of 2

XF22018
CSO

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	Grab/Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	No. of Containers by Preservative Type: Unpres.	HSO4	HNO3	HCl	NaOH	NaOH/Zn	Fluid Filtered	VOCs 8260	SVOCs 8270	RCRA 3 Metals							Remarks / Cooler I.D.
RI-SB-11 (10-12)	6/21/22	1240	C		X		2								X	X							
MS/MSD-SB-01	↓	1200	C		X		4								X	X							
EB-01	6/21/22	1435	G	X			2		1	3				X	X	X							

Turn Around Time Required (Prior lab approval required for expedited TAT.) ☒ Standard ☐ Rush (Specify)

Sample Disposal: ☐ Return to Client ☒ Disposal by Lab

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☒ Unknown

QC Requirements (Specify)

	Date	Time
1. Relinquished by [signature]	6/21/22	1700
2. Relinquished by		
3. Relinquished by		
4. Relinquished by Fedex	6/22/22	0935

	Date	Time
1. Received by		
2. Received by		
3. Received by		
4. Laboratory received by K. Reed	6/22/22	0935

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Circle) Yes No Ice Pack
Receipt Temp. 4.0 °C
Temp Blank ☒ Y ☐ N

Document Number: ME003N2-01

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Pace Analytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: TERRACON Cooler Inspected by/date: KAR / 06/22/2022 Lot #: XF22018

Means of receipt: ☐ Pace ☐ Client ☐ UPS ☑ FedEx ☐ Other: _____

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: 21-852 Chlorine Strip ID: NA Tested by: KAR

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

4.0 / 4.0 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 6 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☑ Yes	☐ No	☐ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? _____
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☑ Yes	☐ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☑ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☑ Yes	☐ No	☐ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote # _____

HMM 06/22/22

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: KAR Date: 06/22/2022

Comments: Excess: 013 not listed on COC

Report of Analysis

Terracon Consultants, Inc.
2401 Brentwood Road
Suite 107 I
Raleigh, NC 27604
Attention: Ethan Dinwiddie

Project Name: TAMP

Project Number: 7021P145

Lot Number:**XF24009**

Date Completed:07/06/2022

07/21/2022 10:19 PM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.
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Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
Terracon Consultants, Inc.
Lot Number: XF24009

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Additionally, the DoD QSM version 5.3 has been followed for these samples. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs, the DoD QSM, or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

Where applicable, all soil sample results (including LOQ and DL if requested) are corrected for dry weight unless flagged with a "W" qualifier.

VOA 8260D

Insufficient sample volume was provided to perform matrix spike/matrix spike duplicate (MS/MSD) for analytical batch 46330. An LCS/LCSD was run in lieu of an MS/MSD.

The continuing calibration verification (CCV) associated with batch 46673 and samples XF24009-001, XF24009-002, XF24009-003, XF24009-004, XF24009-005, XF24009-006, XF24009-007, XF24009-010, XF24009-011, and XF24009-012 for analyte(s): Dichlorodifluoromethane (51%), Chloromethane (42%), Bromomethane (24%), and Chloroethane (23%) recovered above the upper control limit. The sample(s) associated with this CCV were non-detect for the affected analytes; therefore, the data has been reported.

The continuing calibration verification (CCV) and laboratory control sample (LCS) associated with batch 46673 and samples XF24009-001, XF24009-002, XF24009-003, XF24009-004, XF24009-005, XF24009-006, XF24009-007, XF24009-011, XF24009-012, XF24011-009, XF25020-013, XF25020-014 for Vinyl Chloride (43% and 143%) recovered above the upper control limit. The samples associated with this CCV and LCS were non-detect for the affected analyte; therefore, the data has been reported.

The laboratory control sample (LCS) for analytical batch 46673 exceeded acceptance criteria for the following analytes: Dichlorodifluoromethane (151%) and Chloromethane (142%). These analytes were biased high and were not detected in the associated samples: XF24009-001, XF24009-002, XF24009-003, XF24009-004, XF24009-005, XF24009-006, XF24009-007, XF24009-010, XF24009-011, and XF24009-012.

Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for 10% of analytes to recover marginally outside criteria. The following analytes recovered marginally outside LCS criteria: Vinyl Chloride (143%) in batch 46673. Associated samples: XF24009-001, XF24009-002, XF24009-003, XF24009-004, XF24009-005, XF24009-006, XF24009-007, XF24009-010, XF24009-011, and XF24009-012.

The initial calibration verification (ICV) associated with batch 46673 and samples XF24009-001, XF24009-002, XF24009-003, XF24009-004, XF24009-005, XF24009-006, XF24009-007, XF24009-010, XF24009-011, and XF24009-012 exceeded control criteria for Dichlorodifluoromethane (128%). The data has been reported.

The closing continuing calibration verification (CCV) associated with samples XF24009-001, XF24009-002, XF24009-003, XF24009-004, XF24009-005, XF24009-006, XF24009-007, XF24009-010, XF24009-011, and XF24009-012 for Chloromethane (53%) recovered above the upper control limit. The samples associated with this closing CCV were non-detect for the affected analytes; therefore, the data has been reported.

XF24009-001 (RI-SB-13 (2-4)) (Run 1) (Analysis Batch 46673) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF24009-002 (RI-SB-13 (4-6)) (Run 1) (Analysis Batch 46673) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF24009-003 (RI-SB-13 (10-12)) (Run 1) (Analysis Batch 46673) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF24009-004 (RI-SB-14 (0-2)) (Run 1) (Analysis Batch 46673) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF24009-005 (RI-SB-14 (10-12)) (Run 1) (Analysis Batch 46673) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF24009-006 (RI-SB-15 (2-4)) (Run 1) (Analysis Batch 46673) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF24009-007 (RI-SB-15 (12-14)) (Run 1) (Analysis Batch 46673) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF24009-010 (RI-SB-16 (0-2)) (Run 1) (Analysis Batch 46673) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF24009-011 (RI-SB-16 (4-6)) (Run 1) (Analysis Batch 46673) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF24009-012 (DUP-SB-02) (Run 1) (Analysis Batch 46673) TCL VOCs (OLM04.3) (DOD QSM 5.3)

Cis-1,2-Dichloroethene was reported as an estimated value for sample XF24009-012 (DUP-SB-02), as the result was above the upper calibration level. The sample was re-analyzed from the medium level (methanol) vial, but was not reported due to the result being below the LOQ; therefore only the low level was reported.

The MS/MSD for batch 46673 and parent sample XF24009-006 (RI-SB-15 (2-4)), recovered outside the control limits for multiple analytes.

The MS for batch 47052 and parent sample XF24009-006 (RI-SB-15 (2-4)), recovered outside the control limits for methyl acetate. The MSD recovered outside the control limits for 1,1-dichloroethene, 1,1,1-Trichloroethane and Trichloroethene.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

PACE ANALYTICAL SERVICES, LLC

Sample Summary

Terracon Consultants, Inc.

Lot Number: XF24009

Project Name: TAMP

Project Number: 7021P145

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	RI-SB-13 (2-4)	Solid	06/22/2022 0930	06/24/2022
002	RI-SB-13 (4-6)	Solid	06/22/2022 0935	06/24/2022
003	RI-SB-13 (10-12)	Solid	06/22/2022 0940	06/24/2022
004	RI-SB-14 (0-2)	Solid	06/21/2022 1715	06/24/2022
005	RI-SB-14 (10-12)	Solid	06/21/2022 1730	06/24/2022
006	RI-SB-15 (2-4)	Solid	06/21/2022 1800	06/24/2022
007	RI-SB-15 (12-14)	Solid	06/21/2022 1815	06/24/2022
008	FB-01	Aqueous	06/22/2022 0900	06/24/2022
009	TB-03	Aqueous	06/22/2022	06/24/2022
010	RI-SB-16 (0-2)	Solid	06/22/2022 1055	06/24/2022
011	RI-SB-16 (4-6)	Solid	06/22/2022 1050	06/24/2022
012	DUP-SB-02	Solid	06/22/2022	06/24/2022

(12 samples)

Detection Summary
Terracon Consultants, Inc.
Lot Number: XF24009
Project Name: TAMP
Project Number: 7021P145

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
004	RI-SB-14 (0-2)	Solid	Acetone	8260D	14	J	ug/kg	12
005	RI-SB-14 (10-12)	Solid	Acetone	8260D	11	J	ug/kg	14
005	RI-SB-14 (10-12)	Solid	Tetrachloroethene	8260D	5.7		ug/kg	14
005	RI-SB-14 (10-12)	Solid	Trichloroethene	8260D	4.8	J	ug/kg	15
006	RI-SB-15 (2-4)	Solid	Acetone	8260D	19	J	ug/kg	18
006	RI-SB-15 (2-4)	Solid	Tetrachloroethene	8260D	14		ug/kg	18
006	RI-SB-15 (2-4)	Solid	Trichloroethene	8260D	13	S	ug/kg	19
007	RI-SB-15 (12-14)	Solid	Acetone	8260D	9.4	J	ug/kg	20
008	FB-01	Aqueous	Acetone	8260D	11	J	ug/L	22
008	FB-01	Aqueous	Methylene chloride	8260D	1.5		ug/L	22
010	RI-SB-16 (0-2)	Solid	Acetone	8260D	44		ug/kg	26
010	RI-SB-16 (0-2)	Solid	Carbon disulfide	8260D	3.3	J	ug/kg	26
010	RI-SB-16 (0-2)	Solid	Cyclohexane	8260D	4.5	J	ug/kg	26
010	RI-SB-16 (0-2)	Solid	cis-1,2-Dichloroethene	8260D	3.0	J	ug/kg	26
010	RI-SB-16 (0-2)	Solid	Ethylbenzene	8260D	6.9		ug/kg	26
010	RI-SB-16 (0-2)	Solid	Isopropylbenzene	8260D	4.9	J	ug/kg	26
010	RI-SB-16 (0-2)	Solid	Methylcyclohexane	8260D	81		ug/kg	26
010	RI-SB-16 (0-2)	Solid	Toluene	8260D	3.7	J	ug/kg	26
010	RI-SB-16 (0-2)	Solid	1,1,2-Trichloro-1,2,2-	8260D	29		ug/kg	26
010	RI-SB-16 (0-2)	Solid	Vinyl chloride	8260D	44		ug/kg	27
010	RI-SB-16 (0-2)	Solid	Xylenes (total)	8260D	19		ug/kg	27
011	RI-SB-16 (4-6)	Solid	cis-1,2-Dichloroethene	8260D	160		ug/kg	28
011	RI-SB-16 (4-6)	Solid	Trichloroethene	8260D	3600		ug/kg	29
012	DUP-SB-02	Solid	cis-1,2-Dichloroethene	8260D	320	E	ug/kg	30
012	DUP-SB-02	Solid	Methylcyclohexane	8260D	7.5		ug/kg	30
012	DUP-SB-02	Solid	Tetrachloroethene	8260D	10		ug/kg	30
012	DUP-SB-02	Solid	Trichloroethene	8260D	1300		ug/kg	31
012	DUP-SB-02	Solid	Vinyl chloride	8260D	6.3	JL	ug/kg	31

(28 detections)

Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24009-001**	
Description: **RI-SB-13 (2-4)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 0930**	Project Name: **TAMP**	% Solids: **80.6**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1418	JM1		46673

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	19	U	24	19	9.5	ug/kg	1
Benzene	71-43-2	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
Bromodichloromethane	75-27-4	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
Bromoform	75-25-2	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	7.2	U	12	7.2	3.6	ug/kg	1
2-Butanone (MEK)	78-93-3	8260D	9.6	U	24	9.6	4.7	ug/kg	1
Carbon disulfide	75-15-0	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
Carbon tetrachloride	56-23-5	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
Chlorobenzene	108-90-7	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
Chloroethane	75-00-3	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
Chloroform	67-66-3	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	7.2	UL	12	7.2	3.6	ug/kg	1
Cyclohexane	110-82-7	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
Dibromochloromethane	124-48-1	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260D	7.2	UL	12	7.2	3.6	ug/kg	1
1,1-Dichloroethane	75-34-3	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
1,2-Dichloroethane	107-06-2	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
1,1-Dichloroethene	75-35-4	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
1,2-Dichloropropane	78-87-5	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
Ethylbenzene	100-41-4	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
2-Hexanone	591-78-6	8260D	9.6	U	12	9.6	4.7	ug/kg	1
Isopropylbenzene	98-82-8	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
Methyl acetate	79-20-9	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260D	9.6	U	12	9.6	4.7	ug/kg	1
Methylcyclohexane	108-87-2	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
Methylene chloride	75-09-2	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
Styrene	100-42-5	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
Tetrachloroethene	127-18-4	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
Toluene	108-88-3	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24009-001**	
Description: **RI-SB-13 (2-4)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 0930**	Project Name: **TAMP**	% Solids: **80.6**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1418	JM1		46673

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
Trichlorofluoromethane	75-69-4	8260D	4.7	U	5.9	4.7	2.4	ug/kg	1
Vinyl chloride	75-01-4	8260D	7.2	UL	12	7.2	3.6	ug/kg	1
Xylenes (total)	1330-20-7	8260D	9.6	U	12	9.6	4.7	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		105	79-119
Dibromofluoromethane		104	78-119
1,2-Dichloroethane-d4		108	71-136
Toluene-d8		106	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24009-002**	
Description: **RI-SB-13 (4-6)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 0935**	Project Name: **TAMP**	% Solids: **81.2**	**06/27/2022 1806**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1441	JM1		46673

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	17	U	21	17	8.5	ug/kg	1
Benzene	71-43-2	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Bromodichloromethane	75-27-4	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Bromoform	75-25-2	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	6.6	U	11	6.6	3.2	ug/kg	1
2-Butanone (MEK)	78-93-3	8260D	8.4	U	21	8.4	4.3	ug/kg	1
Carbon disulfide	75-15-0	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Carbon tetrachloride	56-23-5	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Chlorobenzene	108-90-7	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Chloroethane	75-00-3	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Chloroform	67-66-3	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	6.6	UL	11	6.6	3.2	ug/kg	1
Cyclohexane	110-82-7	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Dibromochloromethane	124-48-1	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260D	6.6	UL	11	6.6	3.2	ug/kg	1
1,1-Dichloroethane	75-34-3	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
1,2-Dichloroethane	107-06-2	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
1,1-Dichloroethene	75-35-4	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
1,2-Dichloropropane	78-87-5	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Ethylbenzene	100-41-4	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
2-Hexanone	591-78-6	8260D	8.8	U	11	8.8	4.3	ug/kg	1
Isopropylbenzene	98-82-8	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Methyl acetate	79-20-9	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260D	8.8	U	11	8.8	4.3	ug/kg	1
Methylcyclohexane	108-87-2	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Methylene chloride	75-09-2	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Styrene	100-42-5	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Tetrachloroethene	127-18-4	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Toluene	108-88-3	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24009-002**	
Description: **RI-SB-13 (4-6)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 0935**	Project Name: **TAMP**	% Solids: **81.2**	**06/27/2022 1806**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1441	JM1		46673

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Trichlorofluoromethane	75-69-4	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Vinyl chloride	75-01-4	8260D	6.6	UL	11	6.6	3.2	ug/kg	1
Xylenes (total)	1330-20-7	8260D	8.8	U	11	8.8	4.3	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		106	79-119
Dibromofluoromethane		93	78-119
1,2-Dichloroethane-d4		102	71-136
Toluene-d8		107	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**			Laboratory ID: **XF24009-003**
Description: **RI-SB-13 (10-12)**			Matrix: **Solid**
Date Sampled: **06/22/2022 0940**	Project Name: **TAMP**		% Solids: **86.0** **06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1505	JM1		46673

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	16	U	20	16	8.1	ug/kg	1
Benzene	71-43-2	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Bromodichloromethane	75-27-4	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Bromoform	75-25-2	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	6.0	U	10	6.0	3.0	ug/kg	1
2-Butanone (MEK)	78-93-3	8260D	8.0	U	20	8.0	4.0	ug/kg	1
Carbon disulfide	75-15-0	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Carbon tetrachloride	56-23-5	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Chlorobenzene	108-90-7	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Chloroethane	75-00-3	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Chloroform	67-66-3	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	6.0	UL	10	6.0	3.0	ug/kg	1
Cyclohexane	110-82-7	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Dibromochloromethane	124-48-1	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260D	6.0	UL	10	6.0	3.0	ug/kg	1
1,1-Dichloroethane	75-34-3	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
1,2-Dichloroethane	107-06-2	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
1,1-Dichloroethene	75-35-4	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
1,2-Dichloropropane	78-87-5	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Ethylbenzene	100-41-4	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
2-Hexanone	591-78-6	8260D	8.0	U	10	8.0	4.0	ug/kg	1
Isopropylbenzene	98-82-8	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Methyl acetate	79-20-9	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260D	8.0	U	10	8.0	4.0	ug/kg	1
Methylcyclohexane	108-87-2	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Methylene chloride	75-09-2	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Styrene	100-42-5	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Tetrachloroethene	127-18-4	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Toluene	108-88-3	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24009-003**	
Description: **RI-SB-13 (10-12)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 0940**	Project Name: **TAMP**	% Solids: **86.0**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1505	JM1		46673

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Trichlorofluoromethane	75-69-4	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Vinyl chloride	75-01-4	8260D	6.0	UL	10	6.0	3.0	ug/kg	1
Xylenes (total)	1330-20-7	8260D	8.0	U	10	8.0	4.0	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		106	79-119
Dibromofluoromethane		102	78-119
1,2-Dichloroethane-d4		105	71-136
Toluene-d8		102	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**			Laboratory ID: **XF24009-004**
Description: **RI-SB-14 (0-2)**			Matrix: **Solid**
Date Sampled: **06/21/2022 1715**	Project Name: **TAMP**		% Solids: **86.3** **06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1527	JM1		46673

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**14**	**J**	**19**	15	**7.6**	**ug/kg**	**1**
Benzene	71-43-2	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Bromodichloromethane	75-27-4	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Bromoform	75-25-2	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	5.7	U	9.5	5.7	2.8	ug/kg	1
2-Butanone (MEK)	78-93-3	8260D	7.6	U	19	7.6	3.8	ug/kg	1
Carbon disulfide	75-15-0	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Carbon tetrachloride	56-23-5	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Chlorobenzene	108-90-7	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Chloroethane	75-00-3	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Chloroform	67-66-3	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	5.7	UL	9.5	5.7	2.8	ug/kg	1
Cyclohexane	110-82-7	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Dibromochloromethane	124-48-1	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260D	5.7	UL	9.5	5.7	2.8	ug/kg	1
1,1-Dichloroethane	75-34-3	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,2-Dichloroethane	107-06-2	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,1-Dichloroethene	75-35-4	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,2-Dichloropropane	78-87-5	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Ethylbenzene	100-41-4	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
2-Hexanone	591-78-6	8260D	7.6	U	9.5	7.6	3.8	ug/kg	1
Isopropylbenzene	98-82-8	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Methyl acetate	79-20-9	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260D	7.6	U	9.5	7.6	3.8	ug/kg	1
Methylcyclohexane	108-87-2	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Methylene chloride	75-09-2	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Styrene	100-42-5	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Tetrachloroethene	127-18-4	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Toluene	108-88-3	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24009-004**	
Description: **RI-SB-14 (0-2)**		Matrix: **Solid**	
Date Sampled: **06/21/2022 1715**	Project Name: **TAMP**	% Solids: **86.3**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1527	JM1		46673

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Trichlorofluoromethane	75-69-4	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Vinyl chloride	75-01-4	8260D	5.7	UL	9.5	5.7	2.8	ug/kg	1
Xylenes (total)	1330-20-7	8260D	7.6	U	9.5	7.6	3.8	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		104	79-119
Dibromofluoromethane		96	78-119
1,2-Dichloroethane-d4		105	71-136
Toluene-d8		102	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24009-005**	
Description: **RI-SB-14 (10-12)**		Matrix: **Solid**	
Date Sampled: **06/21/2022 1730**	Project Name: **TAMP**	% Solids: **78.5**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1551	JM1		46673

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**11**	**J**	**23**	18	**9.2**	**ug/kg**	**1**
Benzene	71-43-2	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
Bromodichloromethane	75-27-4	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
Bromoform	75-25-2	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	6.6	U	11	6.6	3.4	ug/kg	1
2-Butanone (MEK)	78-93-3	8260D	9.2	U	23	9.2	4.6	ug/kg	1
Carbon disulfide	75-15-0	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
Carbon tetrachloride	56-23-5	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
Chlorobenzene	108-90-7	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
Chloroethane	75-00-3	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
Chloroform	67-66-3	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	6.6	UL	11	6.6	3.4	ug/kg	1
Cyclohexane	110-82-7	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
Dibromochloromethane	124-48-1	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260D	6.6	UL	11	6.6	3.4	ug/kg	1
1,1-Dichloroethane	75-34-3	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
1,2-Dichloroethane	107-06-2	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
1,1-Dichloroethene	75-35-4	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
1,2-Dichloropropane	78-87-5	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
Ethylbenzene	100-41-4	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
2-Hexanone	591-78-6	8260D	8.8	U	11	8.8	4.6	ug/kg	1
Isopropylbenzene	98-82-8	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
Methyl acetate	79-20-9	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260D	8.8	U	11	8.8	4.6	ug/kg	1
Methylcyclohexane	108-87-2	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
Methylene chloride	75-09-2	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
Styrene	100-42-5	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
Tetrachloroethene	**127-18-4**	**8260D**	**5.7**		**5.7**	4.6	**2.3**	**ug/kg**	**1**
Toluene	108-88-3	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24009-005**	
Description: **RI-SB-14 (10-12)**		Matrix: **Solid**	
Date Sampled: **06/21/2022 1730**	Project Name: **TAMP**	% Solids: **78.5**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1551	JM1		46673

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**4.8**	**J**	**5.7**	4.6	**2.3**	**ug/kg**	**1**
Trichlorofluoromethane	75-69-4	8260D	4.6	U	5.7	4.6	2.3	ug/kg	1
Vinyl chloride	75-01-4	8260D	6.6	UL	11	6.6	3.4	ug/kg	1
Xylenes (total)	1330-20-7	8260D	8.8	U	11	8.8	4.6	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		105	79-119
Dibromofluoromethane		98	78-119
1,2-Dichloroethane-d4		104	71-136
Toluene-d8		103	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24009-006**	
Description: **RI-SB-15 (2-4)**		Matrix: **Solid**	
Date Sampled: **06/21/2022 1800**	Project Name: **TAMP**	% Solids: **75.2**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1614	JM1		46673
2	5035	8260D	1	07/05/2022 1515	JM1		47052

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	18	U	22	18	8.9	ug/kg	1
Benzene	71-43-2	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Bromodichloromethane	75-27-4	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Bromoform	75-25-2	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	6.6	US	11	6.6	3.3	ug/kg	1
2-Butanone (MEK)	78-93-3	8260D	8.8	U	22	8.8	4.5	ug/kg	1
Carbon disulfide	75-15-0	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
Carbon tetrachloride	56-23-5	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
Chlorobenzene	108-90-7	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Chloroethane	75-00-3	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
Chloroform	67-66-3	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	6.6	ULS	11	6.6	3.3	ug/kg	1
Cyclohexane	110-82-7	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Dibromochloromethane	124-48-1	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260D	6.6	ULS	11	6.6	3.3	ug/kg	1
1,1-Dichloroethane	75-34-3	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
1,2-Dichloroethane	107-06-2	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,1-Dichloroethene	75-35-4	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
1,2-Dichloropropane	78-87-5	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Ethylbenzene	100-41-4	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
2-Hexanone	591-78-6	8260D	8.8	U	11	8.8	4.5	ug/kg	1
Isopropylbenzene	98-82-8	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
Methyl acetate	79-20-9	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260D	8.8	US	11	8.8	4.5	ug/kg	1
Methylcyclohexane	108-87-2	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
Methylene chloride	75-09-2	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
Styrene	100-42-5	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Tetrachloroethene	**127-18-4**	**8260D**	**23**	**S**	**5.6**	4.5	**2.2**	**ug/kg**	**1**
Toluene	108-88-3	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24009-006**	
Description: **RI-SB-15 (2-4)**		Matrix: **Solid**	
Date Sampled: **06/21/2022 1800**	Project Name: **TAMP**	% Solids: **75.2**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1614	JM1		46673
2	5035	8260D	1	07/05/2022 1515	JM1		47052

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Trichloroethene	**79-01-6**	**8260D**	**18**		**5.6**	4.5	**2.2**	**ug/kg**	**1**
Trichlorofluoromethane	75-69-4	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
Vinyl chloride	75-01-4	8260D	6.6	ULS	11	6.6	3.3	ug/kg	1
Xylenes (total)	1330-20-7	8260D	8.8	U	11	8.8	4.5	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		106	79-119		96	79-119
Dibromofluoromethane		97	78-119		106	78-119
1,2-Dichloroethane-d4		101	71-136		107	71-136
Toluene-d8		102	85-116		106	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24009-006**	
Description: **RI-SB-15 (2-4)**		Matrix: **Solid**	
Date Sampled: **06/21/2022 1800**	Project Name: **TAMP**	% Solids: **75.2**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1614	JM1		46673
2	5035	8260D	1	07/05/2022 1515	JM1		47052

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**19**	**J**	**23**	18	**9.1**	**ug/kg**	**2**
Benzene	71-43-2	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
Bromodichloromethane	75-27-4	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
Bromoform	75-25-2	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
Bromomethane (Methyl bromide)	74-83-9	8260D	6.6	U	11	6.6	3.4	ug/kg	2
2-Butanone (MEK)	78-93-3	8260D	9.2	U	23	9.2	4.6	ug/kg	2
Carbon disulfide	75-15-0	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
Carbon tetrachloride	56-23-5	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
Chlorobenzene	108-90-7	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
Chloroethane	75-00-3	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
Chloroform	67-66-3	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
Chloromethane (Methyl chloride)	74-87-3	8260D	6.6	U	11	6.6	3.4	ug/kg	2
Cyclohexane	110-82-7	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
Dibromochloromethane	124-48-1	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
1,2-Dichlorobenzene	95-50-1	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
1,3-Dichlorobenzene	541-73-1	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
1,4-Dichlorobenzene	106-46-7	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
Dichlorodifluoromethane	75-71-8	8260D	6.6	U	11	6.6	3.4	ug/kg	2
1,1-Dichloroethane	75-34-3	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
1,2-Dichloroethane	107-06-2	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
1,1-Dichloroethene	75-35-4	8260D	4.6	US	5.7	4.6	2.3	ug/kg	2
cis-1,2-Dichloroethene	156-59-2	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
trans-1,2-Dichloroethene	156-60-5	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
1,2-Dichloropropane	78-87-5	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
cis-1,3-Dichloropropene	10061-01-5	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
trans-1,3-Dichloropropene	10061-02-6	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
Ethylbenzene	100-41-4	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
2-Hexanone	591-78-6	8260D	8.8	U	11	8.8	4.6	ug/kg	2
Isopropylbenzene	98-82-8	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
Methyl acetate	79-20-9	8260D	4.6	US	5.7	4.6	2.3	ug/kg	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
4-Methyl-2-pentanone	108-10-1	8260D	8.8	U	11	8.8	4.6	ug/kg	2
Methylcyclohexane	108-87-2	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
Methylene chloride	75-09-2	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
Styrene	100-42-5	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
Tetrachloroethene	**127-18-4**	**8260D**	**14**		**5.7**	4.6	**2.3**	**ug/kg**	**2**
Toluene	108-88-3	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
1,2,4-Trichlorobenzene	120-82-1	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
1,1,1-Trichloroethane	71-55-6	8260D	4.6	US	5.7	4.6	2.3	ug/kg	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24009-006**	
Description: **RI-SB-15 (2-4)**		Matrix: **Solid**	
Date Sampled: **06/21/2022 1800**	Project Name: **TAMP**	% Solids: **75.2**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1614	JM1		46673
2	5035	8260D	1	07/05/2022 1515	JM1		47052

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
Trichloroethene	**79-01-6**	**8260D**	**13**	**S**	**5.7**	4.6	**2.3**	**ug/kg**	**2**
Trichlorofluoromethane	75-69-4	8260D	4.6	U	5.7	4.6	2.3	ug/kg	2
Vinyl chloride	75-01-4	8260D	6.6	U	11	6.6	3.4	ug/kg	2
Xylenes (total)	1330-20-7	8260D	8.8	U	11	8.8	4.6	ug/kg	2

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		106	79-119		96	79-119
Dibromofluoromethane		97	78-119		106	78-119
1,2-Dichloroethane-d4		101	71-136		107	71-136
Toluene-d8		102	85-116		106	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**			Laboratory ID: **XF24009-007**
Description: **RI-SB-15 (12-14)**			Matrix: **Solid**
Date Sampled: **06/21/2022 1815**	Project Name: **TAMP**		% Solids: **75.5** **06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1637	JM1		46673

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**9.4**	**J**	**22**	18	**9.0**	**ug/kg**	**1**
Benzene	71-43-2	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Bromodichloromethane	75-27-4	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Bromoform	75-25-2	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	6.6	U	11	6.6	3.4	ug/kg	1
2-Butanone (MEK)	78-93-3	8260D	8.8	U	22	8.8	4.5	ug/kg	1
Carbon disulfide	75-15-0	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Carbon tetrachloride	56-23-5	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Chlorobenzene	108-90-7	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Chloroethane	75-00-3	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Chloroform	67-66-3	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	6.6	UL	11	6.6	3.4	ug/kg	1
Cyclohexane	110-82-7	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Dibromochloromethane	124-48-1	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260D	6.6	UL	11	6.6	3.4	ug/kg	1
1,1-Dichloroethane	75-34-3	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,2-Dichloroethane	107-06-2	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,1-Dichloroethene	75-35-4	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,2-Dichloropropane	78-87-5	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Ethylbenzene	100-41-4	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
2-Hexanone	591-78-6	8260D	8.8	U	11	8.8	4.5	ug/kg	1
Isopropylbenzene	98-82-8	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Methyl acetate	79-20-9	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260D	8.8	U	11	8.8	4.5	ug/kg	1
Methylcyclohexane	108-87-2	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Methylene chloride	75-09-2	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Styrene	100-42-5	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Tetrachloroethene	127-18-4	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Toluene	108-88-3	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24009-007**	
Description: **RI-SB-15 (12-14)**		Matrix: **Solid**	
Date Sampled: **06/21/2022 1815**	Project Name: **TAMP**	% Solids: **75.5**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1637	JM1		46673

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Trichlorofluoromethane	75-69-4	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Vinyl chloride	75-01-4	8260D	6.6	UL	11	6.6	3.4	ug/kg	1
Xylenes (total)	1330-20-7	8260D	8.8	U	11	8.8	4.5	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		104	79-119
Dibromofluoromethane		99	78-119
1,2-Dichloroethane-d4		103	71-136
Toluene-d8		108	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XF24009-008**

Description: **FB-01** Matrix: **Aqueous**

Date Sampled: **06/22/2022 0900** Project Name: **TAMP**

Date Received: **06/24/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	06/27/2022 2219	SDC		46330

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**11**	**J**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	**75-09-2**	**8260D**	**1.5**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24009-008**	
Description: **FB-01**		Matrix: **Aqueous**	
Date Sampled: **06/22/2022 0900**	Project Name: **TAMP**		
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	06/27/2022 2219	SDC		46330

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		100	81-118
Bromofluorobenzene		102	85-114
Toluene-d8		103	89-112
Dibromofluoromethane		101	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XF24009-009**

Description: **TB-03** Matrix: **Aqueous**

Date Sampled: **06/22/2022** Project Name: **TAMP**

Date Received: **06/24/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	06/27/2022 2242	SDC		46330

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24009-009**	
Description: **TB-03**		Matrix: **Aqueous**	
Date Sampled: **06/22/2022**	Project Name: **TAMP**		
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	06/27/2022 2242	SDC		46330

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		96	81-118
Bromofluorobenzene		105	85-114
Toluene-d8		100	89-112
Dibromofluoromethane		98	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24009-010**	
Description: **RI-SB-16 (0-2)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1055**	Project Name: **TAMP**	% Solids: **70.1**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5035	8260D	1	07/05/2022 1539	JM1		47052

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**44**		**26**	21	**10**	**ug/kg**	**2**
Benzene	71-43-2	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
Bromodichloromethane	75-27-4	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
Bromoform	75-25-2	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
Bromomethane (Methyl bromide)	74-83-9	8260D	7.8	U	13	7.8	3.9	ug/kg	2
2-Butanone (MEK)	78-93-3	8260D	10	U	26	10	5.2	ug/kg	2
Carbon disulfide	**75-15-0**	**8260D**	**3.3**	**J**	**6.5**	5.2	**2.6**	**ug/kg**	**2**
Carbon tetrachloride	56-23-5	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
Chlorobenzene	108-90-7	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
Chloroethane	75-00-3	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
Chloroform	67-66-3	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
Chloromethane (Methyl chloride)	74-87-3	8260D	7.8	U	13	7.8	3.9	ug/kg	2
Cyclohexane	**110-82-7**	**8260D**	**4.5**	**J**	**6.5**	5.2	**2.6**	**ug/kg**	**2**
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
Dibromochloromethane	124-48-1	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
1,2-Dichlorobenzene	95-50-1	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
1,3-Dichlorobenzene	541-73-1	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
1,4-Dichlorobenzene	106-46-7	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
Dichlorodifluoromethane	75-71-8	8260D	7.8	U	13	7.8	3.9	ug/kg	2
1,1-Dichloroethane	75-34-3	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
1,2-Dichloroethane	107-06-2	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
1,1-Dichloroethene	75-35-4	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**3.0**	**J**	**6.5**	5.2	**2.6**	**ug/kg**	**2**
trans-1,2-Dichloroethene	156-60-5	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
1,2-Dichloropropane	78-87-5	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
cis-1,3-Dichloropropene	10061-01-5	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
trans-1,3-Dichloropropene	10061-02-6	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
Ethylbenzene	**100-41-4**	**8260D**	**6.9**		**6.5**	5.2	**2.6**	**ug/kg**	**2**
2-Hexanone	591-78-6	8260D	10	U	13	10	5.2	ug/kg	2
Isopropylbenzene	**98-82-8**	**8260D**	**4.9**	**J**	**6.5**	5.2	**2.6**	**ug/kg**	**2**
Methyl acetate	79-20-9	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
4-Methyl-2-pentanone	108-10-1	8260D	10	U	13	10	5.2	ug/kg	2
Methylcyclohexane	**108-87-2**	**8260D**	**81**		**6.5**	5.2	**2.6**	**ug/kg**	**2**
Methylene chloride	75-09-2	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
Styrene	100-42-5	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
Tetrachloroethene	127-18-4	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
Toluene	**108-88-3**	**8260D**	**3.7**	**J**	**6.5**	5.2	**2.6**	**ug/kg**	**2**
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**29**		**6.5**	5.2	**2.6**	**ug/kg**	**2**
1,2,4-Trichlorobenzene	120-82-1	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
1,1,1-Trichloroethane	71-55-6	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
1,1,2-Trichloroethane	79-00-5	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24009-010**	
Description: **RI-SB-16 (0-2)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1055**	Project Name: **TAMP**	% Solids: **70.1**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5035	8260D	1	07/05/2022 1539	JM1		47052

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
Trichlorofluoromethane	75-69-4	8260D	5.2	U	6.5	5.2	2.6	ug/kg	2
Vinyl chloride	**75-01-4**	**8260D**	**44**		**13**	7.8	**3.9**	**ug/kg**	**2**
Xylenes (total)	**1330-20-7**	**8260D**	**19**		**13**	10	**5.2**	**ug/kg**	**2**

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		109	79-119
Dibromofluoromethane		99	78-119
1,2-Dichloroethane-d4		101	71-136
Toluene-d8		111	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24009-011**	
Description: **RI-SB-16 (4-6)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1050**	Project Name: **TAMP**	% Solids: **73.4**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260D	1	06/30/2022 1723	JM1		46673	
2	5035 High	8260D	1	07/05/2022 1313	JM1		47032	5.35

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	20	U	25	20	9.8	ug/kg	1
Benzene	71-43-2	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
Bromodichloromethane	75-27-4	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
Bromoform	75-25-2	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	7.2	U	12	7.2	3.7	ug/kg	1
2-Butanone (MEK)	78-93-3	8260D	10	U	25	10	4.9	ug/kg	1
Carbon disulfide	75-15-0	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
Carbon tetrachloride	56-23-5	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
Chlorobenzene	108-90-7	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
Chloroethane	75-00-3	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
Chloroform	67-66-3	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	7.2	UL	12	7.2	3.7	ug/kg	1
Cyclohexane	110-82-7	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
Dibromochloromethane	124-48-1	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260D	7.2	UL	12	7.2	3.7	ug/kg	1
1,1-Dichloroethane	75-34-3	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
1,2-Dichloroethane	107-06-2	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
1,1-Dichloroethene	75-35-4	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**160**		**6.1**	4.9	**2.5**	**ug/kg**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
1,2-Dichloropropane	78-87-5	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
Ethylbenzene	100-41-4	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
2-Hexanone	591-78-6	8260D	9.6	U	12	9.6	4.9	ug/kg	1
Isopropylbenzene	98-82-8	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
Methyl acetate	79-20-9	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260D	9.6	U	12	9.6	4.9	ug/kg	1
Methylcyclohexane	108-87-2	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
Methylene chloride	75-09-2	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
Styrene	100-42-5	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
Tetrachloroethene	127-18-4	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
Toluene	108-88-3	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24009-011**	
Description: **RI-SB-16 (4-6)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1050**	Project Name: **TAMP**	% Solids: **73.4**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260D	1	06/30/2022 1723	JM1		46673	
2	5035 High	8260D	1	07/05/2022 1313	JM1		47032	5.35

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
Trichloroethene	**79-01-6**	**8260D**	**3600**		**410**	330	**160**	**ug/kg**	**2**
Trichlorofluoromethane	75-69-4	8260D	4.9	U	6.1	4.9	2.5	ug/kg	1
Vinyl chloride	75-01-4	8260D	7.2	UL	12	7.2	3.7	ug/kg	1
Xylenes (total)	1330-20-7	8260D	9.6	U	12	9.6	4.9	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		107	79-119		101	79-119
Dibromofluoromethane		103	78-119		103	78-119
1,2-Dichloroethane-d4		117	71-136		104	71-136
Toluene-d8		101	85-116		105	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24009-012**	
Description: **DUP-SB-02**		Matrix: **Solid**	
Date Sampled: **06/22/2022**	Project Name: **TAMP**	% Solids: **74.3**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260D	1	06/30/2022 1746	JM1		46673	
2	5035 High	8260D	1	07/05/2022 1338	JM1		47032	4.41

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	22	U	27	22	11	ug/kg	1
Benzene	71-43-2	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
Bromodichloromethane	75-27-4	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
Bromoform	75-25-2	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	8.4	U	14	8.4	4.1	ug/kg	1
2-Butanone (MEK)	78-93-3	8260D	11	U	27	11	5.4	ug/kg	1
Carbon disulfide	75-15-0	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
Carbon tetrachloride	56-23-5	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
Chlorobenzene	108-90-7	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
Chloroethane	75-00-3	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
Chloroform	67-66-3	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	8.4	UL	14	8.4	4.1	ug/kg	1
Cyclohexane	110-82-7	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
Dibromochloromethane	124-48-1	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260D	8.4	UL	14	8.4	4.1	ug/kg	1
1,1-Dichloroethane	75-34-3	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
1,2-Dichloroethane	107-06-2	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
1,1-Dichloroethene	75-35-4	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**320**	**E**	**6.8**	5.4	**2.7**	**ug/kg**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
1,2-Dichloropropane	78-87-5	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
Ethylbenzene	100-41-4	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
2-Hexanone	591-78-6	8260D	11	U	14	11	5.4	ug/kg	1
Isopropylbenzene	98-82-8	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
Methyl acetate	79-20-9	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260D	11	U	14	11	5.4	ug/kg	1
Methylcyclohexane	**108-87-2**	**8260D**	**7.5**		**6.8**	5.4	**2.7**	**ug/kg**	**1**
Methylene chloride	75-09-2	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
Styrene	100-42-5	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
Tetrachloroethene	**127-18-4**	**8260D**	**10**		**6.8**	5.4	**2.7**	**ug/kg**	**1**
Toluene	108-88-3	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24009-012**	
Description: **DUP-SB-02**		Matrix: **Solid**	
Date Sampled: **06/22/2022**	Project Name: **TAMP**	% Solids: **74.3**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260D	1	06/30/2022 1746	JM1		46673	
2	5035 High	8260D	1	07/05/2022 1338	JM1		47032	4.41

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
Trichloroethene	**79-01-6**	**8260D**	**1300**		**470**	380	**190**	**ug/kg**	**2**
Trichlorofluoromethane	75-69-4	8260D	5.4	U	6.8	5.4	2.7	ug/kg	1
Vinyl chloride	**75-01-4**	**8260D**	**6.3**	**JL**	**14**	8.4	**4.1**	**ug/kg**	**1**
Xylenes (total)	1330-20-7	8260D	11	U	14	11	5.4	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		99	79-119		96	79-119
Dibromofluoromethane		100	78-119		108	78-119
1,2-Dichloroethane-d4		100	71-136		106	71-136
Toluene-d8		108	85-116		101	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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QC Summary

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46330-001
Batch: 46330
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	06/27/2022 2134
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	06/27/2022 2134
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	06/27/2022 2134
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	06/27/2022 2134
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	06/27/2022 2134
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	06/27/2022 2134
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	06/27/2022 2134
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	06/27/2022 2134
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	06/27/2022 2134
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	06/27/2022 2134
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	06/27/2022 2134
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46330-001
Batch: 46330
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		101	81-118
Bromofluorobenzene		103	85-114
Toluene-d8		97	89-112
Dibromofluoromethane		101	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46330-002
Batch: 46330
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	95		1	95	39-160	06/27/2022 2031
Benzene	50	49		1	98	79-120	06/27/2022 2031
Bromodichloromethane	50	46		1	92	79-125	06/27/2022 2031
Bromoform	50	43		1	87	66-130	06/27/2022 2031
Bromomethane (Methyl bromide)	50	51		1	103	53-141	06/27/2022 2031
2-Butanone (MEK)	100	94		1	94	56-143	06/27/2022 2031
Carbon disulfide	50	50		1	100	64-133	06/27/2022 2031
Carbon tetrachloride	50	49		1	98	72-136	06/27/2022 2031
Chlorobenzene	50	49		1	97	82-118	06/27/2022 2031
Chloroethane	50	48		1	97	60-138	06/27/2022 2031
Chloroform	50	49		1	99	79-124	06/27/2022 2031
Chloromethane (Methyl chloride)	50	43		1	86	50-139	06/27/2022 2031
Cyclohexane	50	46		1	91	71-130	06/27/2022 2031
1,2-Dibromo-3-chloropropane (DBCP)	50	42		1	85	62-128	06/27/2022 2031
Dibromochloromethane	50	47		1	95	74-126	06/27/2022 2031
1,2-Dibromoethane (EDB)	50	49		1	99	77-121	06/27/2022 2031
1,2-Dichlorobenzene	50	49		1	98	80-119	06/27/2022 2031
1,3-Dichlorobenzene	50	49		1	99	80-119	06/27/2022 2031
1,4-Dichlorobenzene	50	49		1	98	79-118	06/27/2022 2031
Dichlorodifluoromethane	50	44		1	88	32-152	06/27/2022 2031
1,1-Dichloroethane	50	48		1	97	77-125	06/27/2022 2031
1,2-Dichloroethane	50	48		1	97	73-128	06/27/2022 2031
1,1-Dichloroethene	50	51		1	102	71-131	06/27/2022 2031
cis-1,2-Dichloroethene	50	50		1	99	78-123	06/27/2022 2031
trans-1,2-Dichloroethene	50	50		1	99	75-124	06/27/2022 2031
1,2-Dichloropropane	50	47		1	94	78-122	06/27/2022 2031
cis-1,3-Dichloropropene	50	48		1	95	75-124	06/27/2022 2031
trans-1,3-Dichloropropene	50	49		1	99	73-127	06/27/2022 2031
Ethylbenzene	50	48		1	96	79-121	06/27/2022 2031
2-Hexanone	100	92		1	92	57-139	06/27/2022 2031
Isopropylbenzene	50	48		1	96	72-131	06/27/2022 2031
Methyl acetate	50	40		1	80	56-136	06/27/2022 2031
Methyl tertiary butyl ether (MTBE)	50	48		1	97	71-124	06/27/2022 2031
4-Methyl-2-pentanone	100	93		1	93	67-130	06/27/2022 2031
Methylcyclohexane	50	47		1	94	72-132	06/27/2022 2031
Methylene chloride	50	47		1	93	74-124	06/27/2022 2031
Styrene	50	48		1	97	78-123	06/27/2022 2031
1,1,2,2-Tetrachloroethane	50	47		1	95	71-121	06/27/2022 2031
Tetrachloroethene	50	52		1	104	74-129	06/27/2022 2031
Toluene	50	50		1	99	80-121	06/27/2022 2031
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	51		1	102	70-136	06/27/2022 2031
1,2,4-Trichlorobenzene	50	47		1	95	69-130	06/27/2022 2031
1,1,1-Trichloroethane	50	49		1	97	74-131	06/27/2022 2031
1,1,2-Trichloroethane	50	49		1	98	80-119	06/27/2022 2031

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46330-002
Batch: 46330
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	52		1	103	79-123	06/27/2022 2031
Trichlorofluoromethane	50	50		1	100	65-141	06/27/2022 2031
Vinyl chloride	50	48		1	96	58-137	06/27/2022 2031
Xylenes (total)	100	97		1	97	79-121	06/27/2022 2031

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		93	81-118
Bromofluorobenzene		93	85-114
Toluene-d8		97	89-112
Dibromofluoromethane		98	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: XQ46330-003
Batch: 46330
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acetone	100	96		1	96	0.94	39-160	20	06/28/2022 0014
Benzene	50	50		1	101	2.8	79-120	20	06/28/2022 0014
Bromodichloromethane	50	46		1	93	0.28	79-125	20	06/28/2022 0014
Bromoform	50	42		1	85	2.1	66-130	20	06/28/2022 0014
Bromomethane (Methyl bromide)	50	51		1	101	1.4	53-141	20	06/28/2022 0014
2-Butanone (MEK)	100	120	+	1	119	23	56-143	20	06/28/2022 0014
Carbon disulfide	50	46		1	92	8.5	64-133	20	06/28/2022 0014
Carbon tetrachloride	50	48		1	96	1.9	72-136	20	06/28/2022 0014
Chlorobenzene	50	49		1	97	0.14	82-118	20	06/28/2022 0014
Chloroethane	50	48		1	96	0.68	60-138	20	06/28/2022 0014
Chloroform	50	49		1	97	1.3	79-124	20	06/28/2022 0014
Chloromethane (Methyl chloride)	50	42		1	85	1.2	50-139	20	06/28/2022 0014
Cyclohexane	50	45		1	91	0.80	71-130	20	06/28/2022 0014
1,2-Dibromo-3-chloropropane (DBCP)	50	36		1	72	15	62-128	20	06/28/2022 0014
Dibromochloromethane	50	47		1	94	1.0	74-126	20	06/28/2022 0014
1,2-Dibromoethane (EDB)	50	51		1	102	3.0	77-121	20	06/28/2022 0014
1,2-Dichlorobenzene	50	46		1	92	6.9	80-119	20	06/28/2022 0014
1,3-Dichlorobenzene	50	48		1	95	3.4	80-119	20	06/28/2022 0014
1,4-Dichlorobenzene	50	47		1	95	2.9	79-118	20	06/28/2022 0014
Dichlorodifluoromethane	50	43		1	85	3.2	32-152	20	06/28/2022 0014
1,1-Dichloroethane	50	48		1	95	1.5	77-125	20	06/28/2022 0014
1,2-Dichloroethane	50	49		1	97	0.75	73-128	20	06/28/2022 0014
1,1-Dichloroethene	50	48		1	96	6.3	71-131	20	06/28/2022 0014
cis-1,2-Dichloroethene	50	50		1	101	1.2	78-123	20	06/28/2022 0014
trans-1,2-Dichloroethene	50	48		1	97	2.6	75-124	20	06/28/2022 0014
1,2-Dichloropropane	50	49		1	98	3.7	78-122	20	06/28/2022 0014
cis-1,3-Dichloropropene	50	48		1	95	0.22	75-124	20	06/28/2022 0014
trans-1,3-Dichloropropene	50	47		1	94	4.8	73-127	20	06/28/2022 0014
Ethylbenzene	50	48		1	97	0.98	79-121	20	06/28/2022 0014
2-Hexanone	100	110		1	106	14	57-139	20	06/28/2022 0014
Isopropylbenzene	50	44		1	88	7.6	72-131	20	06/28/2022 0014
Methyl acetate	50	42		1	84	4.8	56-136	20	06/28/2022 0014
Methyl tertiary butyl ether (MTBE)	50	49		1	97	0.57	71-124	20	06/28/2022 0014
4-Methyl-2-pentanone	100	100		1	104	11	67-130	20	06/28/2022 0014
Methylcyclohexane	50	46		1	92	2.2	72-132	20	06/28/2022 0014
Methylene chloride	50	47		1	93	0.42	74-124	20	06/28/2022 0014
Styrene	50	49		1	99	2.1	78-123	20	06/28/2022 0014
1,1,2,2-Tetrachloroethane	50	47		1	94	1.2	71-121	20	06/28/2022 0014
Tetrachloroethene	50	52		1	103	0.85	74-129	20	06/28/2022 0014
Toluene	50	49		1	98	1.4	80-121	20	06/28/2022 0014
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	50		1	99	3.0	70-136	20	06/28/2022 0014
1,2,4-Trichlorobenzene	50	40		1	80	17	69-130	20	06/28/2022 0014
1,1,1-Trichloroethane	50	48		1	96	1.4	74-131	20	06/28/2022 0014
1,1,2-Trichloroethane	50	50		1	99	1.4	80-119	20	06/28/2022 0014

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: XQ46330-003
Batch: 46330
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Trichloroethene	50	52		1	104	0.24	79-123	20	06/28/2022 0014
Trichlorofluoromethane	50	48		1	96	4.1	65-141	20	06/28/2022 0014
Vinyl chloride	50	48		1	96	0.15	58-137	20	06/28/2022 0014
Xylenes (total)	100	96		1	96	0.99	79-121	20	06/28/2022 0014

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		94	81-118
Bromofluorobenzene		96	85-114
Toluene-d8		96	89-112
Dibromofluoromethane		97	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46673-001
Batch: 46673
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	16	U	1	20	16	8.0	ug/kg	06/30/2022 0959
Benzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Bromodichloromethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Bromoform	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Bromomethane (Methyl bromide)	6.0	U	1	10	6.0	3.0	ug/kg	06/30/2022 0959
2-Butanone (MEK)	8.0	U	1	20	8.0	4.0	ug/kg	06/30/2022 0959
Carbon disulfide	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Carbon tetrachloride	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Chlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Chloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Chloroform	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Chloromethane (Methyl chloride)	6.0	U	1	10	6.0	3.0	ug/kg	06/30/2022 0959
Cyclohexane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,2-Dibromo-3-chloropropane (DBCP)	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Dibromochloromethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,2-Dibromoethane (EDB)	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,2-Dichlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,3-Dichlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,4-Dichlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Dichlorodifluoromethane	6.0	U	1	10	6.0	3.0	ug/kg	06/30/2022 0959
1,1-Dichloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,2-Dichloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,1-Dichloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
cis-1,2-Dichloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
trans-1,2-Dichloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,2-Dichloropropane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
cis-1,3-Dichloropropene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
trans-1,3-Dichloropropene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Ethylbenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
2-Hexanone	8.0	U	1	10	8.0	4.0	ug/kg	06/30/2022 0959
Isopropylbenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Methyl acetate	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Methyl tertiary butyl ether (MTBE)	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
4-Methyl-2-pentanone	8.0	U	1	10	8.0	4.0	ug/kg	06/30/2022 0959
Methylcyclohexane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Methylene chloride	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Styrene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,1,2,2-Tetrachloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Tetrachloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Toluene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,1,2-Trichloro-1,2,2-Trifluoroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,2,4-Trichlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,1,1-Trichloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,1,2-Trichloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46673-001
Batch: 46673
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Trichlorofluoromethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Vinyl chloride	6.0	U	1	10	6.0	3.0	ug/kg	06/30/2022 0959
Xylenes (total)	8.0	U	1	10	8.0	4.0	ug/kg	06/30/2022 0959

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		108	79-119
Dibromofluoromethane		102	78-119
1,2-Dichloroethane-d4		107	71-136
Toluene-d8		105	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46673-002
Batch: 46673
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	110		1	109	36-164	06/30/2022 0936
Benzene	50	51		1	102	77-121	06/30/2022 0936
Bromodichloromethane	50	51		1	101	75-127	06/30/2022 0936
Bromoform	50	51		1	102	67-132	06/30/2022 0936
Bromomethane (Methyl bromide)	50	62		1	124	53-143	06/30/2022 0936
2-Butanone (MEK)	100	110		1	109	51-148	06/30/2022 0936
Carbon disulfide	50	51		1	102	63-132	06/30/2022 0936
Carbon tetrachloride	50	49		1	98	70-135	06/30/2022 0936
Chlorobenzene	50	50		1	100	79-120	06/30/2022 0936
Chloroethane	50	61		1	123	59-139	06/30/2022 0936
Chloroform	50	49		1	99	78-123	06/30/2022 0936
Chloromethane (Methyl chloride)	50	71	N	1	142	50-136	06/30/2022 0936
Cyclohexane	50	44		1	87	67-131	06/30/2022 0936
1,2-Dibromo-3-chloropropane (DBCP)	50	47		1	93	61-132	06/30/2022 0936
Dibromochloromethane	50	49		1	97	75-127	06/30/2022 0936
1,2-Dibromoethane (EDB)	50	50		1	100	78-122	06/30/2022 0936
1,2-Dichlorobenzene	50	47		1	95	78-121	06/30/2022 0936
1,3-Dichlorobenzene	50	50		1	99	77-121	06/30/2022 0936
1,4-Dichlorobenzene	50	50		1	99	75-120	06/30/2022 0936
Dichlorodifluoromethane	50	75	N	1	150	29-149	06/30/2022 0936
1,1-Dichloroethane	50	51		1	101	76-125	06/30/2022 0936
1,2-Dichloroethane	50	52		1	105	73-128	06/30/2022 0936
1,1-Dichloroethene	50	50		1	100	70-131	06/30/2022 0936
cis-1,2-Dichloroethene	50	49		1	99	77-123	06/30/2022 0936
trans-1,2-Dichloroethene	50	49		1	98	74-125	06/30/2022 0936
1,2-Dichloropropane	50	52		1	104	76-123	06/30/2022 0936
cis-1,3-Dichloropropene	50	51		1	103	74-126	06/30/2022 0936
trans-1,3-Dichloropropene	50	50		1	100	71-130	06/30/2022 0936
Ethylbenzene	50	51		1	101	76-122	06/30/2022 0936
2-Hexanone	100	100		1	100	53-145	06/30/2022 0936
Isopropylbenzene	50	48		1	97	68-134	06/30/2022 0936
Methyl acetate	50	47		1	94	53-144	06/30/2022 0936
Methyl tertiary butyl ether (MTBE)	50	47		1	93	73-125	06/30/2022 0936
4-Methyl-2-pentanone	100	100		1	100	65-135	06/30/2022 0936
Methylcyclohexane	50	51		1	101	66-133	06/30/2022 0936
Methylene chloride	50	51		1	102	70-128	06/30/2022 0936
Styrene	50	52		1	105	76-124	06/30/2022 0936
1,1,2,2-Tetrachloroethane	50	49		1	99	70-124	06/30/2022 0936
Tetrachloroethene	50	46		1	93	73-128	06/30/2022 0936
Toluene	50	46		1	91	77-121	06/30/2022 0936
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	49		1	99	66-136	06/30/2022 0936
1,2,4-Trichlorobenzene	50	46		1	93	67-129	06/30/2022 0936
1,1,1-Trichloroethane	50	49		1	98	73-130	06/30/2022 0936
1,1,2-Trichloroethane	50	49		1	98	78-121	06/30/2022 0936

LOQ = Limit of Quantitation
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LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46673-002
Batch: 46673
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	49		1	99	77-123	06/30/2022 0936
Trichlorofluoromethane	50	54		1	107	62-140	06/30/2022 0936
Vinyl chloride	50	72	N	1	143	56-135	06/30/2022 0936
Xylenes (total)	100	99		1	99	78-124	06/30/2022 0936

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		96	79-119
Dibromofluoromethane		96	78-119
1,2-Dichloroethane-d4		103	71-136
Toluene-d8		92	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MS

Sample ID: XF24009-006MS
Batch: 46673
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Sample Amount (ug/kg)	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	ND	100	150		1	152	36-164	06/30/2022 1942
Benzene	ND	50	60		1	121	77-121	06/30/2022 1942
Bromodichloromethane	ND	50	54		1	108	75-127	06/30/2022 1942
Bromoform	ND	50	57		1	113	67-132	06/30/2022 1942
Bromomethane (Methyl bromide)	ND	50	200	N	1	405	53-143	06/30/2022 1942
2-Butanone (MEK)	ND	100	78		1	78	51-148	06/30/2022 1942
Carbon disulfide	ND	50	160	N	1	311	63-132	06/30/2022 1942
Carbon tetrachloride	ND	50	120	N	1	244	70-135	06/30/2022 1942
Chlorobenzene	ND	50	51		1	101	79-120	06/30/2022 1942
Chloroethane	ND	50	210	N	1	417	59-139	06/30/2022 1942
Chloroform	ND	50	65	N	1	130	78-123	06/30/2022 1942
Chloromethane (Methyl chloride)	ND	50	210	N	1	426	50-136	06/30/2022 1942
Cyclohexane	ND	50	140	N	1	276	67-131	06/30/2022 1942
1,2-Dibromo-3-chloropropane (DBCP)	ND	50	65		1	129	61-132	06/30/2022 1942
Dibromochloromethane	ND	50	46		1	93	75-127	06/30/2022 1942
1,2-Dibromoethane (EDB)	ND	50	42		1	84	78-122	06/30/2022 1942
1,2-Dichlorobenzene	ND	50	53		1	105	78-121	06/30/2022 1942
1,3-Dichlorobenzene	ND	50	50		1	101	77-121	06/30/2022 1942
1,4-Dichlorobenzene	ND	50	50		1	99	75-120	06/30/2022 1942
Dichlorodifluoromethane	ND	50	300	N	1	593	29-149	06/30/2022 1942
1,1-Dichloroethane	ND	50	70	N	1	139	76-125	06/30/2022 1942
1,2-Dichloroethane	ND	50	48		1	96	73-128	06/30/2022 1942
1,1-Dichloroethene	ND	50	120	N	1	236	70-131	06/30/2022 1942
cis-1,2-Dichloroethene	ND	50	68	N	1	135	77-123	06/30/2022 1942
trans-1,2-Dichloroethene	ND	50	82	N	1	164	74-125	06/30/2022 1942
1,2-Dichloropropane	ND	50	60		1	120	76-123	06/30/2022 1942
cis-1,3-Dichloropropene	ND	50	49		1	98	74-126	06/30/2022 1942
trans-1,3-Dichloropropene	ND	50	38		1	75	71-130	06/30/2022 1942
Ethylbenzene	ND	50	59		1	117	76-122	06/30/2022 1942
2-Hexanone	ND	100	110		1	107	53-145	06/30/2022 1942
Isopropylbenzene	ND	50	71	N	1	141	68-134	06/30/2022 1942
Methyl acetate	ND	50	55		1	110	53-144	06/30/2022 1942
Methyl tertiary butyl ether (MTBE)	ND	50	85	N	1	170	73-125	06/30/2022 1942
4-Methyl-2-pentanone	ND	100	150	N	1	149	65-135	06/30/2022 1942
Methylcyclohexane	ND	50	120	N	1	237	66-133	06/30/2022 1942
Methylene chloride	ND	50	99	N	1	197	70-128	06/30/2022 1942
Styrene	ND	50	54		1	109	76-124	06/30/2022 1942
1,1,2,2-Tetrachloroethane	ND	50	52		1	103	70-124	06/30/2022 1942
Tetrachloroethene	23	50	56	N	1	66	73-128	06/30/2022 1942
Toluene	ND	50	46		1	91	77-121	06/30/2022 1942
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	190	N	1	383	66-136	06/30/2022 1942
1,2,4-Trichlorobenzene	ND	50	66	N	1	133	67-129	06/30/2022 1942
1,1,1-Trichloroethane	ND	50	120	N	1	240	73-130	06/30/2022 1942
1,1,2-Trichloroethane	ND	50	40		1	80	78-121	06/30/2022 1942

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MS

Sample ID: XF24009-006MS
Batch: 46673
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Sample Amount (ug/kg)	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	18	50	60		1	84	77-123	06/30/2022 1942
Trichlorofluoromethane	ND	50	170	N	1	347	62-140	06/30/2022 1942
Vinyl chloride	ND	50	250	N	1	495	56-135	06/30/2022 1942
Xylenes (total)	ND	100	120		1	122	78-124	06/30/2022 1942

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		117	79-119
Dibromofluoromethane	N	123	78-119
1,2-Dichloroethane-d4		102	71-136
Toluene-d8		97	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XF24009-006MD
Batch: 46673
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Sample Amount (ug/kg)	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acetone	ND	110	85	+	1	76	56	36-164	20	06/30/2022 2005
Benzene	ND	56	56		1	100	7.3	77-121	20	06/30/2022 2005
Bromodichloromethane	ND	56	50		1	90	7.0	75-127	20	06/30/2022 2005
Bromoform	ND	56	47		1	85	17	67-132	20	06/30/2022 2005
Bromomethane (Methyl bromide)	ND	56	73	+	1	131	94	53-143	20	06/30/2022 2005
2-Butanone (MEK)	ND	110	86		1	77	9.3	51-148	20	06/30/2022 2005
Carbon disulfide	ND	56	68	+	1	121	79	63-132	20	06/30/2022 2005
Carbon tetrachloride	ND	56	61	+	1	109	67	70-135	20	06/30/2022 2005
Chlorobenzene	ND	56	53		1	95	4.9	79-120	20	06/30/2022 2005
Chloroethane	ND	56	74	+	1	133	95	59-139	20	06/30/2022 2005
Chloroform	ND	56	52	+	1	93	23	78-123	20	06/30/2022 2005
Chloromethane (Methyl chloride)	ND	56	83	N,+	1	148	88	50-136	20	06/30/2022 2005
Cyclohexane	ND	56	62	+	1	111	76	67-131	20	06/30/2022 2005
1,2-Dibromo-3-chloropropane (DBCP)	ND	56	42	+	1	76	42	61-132	20	06/30/2022 2005
Dibromochloromethane	ND	56	47		1	85	2.3	75-127	20	06/30/2022 2005
1,2-Dibromoethane (EDB)	ND	56	47		1	85	12	78-122	20	06/30/2022 2005
1,2-Dichlorobenzene	ND	56	48		1	86	8.7	78-121	20	06/30/2022 2005
1,3-Dichlorobenzene	ND	56	51		1	90	0.21	77-121	20	06/30/2022 2005
1,4-Dichlorobenzene	ND	56	50		1	89	0.25	75-120	20	06/30/2022 2005
Dichlorodifluoromethane	ND	56	120	N,+	1	209	87	29-149	20	06/30/2022 2005
1,1-Dichloroethane	ND	56	55	+	1	99	23	76-125	20	06/30/2022 2005
1,2-Dichloroethane	ND	56	50		1	90	4.8	73-128	20	06/30/2022 2005
1,1-Dichloroethene	ND	56	65	+	1	115	59	70-131	20	06/30/2022 2005
cis-1,2-Dichloroethene	ND	56	54	+	1	97	22	77-123	20	06/30/2022 2005
trans-1,2-Dichloroethene	ND	56	57	+	1	102	36	74-125	20	06/30/2022 2005
1,2-Dichloropropane	ND	56	53		1	95	12	76-123	20	06/30/2022 2005
cis-1,3-Dichloropropene	ND	56	51		1	90	2.8	74-126	20	06/30/2022 2005
trans-1,3-Dichloropropene	ND	56	48	+	1	86	25	71-130	20	06/30/2022 2005
Ethylbenzene	ND	56	56		1	99	5.4	76-122	20	06/30/2022 2005
2-Hexanone	ND	110	79	+	1	70	31	53-145	20	06/30/2022 2005
Isopropylbenzene	ND	56	56	+	1	101	23	68-134	20	06/30/2022 2005
Methyl acetate	ND	56	42	+	1	75	27	53-144	20	06/30/2022 2005
Methyl tertiary butyl ether (MTBE)	ND	56	45	+	1	80	62	73-125	20	06/30/2022 2005
4-Methyl-2-pentanone	ND	110	86	+	1	77	54	65-135	20	06/30/2022 2005
Methylcyclohexane	ND	56	67	+	1	120	55	66-133	20	06/30/2022 2005
Methylene chloride	ND	56	54	+	1	97	58	70-128	20	06/30/2022 2005
Styrene	ND	56	55		1	98	1.1	76-124	20	06/30/2022 2005
1,1,2,2-Tetrachloroethane	ND	56	44		1	79	16	70-124	20	06/30/2022 2005
Tetrachloroethene	23	56	66		1	76	16	73-128	20	06/30/2022 2005
Toluene	ND	56	53		1	95	15	77-121	20	06/30/2022 2005
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	56	67	+	1	119	97	66-136	20	06/30/2022 2005
1,2,4-Trichlorobenzene	ND	56	44	+	1	79	40	67-129	20	06/30/2022 2005
1,1,1-Trichloroethane	ND	56	60	+	1	107	67	73-130	20	06/30/2022 2005
1,1,2-Trichloroethane	ND	56	46		1	83	15	78-121	20	06/30/2022 2005

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XF24009-006MD
Batch: 46673
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Sample Amount (ug/kg)	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Trichloroethene	18	56	64		1	83	6.3	77-123	20	06/30/2022 2005
Trichlorofluoromethane	ND	56	79	N,+	1	141	75	62-140	20	06/30/2022 2005
Vinyl chloride	ND	56	86	N,+	1	153	97	56-135	20	06/30/2022 2005
Xylenes (total)	ND	110	110		1	99	9.9	78-124	20	06/30/2022 2005

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		107	79-119
Dibromofluoromethane		99	78-119
1,2-Dichloroethane-d4		104	71-136
Toluene-d8		107	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ47032-001
Batch: 47032
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035 High

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	200	U	1	250	200	100	ug/kg	07/05/2022 1225

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		87	79-119
Dibromofluoromethane		97	78-119
1,2-Dichloroethane-d4		96	71-136
Toluene-d8		92	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ47032-002
Batch: 47032
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035 High

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	2500	2500		1	100	77-123	07/05/2022 1201

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		95	79-119
Dibromofluoromethane		90	78-119
1,2-Dichloroethane-d4		88	71-136
Toluene-d8		96	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ47052-001
Batch: 47052
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	16	U	1	20	16	8.0	ug/kg	07/05/2022 1036
Benzene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Bromodichloromethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Bromoform	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Bromomethane (Methyl bromide)	6.0	U	1	10	6.0	3.0	ug/kg	07/05/2022 1036
2-Butanone (MEK)	8.0	U	1	20	8.0	4.0	ug/kg	07/05/2022 1036
Carbon disulfide	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Carbon tetrachloride	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Chlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Chloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Chloroform	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Chloromethane (Methyl chloride)	6.0	U	1	10	6.0	3.0	ug/kg	07/05/2022 1036
Cyclohexane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
1,2-Dibromo-3-chloropropane (DBCP)	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Dibromochloromethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
1,2-Dibromoethane (EDB)	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
1,2-Dichlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
1,3-Dichlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
1,4-Dichlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Dichlorodifluoromethane	6.0	U	1	10	6.0	3.0	ug/kg	07/05/2022 1036
1,1-Dichloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
1,2-Dichloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
1,1-Dichloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
cis-1,2-Dichloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
trans-1,2-Dichloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
1,2-Dichloropropane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
cis-1,3-Dichloropropene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
trans-1,3-Dichloropropene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Ethylbenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
2-Hexanone	8.0	U	1	10	8.0	4.0	ug/kg	07/05/2022 1036
Isopropylbenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Methyl acetate	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Methyl tertiary butyl ether (MTBE)	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
4-Methyl-2-pentanone	8.0	U	1	10	8.0	4.0	ug/kg	07/05/2022 1036
Methylcyclohexane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Methylene chloride	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Styrene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
1,1,2,2-Tetrachloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Tetrachloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Toluene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
1,1,2-Trichloro-1,2,2-Trifluoroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
1,2,4-Trichlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
1,1,1-Trichloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
1,1,2-Trichloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ47052-001
Batch: 47052
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Trichlorofluoromethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Vinyl chloride	6.0	U	1	10	6.0	3.0	ug/kg	07/05/2022 1036
Xylenes (total)	8.0	U	1	10	8.0	4.0	ug/kg	07/05/2022 1036

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		97	79-119
Dibromofluoromethane		93	78-119
1,2-Dichloroethane-d4		98	71-136
Toluene-d8		99	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ47052-002
Batch: 47052
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	96		1	96	36-164	07/05/2022 1011
Benzene	50	48		1	97	77-121	07/05/2022 1011
Bromodichloromethane	50	48		1	96	75-127	07/05/2022 1011
Bromoform	50	50		1	101	67-132	07/05/2022 1011
Bromomethane (Methyl bromide)	50	44		1	88	53-143	07/05/2022 1011
2-Butanone (MEK)	100	97		1	97	51-148	07/05/2022 1011
Carbon disulfide	50	46		1	91	63-132	07/05/2022 1011
Carbon tetrachloride	50	48		1	95	70-135	07/05/2022 1011
Chlorobenzene	50	50		1	100	79-120	07/05/2022 1011
Chloroethane	50	45		1	91	59-139	07/05/2022 1011
Chloroform	50	45		1	91	78-123	07/05/2022 1011
Chloromethane (Methyl chloride)	50	47		1	94	50-136	07/05/2022 1011
Cyclohexane	50	46		1	92	67-131	07/05/2022 1011
1,2-Dibromo-3-chloropropane (DBCP)	50	49		1	99	61-132	07/05/2022 1011
Dibromochloromethane	50	51		1	102	75-127	07/05/2022 1011
1,2-Dibromoethane (EDB)	50	52		1	104	78-122	07/05/2022 1011
1,2-Dichlorobenzene	50	51		1	101	78-121	07/05/2022 1011
1,3-Dichlorobenzene	50	50		1	100	77-121	07/05/2022 1011
1,4-Dichlorobenzene	50	49		1	98	75-120	07/05/2022 1011
Dichlorodifluoromethane	50	50		1	100	29-149	07/05/2022 1011
1,1-Dichloroethane	50	44		1	89	76-125	07/05/2022 1011
1,2-Dichloroethane	50	46		1	92	73-128	07/05/2022 1011
1,1-Dichloroethene	50	46		1	93	70-131	07/05/2022 1011
cis-1,2-Dichloroethene	50	45		1	91	77-123	07/05/2022 1011
trans-1,2-Dichloroethene	50	46		1	93	74-125	07/05/2022 1011
1,2-Dichloropropane	50	47		1	94	76-123	07/05/2022 1011
cis-1,3-Dichloropropene	50	48		1	97	74-126	07/05/2022 1011
trans-1,3-Dichloropropene	50	52		1	103	71-130	07/05/2022 1011
Ethylbenzene	50	50		1	101	76-122	07/05/2022 1011
2-Hexanone	100	110		1	105	53-145	07/05/2022 1011
Isopropylbenzene	50	49		1	97	68-134	07/05/2022 1011
Methyl acetate	50	47		1	94	53-144	07/05/2022 1011
Methyl tertiary butyl ether (MTBE)	50	46		1	91	73-125	07/05/2022 1011
4-Methyl-2-pentanone	100	98		1	98	65-135	07/05/2022 1011
Methylcyclohexane	50	50		1	99	66-133	07/05/2022 1011
Methylene chloride	50	44		1	88	70-128	07/05/2022 1011
Styrene	50	51		1	102	76-124	07/05/2022 1011
1,1,2,2-Tetrachloroethane	50	50		1	100	70-124	07/05/2022 1011
Tetrachloroethene	50	52		1	104	73-128	07/05/2022 1011
Toluene	50	48		1	97	77-121	07/05/2022 1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	48		1	96	66-136	07/05/2022 1011
1,2,4-Trichlorobenzene	50	47		1	94	67-129	07/05/2022 1011
1,1,1-Trichloroethane	50	46		1	92	73-130	07/05/2022 1011
1,1,2-Trichloroethane	50	51		1	102	78-121	07/05/2022 1011

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ47052-002
Batch: 47052
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	49		1	97	77-123	07/05/2022 1011
Trichlorofluoromethane	50	48		1	95	62-140	07/05/2022 1011
Vinyl chloride	50	45		1	91	56-135	07/05/2022 1011
Xylenes (total)	100	100		1	101	78-124	07/05/2022 1011

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		94	79-119
Dibromofluoromethane		88	78-119
1,2-Dichloroethane-d4		94	71-136
Toluene-d8		92	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MS

Sample ID: XF24009-006MS
Batch: 47052
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Sample Amount (ug/kg)	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	19	110	78		1	52	36-164	07/05/2022 2030
Benzene	ND	56	55		1	98	77-121	07/05/2022 2030
Bromodichloromethane	ND	56	54		1	96	75-127	07/05/2022 2030
Bromoform	ND	56	59		1	104	67-132	07/05/2022 2030
Bromomethane (Methyl bromide)	ND	56	55		1	97	53-143	07/05/2022 2030
2-Butanone (MEK)	ND	110	92		1	82	51-148	07/05/2022 2030
Carbon disulfide	ND	56	57		1	101	63-132	07/05/2022 2030
Carbon tetrachloride	ND	56	57		1	101	70-135	07/05/2022 2030
Chlorobenzene	ND	56	55		1	98	79-120	07/05/2022 2030
Chloroethane	ND	56	55		1	98	59-139	07/05/2022 2030
Chloroform	ND	56	55		1	97	78-123	07/05/2022 2030
Chloromethane (Methyl chloride)	ND	56	56		1	99	50-136	07/05/2022 2030
Cyclohexane	ND	56	56		1	99	67-131	07/05/2022 2030
1,2-Dibromo-3-chloropropane (DBCP)	ND	56	58		1	102	61-132	07/05/2022 2030
Dibromochloromethane	ND	56	55		1	97	75-127	07/05/2022 2030
1,2-Dibromoethane (EDB)	ND	56	58		1	103	78-122	07/05/2022 2030
1,2-Dichlorobenzene	ND	56	51		1	91	78-121	07/05/2022 2030
1,3-Dichlorobenzene	ND	56	51		1	91	77-121	07/05/2022 2030
1,4-Dichlorobenzene	ND	56	51		1	90	75-120	07/05/2022 2030
Dichlorodifluoromethane	ND	56	63		1	112	29-149	07/05/2022 2030
1,1-Dichloroethane	ND	56	54		1	96	76-125	07/05/2022 2030
1,2-Dichloroethane	ND	56	55		1	97	73-128	07/05/2022 2030
1,1-Dichloroethene	ND	56	54		1	96	70-131	07/05/2022 2030
cis-1,2-Dichloroethene	ND	56	54		1	96	77-123	07/05/2022 2030
trans-1,2-Dichloroethene	ND	56	55		1	98	74-125	07/05/2022 2030
1,2-Dichloropropane	ND	56	55		1	98	76-123	07/05/2022 2030
cis-1,3-Dichloropropene	ND	56	55		1	97	74-126	07/05/2022 2030
trans-1,3-Dichloropropene	ND	56	57		1	101	71-130	07/05/2022 2030
Ethylbenzene	ND	56	56		1	99	76-122	07/05/2022 2030
2-Hexanone	ND	110	110		1	100	53-145	07/05/2022 2030
Isopropylbenzene	ND	56	55		1	98	68-134	07/05/2022 2030
Methyl acetate	ND	56	100	N	1	185	53-144	07/05/2022 2030
Methyl tertiary butyl ether (MTBE)	ND	56	52		1	93	73-125	07/05/2022 2030
4-Methyl-2-pentanone	ND	110	120		1	109	65-135	07/05/2022 2030
Methylcyclohexane	ND	56	59		1	104	66-133	07/05/2022 2030
Methylene chloride	ND	56	54		1	95	70-128	07/05/2022 2030
Styrene	ND	56	57		1	101	76-124	07/05/2022 2030
1,1,2,2-Tetrachloroethane	ND	56	57		1	101	70-124	07/05/2022 2030
Tetrachloroethene	14	56	80		1	116	73-128	07/05/2022 2030
Toluene	ND	56	54		1	97	77-121	07/05/2022 2030
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	56	57		1	102	66-136	07/05/2022 2030
1,2,4-Trichlorobenzene	ND	56	48		1	84	67-129	07/05/2022 2030
1,1,1-Trichloroethane	ND	56	56		1	99	73-130	07/05/2022 2030
1,1,2-Trichloroethane	ND	56	56		1	100	78-121	07/05/2022 2030

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MS

Sample ID: XF24009-006MS
Batch: 47052
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Sample Amount (ug/kg)	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	13	56	74		1	108	77-123	07/05/2022 2030
Trichlorofluoromethane	ND	56	60		1	106	62-140	07/05/2022 2030
Vinyl chloride	ND	56	54		1	96	56-135	07/05/2022 2030
Xylenes (total)	ND	110	110		1	100	78-124	07/05/2022 2030

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		112	79-119
Dibromofluoromethane		100	78-119
1,2-Dichloroethane-d4		102	71-136
Toluene-d8		105	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XF24009-006MD
Batch: 47052
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Sample Amount (ug/kg)	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acetone	19	110	68		1	45	13	36-164	20	07/05/2022 2054
Benzene	ND	54	42	+	1	78	27	77-121	20	07/05/2022 2054
Bromodichloromethane	ND	54	46		1	85	16	75-127	20	07/05/2022 2054
Bromoform	ND	54	51		1	95	13	67-132	20	07/05/2022 2054
Bromomethane (Methyl bromide)	ND	54	53		1	98	2.9	53-143	20	07/05/2022 2054
2-Butanone (MEK)	ND	110	73	+	1	67	23	51-148	20	07/05/2022 2054
Carbon disulfide	ND	54	39	+	1	73	37	63-132	20	07/05/2022 2054
Carbon tetrachloride	ND	54	38	+	1	70	40	70-135	20	07/05/2022 2054
Chlorobenzene	ND	54	44	+	1	82	23	79-120	20	07/05/2022 2054
Chloroethane	ND	54	46		1	85	18	59-139	20	07/05/2022 2054
Chloroform	ND	54	44	+	1	80	23	78-123	20	07/05/2022 2054
Chloromethane (Methyl chloride)	ND	54	49		1	90	13	50-136	20	07/05/2022 2054
Cyclohexane	ND	54	36	+	1	67	42	67-131	20	07/05/2022 2054
1,2-Dibromo-3-chloropropane (DBCP)	ND	54	49		1	90	17	61-132	20	07/05/2022 2054
Dibromochloromethane	ND	54	49		1	91	11	75-127	20	07/05/2022 2054
1,2-Dibromoethane (EDB)	ND	54	50		1	92	15	78-122	20	07/05/2022 2054
1,2-Dichlorobenzene	ND	54	45		1	84	12	78-121	20	07/05/2022 2054
1,3-Dichlorobenzene	ND	54	43		1	79	18	77-121	20	07/05/2022 2054
1,4-Dichlorobenzene	ND	54	43		1	80	16	75-120	20	07/05/2022 2054
Dichlorodifluoromethane	ND	54	46	+	1	85	31	29-149	20	07/05/2022 2054
1,1-Dichloroethane	ND	54	42	+	1	77	26	76-125	20	07/05/2022 2054
1,2-Dichloroethane	ND	54	49		1	90	12	73-128	20	07/05/2022 2054
1,1-Dichloroethene	ND	54	36	N,+	1	67	40	70-131	20	07/05/2022 2054
cis-1,2-Dichloroethene	ND	54	44	+	1	80	21	77-123	20	07/05/2022 2054
trans-1,2-Dichloroethene	ND	54	40	+	1	74	32	74-125	20	07/05/2022 2054
1,2-Dichloropropane	ND	54	46		1	84	19	76-123	20	07/05/2022 2054
cis-1,3-Dichloropropene	ND	54	48		1	88	13	74-126	20	07/05/2022 2054
trans-1,3-Dichloropropene	ND	54	50		1	93	13	71-130	20	07/05/2022 2054
Ethylbenzene	ND	54	42	+	1	78	28	76-122	20	07/05/2022 2054
2-Hexanone	ND	110	94		1	87	18	53-145	20	07/05/2022 2054
Isopropylbenzene	ND	54	43	+	1	79	25	68-134	20	07/05/2022 2054
Methyl acetate	ND	54	78	+	1	144	29	53-144	20	07/05/2022 2054
Methyl tertiary butyl ether (MTBE)	ND	54	48		1	89	8.5	73-125	20	07/05/2022 2054
4-Methyl-2-pentanone	ND	110	100		1	96	17	65-135	20	07/05/2022 2054
Methylcyclohexane	ND	54	41	+	1	75	36	66-133	20	07/05/2022 2054
Methylene chloride	ND	54	46		1	86	14	70-128	20	07/05/2022 2054
Styrene	ND	54	46	+	1	85	21	76-124	20	07/05/2022 2054
1,1,2,2-Tetrachloroethane	ND	54	52		1	96	8.7	70-124	20	07/05/2022 2054
Tetrachloroethene	14	54	61	+	1	86	26	73-128	20	07/05/2022 2054
Toluene	ND	54	42	+	1	78	25	77-121	20	07/05/2022 2054
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	54	38	+	1	70	41	66-136	20	07/05/2022 2054
1,2,4-Trichlorobenzene	ND	54	40		1	73	18	67-129	20	07/05/2022 2054
1,1,1-Trichloroethane	ND	54	38	N,+	1	70	38	73-130	20	07/05/2022 2054
1,1,2-Trichloroethane	ND	54	50		1	93	12	78-121	20	07/05/2022 2054

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XF24009-006MD
Batch: 47052
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Sample Amount (ug/kg)	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Trichloroethene	13	54	52	N,+	1	71	35	77-123	20	07/05/2022 2054
Trichlorofluoromethane	ND	54	43	+	1	80	32	62-140	20	07/05/2022 2054
Vinyl chloride	ND	54	41	+	1	76	27	56-135	20	07/05/2022 2054
Xylenes (total)	ND	110	87	+	1	81	26	78-124	20	07/05/2022 2054

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		110	79-119
Dibromofluoromethane		103	78-119
1,2-Dichloroethane-d4		99	71-136
Toluene-d8		108	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Chain of Custody
and
Miscellaneous Documents

Pace Analytical®

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Telephone No. 803-791-9700 Fax No. 803-791-9111
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Number 134604

Client: Terracon Consultants Inc
Address: 2401 Brentwood Rd.
City: Raleigh State: NC Zip Code: 27604
Project Name: T.A.M.P.
Project No.: 7021P145
P.O. No.:

Report to Contact: Ethan Dinwiddie
Sampler's Signature: X [signature]
Printed Name: Ethan Dinwiddie

Telephone No. / E-mail: (828)-550-5502 / ethan.dinwiddie@terracon.com
Analysis (Attach list if more space is needed)

Quote No.: 25322
Page 1 of 2
XF24009
cad

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	Grab G=Composite	Matrix: Aq-Water	Matrix: Solid	Matrix: Wet Analysis	No of Containers by Preservative Type: Unpres.	H2SO4	HNO3	HCl	NaOH	Solid Ice	Field Filtered	VOCs 8260	Remarks / Cooler I.D.
~~RI-SB-12 (2-4)~~	~~6/21~~	~~1420~~	~~G~~		~~X~~		~~1~~					~~1~~		~~X~~	
RI-SB-13 (2-4)	6/22	930	G		X		1					1		X	
RI-SB-13 (4-6)	6/22	935	G		X		1					1		X	
RI-SB-13 (10-12	6/22	940	G		X		1					1		X	
RI-SB-14 (0-2)	6/21	1715	G	~~X~~	X		1					1		X	
RI-SB-14 (10-12)	↓	1730	G	~~X~~	X		1					1		X	
RI-SB-15 (2-4)	↓	1800	G	~~X~~	X		1					1		X	
RI-SB-15 (12-14)	↓	1815	G	~~X~~	X		1					1		X	
FB-01	6/22	900	G	X			~~1~~			3				X	
TB-03	6/22	—	G	X						2				X	

Turn Around Time Required (Prior lab approval required for expedited TAT.) ☒ Standard ☐ Rush (Specify)

Sample Disposal: ☐ Return to Client ☒ Disposal by Lab

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☒ Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by [signature]	6/23	1700	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by Fed Ex	6-24-22	0940	4. Laboratory received by [signature]	6-24-22	0940

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on ice (Circle) Yes No Ice Pack
Receipt Temp. 5.3 °C
Temp Blank ☒ Y ☐ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME003N2-01

Pace Analytical®

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106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.pacelabs.com

Number 134603

Client: Terracon Consultants Inc	Report to Contact: Ethan Dinwiddie	Telephone No. / E-mail: (828)-550-5502 / ethan.dinwiddie@terracon.com	Quote No. 25322
Address: 2401 Brentwood Rd.	Sampler's Signature: x [signature]	Analysis (Attach list if more space is needed)	Page 2 of 2
City: Raleigh State: NC Zip Code: 27604	Printed Name: Ethan Dinwiddie		XF24009
Project Name: T.A.M.P.			CSE
Project No.: 7021P145	P.O. No.		

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	G-Grab C-Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	No of Containers by Preservative Type: Unpres.	HCl	NaOH	HNO3	NaOH	5035 NH	Field Filtered	VOCs 8260	Remarks / Cooler I.D.
RI-SB-16 (0-2)	6/22	1055	G		X		1					1		X	
RI-SB-16 (4-6)	↓	1050	G		X		1					1		X	
DUP-SB-02	↓	—	G		X		1					1		X	

Turn Around Time Required (Prior lab approval required for expedited TAT.): X Standard ☐ Rush (Specify)

Sample Disposal: ☐ Return to Client X Disposal by Lab

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison X Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by [signature]	6/23	1700	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by FedEx	6-24-22	0940	4. Laboratory received by [signature]	6-24-22	0940

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on ice (Circle) Yes No Ice Pack
Receipt Temp. 5.3 °C
Temp Blank ☑ Y ☐ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME003N2-01

PaceAnalytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: TERRACON Cooler Inspected by/date: TEC / 06/24/2022 Lot #: XF24009

Means of receipt: ☐ Pace ☐ Client ☐ UPS ☑ FedEx ☐ Other:

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

5.3 / 5.3 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 6 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☑ Yes	☐ No	☐ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☐ No	☑ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote #

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA. Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L. (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA

SR barcode labels applied by: TEC Date: 06/24/2022

Comments:

Report of Analysis

Terracon Consultants, Inc.
2401 Brentwood Road
Suite 107 I
Raleigh, NC 27604
Attention: Ethan Dinwiddie

Project Name: TAMP

Project Number: 7021P145

Lot Number:**XF27007**

Date Completed:07/11/2022

07/21/2022 11:24 PM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.
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Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
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Case Narrative
Terracon Consultants, Inc.
Lot Number: XF27007

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Additionally, the DoD QSM version 5.3 has been followed for these samples. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs, the DoD QSM, or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

Where applicable, all soil sample results (including LOQ and DL if requested) are corrected for dry weight unless flagged with a "W" qualifier.

VOA 8260D

The closing continuing calibration verification (CCV) associated with sample XF27007-010 (TB-04) for Vinyl Chloride recovered above the upper control limit. The sample associated with this CCV was non-detect for the affected analytes; therefore, the data has been reported

The continuing calibration verification (CCV) associated with sample XF27007-010 (TB-04) for analytes: Dichlorodifluoromethane, Chloromethane, Vinyl Chloride, Bromomethane and 2-Butanone recovered above the upper control limit. The samples associated with this CCV were non-detect for the affected analytes; therefore, the data has been reported.

The laboratory control sample (LCS) for analytical batch 46461 exceeded acceptance criteria for the following analytes: Dichlorodifluoromethane, Chloromethane, Vinyl Chloride. These analytes were biased high and were not detected in the associated sample: XF27007-010 (TB-04).

Sample XF27007-010 (TB-04) had an air bubble > 6mm in the sample vial.

Insufficient sample volume was provided to perform matrix spike/matrix spike duplicate (MS/MSD) for analytical batch 46981. An LCS/LCSD was run in lieu of an MS/MSD.

Surrogate recovery for the following samples was outside of acceptance limits for: XF27007-003 (R1-SB-17 (4-6)), XF27007-004 (R1-SB-17 (6-8)), and XF27007-005 (R1-SB-17 (8-10)). These samples required 20x to 400x dilutions and the surrogates were affected. The data has been reported.

The laboratory control sample (LCS) for analytical batch 46980 exceeded acceptance criteria for the following analytes: Dichlorodifluoromethane (165%), Chloromethane (140%), Vinyl Chloride (154%), Freon 113 (137%), and Methylcyclohexane (135%). These analytes were biased high and were not detected in the associated samples: XF27007-003, XF27007-004, XF27007-005, XF27007-008, XF27007-009, and XF27007-011.

XF27007-003 (R1-SB-17 (4-6)) (Run 1) (Analysis Batch 46980) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF27007-004 (R1-SB-17 (6-8)) (Run 1) (Analysis Batch 46980) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF27007-005 (R1-SB-17 (8-10)) (Run 1) (Analysis Batch 46980) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF27007-008 (R1-SB-19 (2-4)) (Run 1) (Analysis Batch 46980) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF27007-009 (R1-SB-19 (6-8)) (Run 1) (Analysis Batch 46980) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF27007-011 (DUP-SB-03) (Run 1) (Analysis Batch 46980) TCL VOCs (OLM04.3) (DOD QSM 5.3)

Trichloroethene was reported as an estimated value in sample XF27007-007 (R1-SB-18 (6-8)) as the result was above the upper calibration level. The sample was re-analyzed from the medium level (methanol) vial, but was not reported due to the result being below the LOQ therefore only the low level was reported.

The laboratory control sample (LCS) for analytical batch 47133 exceeded acceptance criteria for the following analytes: Dichlorodifluoromethane, Chloromethane, Vinyl Chloride, Freon 113, and Methylcyclohexane. These analytes were biased high and were not detected in the associated sample XF27007-011 (DUP-SB-03).

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Sample Summary

Terracon Consultants, Inc.

Lot Number: XF27007

Project Name: TAMP

Project Number: 7021P145

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	R1-SB-17 (0-2)	Solid	06/22/2022 1205	06/27/2022
002	R1-SB-17 (2.4)	Solid	06/22/2022 1210	06/27/2022
003	R1-SB-17 (4-6)	Solid	06/22/2022 1215	06/27/2022
004	R1-SB-17 (6-8)	Solid	06/22/2022 1220	06/27/2022
005	R1-SB-17 (8-10)	Solid	06/22/2022 1225	06/27/2022
006	R1-SB-18 (2-4)	Solid	06/22/2022 1335	06/27/2022
007	R1-SB-18 (6-8)	Solid	06/22/2022 1340	06/27/2022
008	R1-SB-19 (2-4)	Solid	06/22/2022 1435	06/27/2022
009	R1-SB-19 (6-8)	Solid	06/22/2022 1440	06/27/2022
010	TB-04	Aqueous	06/22/2022	06/27/2022
011	DUP-SB-03	Solid	06/22/2022	06/27/2022

(11 samples)

Detection Summary

Terracon Consultants, Inc.

Lot Number: XF27007

Project Name: TAMP

Project Number: 7021P145

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	R1-SB-17 (0-2)	Solid	Acetone	8260D	26	J	ug/kg	6
001	R1-SB-17 (0-2)	Solid	Tetrachloroethene	8260D	5.1	J	ug/kg	6
001	R1-SB-17 (0-2)	Solid	Trichloroethene	8260D	180		ug/kg	7
002	R1-SB-17 (2.4)	Solid	Acetone	8260D	37		ug/kg	8
002	R1-SB-17 (2.4)	Solid	cis-1,2-Dichloroethene	8260D	3.2	J	ug/kg	8
002	R1-SB-17 (2.4)	Solid	Trichloroethene	8260D	12000		ug/kg	9
003	R1-SB-17 (4-6)	Solid	Trichloroethene	8260D	6900000	Q	ug/kg	11
004	R1-SB-17 (6-8)	Solid	Trichloroethene	8260D	190000	Q	ug/kg	13
005	R1-SB-17 (8-10)	Solid	Trichloroethene	8260D	670000	Q	ug/kg	15
006	R1-SB-18 (2-4)	Solid	Acetone	8260D	10	J	ug/kg	16
006	R1-SB-18 (2-4)	Solid	cis-1,2-Dichloroethene	8260D	11		ug/kg	16
006	R1-SB-18 (2-4)	Solid	Trichloroethene	8260D	110		ug/kg	17
007	R1-SB-18 (6-8)	Solid	cis-1,2-Dichloroethene	8260D	19		ug/kg	18
007	R1-SB-18 (6-8)	Solid	Trichloroethene	8260D	350	E	ug/kg	19
008	R1-SB-19 (2-4)	Solid	Trichloroethene	8260D	1800		ug/kg	21
009	R1-SB-19 (6-8)	Solid	Trichloroethene	8260D	11000		ug/kg	23
011	DUP-SB-03	Solid	Trichloroethene	8260D	47000		ug/kg	27

(17 detections)

Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF27007-001**	
Description: **R1-SB-17 (0-2)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1205**	Project Name: **TAMP**	% Solids: **78.2**	**06/27/2022 1806**
Date Received: **06/27/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	07/04/2022 1919	JM1		46981

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**26**	**J**	**29**	23	**12**	**ug/kg**	**1**
Benzene	71-43-2	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
Bromodichloromethane	75-27-4	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
Bromoform	75-25-2	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	9.0	U	15	9.0	4.4	ug/kg	1
2-Butanone (MEK)	78-93-3	8260D	12	U	29	12	5.9	ug/kg	1
Carbon disulfide	75-15-0	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
Carbon tetrachloride	56-23-5	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
Chlorobenzene	108-90-7	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
Chloroethane	75-00-3	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
Chloroform	67-66-3	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	9.0	U	15	9.0	4.4	ug/kg	1
Cyclohexane	110-82-7	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
Dibromochloromethane	124-48-1	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260D	9.0	U	15	9.0	4.4	ug/kg	1
1,1-Dichloroethane	75-34-3	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
1,2-Dichloroethane	107-06-2	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
1,1-Dichloroethene	75-35-4	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
1,2-Dichloropropane	78-87-5	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
Ethylbenzene	100-41-4	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
2-Hexanone	591-78-6	8260D	12	U	15	12	5.9	ug/kg	1
Isopropylbenzene	98-82-8	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
Methyl acetate	79-20-9	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260D	12	U	15	12	5.9	ug/kg	1
Methylcyclohexane	108-87-2	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
Methylene chloride	75-09-2	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
Styrene	100-42-5	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
Tetrachloroethene	**127-18-4**	**8260D**	**5.1**	**J**	**7.3**	5.8	**2.9**	**ug/kg**	**1**
Toluene	108-88-3	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF27007-001**	
Description: **R1-SB-17 (0-2)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1205**	Project Name: **TAMP**	% Solids: **78.2**	**06/27/2022 1806**
Date Received: **06/27/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	07/04/2022 1919	JM1		46981

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**180**		**7.3**	5.8	**2.9**	**ug/kg**	**1**
Trichlorofluoromethane	75-69-4	8260D	5.8	U	7.3	5.8	2.9	ug/kg	1
Vinyl chloride	75-01-4	8260D	9.0	U	15	9.0	4.4	ug/kg	1
Xylenes (total)	1330-20-7	8260D	12	U	15	12	5.9	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		97	79-119
Dibromofluoromethane		99	78-119
1,2-Dichloroethane-d4		98	71-136
Toluene-d8		108	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF27007-002**	
Description: **R1-SB-17 (2.4)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1210**	Project Name: **TAMP**	% Solids: **75.4**	**06/27/2022 1806**
Date Received: **06/27/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260D	1	07/04/2022 1942	JM1		46981	
2	5035 High	8260D	1	07/06/2022 1259	JM1		47077	5.01

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**37**		**24**	19	**9.7**	**ug/kg**	**1**
Benzene	71-43-2	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
Bromodichloromethane	75-27-4	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
Bromoform	75-25-2	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	7.2	U	12	7.2	3.6	ug/kg	1
2-Butanone (MEK)	78-93-3	8260D	9.6	U	24	9.6	4.9	ug/kg	1
Carbon disulfide	75-15-0	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
Carbon tetrachloride	56-23-5	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
Chlorobenzene	108-90-7	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
Chloroethane	75-00-3	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
Chloroform	67-66-3	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	7.2	U	12	7.2	3.6	ug/kg	1
Cyclohexane	110-82-7	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
Dibromochloromethane	124-48-1	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260D	7.2	U	12	7.2	3.6	ug/kg	1
1,1-Dichloroethane	75-34-3	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
1,2-Dichloroethane	107-06-2	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
1,1-Dichloroethene	75-35-4	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**3.2**	**J**	**6.1**	4.9	**2.4**	**ug/kg**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
1,2-Dichloropropane	78-87-5	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
Ethylbenzene	100-41-4	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
2-Hexanone	591-78-6	8260D	9.6	U	12	9.6	4.9	ug/kg	1
Isopropylbenzene	98-82-8	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
Methyl acetate	79-20-9	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260D	9.6	U	12	9.6	4.9	ug/kg	1
Methylcyclohexane	108-87-2	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
Methylene chloride	75-09-2	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
Styrene	100-42-5	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
Tetrachloroethene	127-18-4	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
Toluene	108-88-3	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF27007-002**	
Description: **R1-SB-17 (2.4)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1210**	Project Name: **TAMP**	% Solids: **75.4**	**06/27/2022 1806**
Date Received: **06/27/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260D	1	07/04/2022 1942	JM1		46981	
2	5035 High	8260D	1	07/06/2022 1259	JM1		47077	5.01

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
Trichloroethene	**79-01-6**	**8260D**	**12000**		**410**	330	**160**	**ug/kg**	**2**
Trichlorofluoromethane	75-69-4	8260D	4.9	U	6.1	4.9	2.4	ug/kg	1
Vinyl chloride	75-01-4	8260D	7.2	U	12	7.2	3.6	ug/kg	1
Xylenes (total)	1330-20-7	8260D	9.6	U	12	9.6	4.9	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		99	79-119		111	79-119
Dibromofluoromethane		102	78-119		113	78-119
1,2-Dichloroethane-d4		100	71-136		114	71-136
Toluene-d8		105	85-116		116	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**			Laboratory ID: **XF27007-003**
Description: **R1-SB-17 (4-6)**			Matrix: **Solid**
Date Sampled: **06/22/2022 1215**	Project Name: **TAMP**		% Solids: **65.5** **06/27/2022 1806**
Date Received: **06/27/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035 High	8260D	400	07/04/2022 1606	JM1		46980	5.47

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	620000	UQ	770000	620000	310000	ug/kg	1
Benzene	71-43-2	8260D	150000	UQ	190000	150000	77000	ug/kg	1
Bromodichloromethane	75-27-4	8260D	150000	UQ	190000	150000	77000	ug/kg	1
Bromoform	75-25-2	8260D	150000	UQ	190000	150000	77000	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	230000	UQ	380000	230000	120000	ug/kg	1
2-Butanone (MEK)	78-93-3	8260D	310000	UQ	770000	310000	150000	ug/kg	1
Carbon disulfide	75-15-0	8260D	150000	UQ	190000	150000	77000	ug/kg	1
Carbon tetrachloride	56-23-5	8260D	150000	UQ	190000	150000	77000	ug/kg	1
Chlorobenzene	108-90-7	8260D	150000	UQ	190000	150000	77000	ug/kg	1
Chloroethane	75-00-3	8260D	150000	UQ	190000	150000	77000	ug/kg	1
Chloroform	67-66-3	8260D	150000	UQ	190000	150000	77000	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	230000	UQL	380000	230000	120000	ug/kg	1
Cyclohexane	110-82-7	8260D	150000	UQ	190000	150000	77000	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	150000	UQ	190000	150000	77000	ug/kg	1
Dibromochloromethane	124-48-1	8260D	150000	UQ	190000	150000	77000	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	150000	UQ	190000	150000	77000	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260D	150000	UQ	190000	150000	77000	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260D	150000	UQ	190000	150000	77000	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260D	150000	UQ	190000	150000	77000	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260D	230000	UQL	380000	230000	120000	ug/kg	1
1,1-Dichloroethane	75-34-3	8260D	150000	UQ	190000	150000	77000	ug/kg	1
1,2-Dichloroethane	107-06-2	8260D	150000	UQ	190000	150000	77000	ug/kg	1
1,1-Dichloroethene	75-35-4	8260D	150000	UQ	190000	150000	77000	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	150000	UQ	190000	150000	77000	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	150000	UQ	190000	150000	77000	ug/kg	1
1,2-Dichloropropane	78-87-5	8260D	150000	UQ	190000	150000	77000	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	150000	UQ	190000	150000	77000	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	150000	UQ	190000	150000	77000	ug/kg	1
Ethylbenzene	100-41-4	8260D	150000	UQ	190000	150000	77000	ug/kg	1
2-Hexanone	591-78-6	8260D	300000	UQ	380000	300000	150000	ug/kg	1
Isopropylbenzene	98-82-8	8260D	150000	UQ	190000	150000	77000	ug/kg	1
Methyl acetate	79-20-9	8260D	150000	UQ	190000	150000	77000	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	150000	UQ	190000	150000	77000	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260D	300000	UQ	380000	300000	150000	ug/kg	1
Methylcyclohexane	108-87-2	8260D	150000	UQL	190000	150000	77000	ug/kg	1
Methylene chloride	75-09-2	8260D	150000	UQ	190000	150000	77000	ug/kg	1
Styrene	100-42-5	8260D	150000	UQ	190000	150000	77000	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	150000	UQ	190000	150000	77000	ug/kg	1
Tetrachloroethene	127-18-4	8260D	150000	UQ	190000	150000	77000	ug/kg	1
Toluene	108-88-3	8260D	150000	UQ	190000	150000	77000	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	150000	UQL	190000	150000	77000	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	150000	UQ	190000	150000	77000	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260D	150000	UQ	190000	150000	77000	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260D	150000	UQ	190000	150000	77000	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**			Laboratory ID: **XF27007-003**
Description: **R1-SB-17 (4-6)**			Matrix: **Solid**
Date Sampled: **06/22/2022 1215**	Project Name: **TAMP**		% Solids: **65.5** **06/27/2022 1806**
Date Received: **06/27/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035 High	8260D	400	07/04/2022 1606	JM1		46980	5.47

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**6900000**	**Q**	**190000**	150000	**77000**	**ug/kg**	**1**
Trichlorofluoromethane	75-69-4	8260D	150000	UQ	190000	150000	77000	ug/kg	1
Vinyl chloride	75-01-4	8260D	230000	UQL	380000	230000	120000	ug/kg	1
Xylenes (total)	1330-20-7	8260D	300000	UQ	380000	300000	150000	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene	N	1870	79-119
Dibromofluoromethane	N	507	78-119
1,2-Dichloroethane-d4	N	716	71-136
Toluene-d8	N	1180	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF27007-004**	
Description: **R1-SB-17 (6-8)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1220**	Project Name: **TAMP**	% Solids: **73.1**	**06/27/2022 1806**
Date Received: **06/27/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035 High	8260D	20	07/04/2022 1630	JM1		46980	5.82

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	25000	UQ	31000	25000	12000	ug/kg	1
Benzene	71-43-2	8260D	6200	UQ	7700	6200	3100	ug/kg	1
Bromodichloromethane	75-27-4	8260D	6200	UQ	7700	6200	3100	ug/kg	1
Bromoform	75-25-2	8260D	6200	UQ	7700	6200	3100	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	9000	UQ	15000	9000	4600	ug/kg	1
2-Butanone (MEK)	78-93-3	8260D	12000	UQ	31000	12000	6200	ug/kg	1
Carbon disulfide	75-15-0	8260D	6200	UQ	7700	6200	3100	ug/kg	1
Carbon tetrachloride	56-23-5	8260D	6200	UQ	7700	6200	3100	ug/kg	1
Chlorobenzene	108-90-7	8260D	6200	UQ	7700	6200	3100	ug/kg	1
Chloroethane	75-00-3	8260D	6200	UQ	7700	6200	3100	ug/kg	1
Chloroform	67-66-3	8260D	6200	UQ	7700	6200	3100	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	9000	UQL	15000	9000	4600	ug/kg	1
Cyclohexane	110-82-7	8260D	6200	UQ	7700	6200	3100	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	6200	UQ	7700	6200	3100	ug/kg	1
Dibromochloromethane	124-48-1	8260D	6200	UQ	7700	6200	3100	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	6200	UQ	7700	6200	3100	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260D	6200	UQ	7700	6200	3100	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260D	6200	UQ	7700	6200	3100	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260D	6200	UQ	7700	6200	3100	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260D	9000	UQL	15000	9000	4600	ug/kg	1
1,1-Dichloroethane	75-34-3	8260D	6200	UQ	7700	6200	3100	ug/kg	1
1,2-Dichloroethane	107-06-2	8260D	6200	UQ	7700	6200	3100	ug/kg	1
1,1-Dichloroethene	75-35-4	8260D	6200	UQ	7700	6200	3100	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	6200	UQ	7700	6200	3100	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	6200	UQ	7700	6200	3100	ug/kg	1
1,2-Dichloropropane	78-87-5	8260D	6200	UQ	7700	6200	3100	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	6200	UQ	7700	6200	3100	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	6200	UQ	7700	6200	3100	ug/kg	1
Ethylbenzene	100-41-4	8260D	6200	UQ	7700	6200	3100	ug/kg	1
2-Hexanone	591-78-6	8260D	12000	UQ	15000	12000	6200	ug/kg	1
Isopropylbenzene	98-82-8	8260D	6200	UQ	7700	6200	3100	ug/kg	1
Methyl acetate	79-20-9	8260D	6200	UQ	7700	6200	3100	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	6200	UQ	7700	6200	3100	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260D	12000	UQ	15000	12000	6200	ug/kg	1
Methylcyclohexane	108-87-2	8260D	6200	UQL	7700	6200	3100	ug/kg	1
Methylene chloride	75-09-2	8260D	6200	UQ	7700	6200	3100	ug/kg	1
Styrene	100-42-5	8260D	6200	UQ	7700	6200	3100	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	6200	UQ	7700	6200	3100	ug/kg	1
Tetrachloroethene	127-18-4	8260D	6200	UQ	7700	6200	3100	ug/kg	1
Toluene	108-88-3	8260D	6200	UQ	7700	6200	3100	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	6200	UQL	7700	6200	3100	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	6200	UQ	7700	6200	3100	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260D	6200	UQ	7700	6200	3100	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260D	6200	UQ	7700	6200	3100	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF27007-004**	
Description: **R1-SB-17 (6-8)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1220**	Project Name: **TAMP**	% Solids: **73.1**	**06/27/2022 1806**
Date Received: **06/27/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035 High	8260D	20	07/04/2022 1630	JM1		46980	5.82

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**190000**	**Q**	**7700**	6200	**3100**	**ug/kg**	**1**
Trichlorofluoromethane	75-69-4	8260D	6200	UQ	7700	6200	3100	ug/kg	1
Vinyl chloride	75-01-4	8260D	9000	UQL	15000	9000	4600	ug/kg	1
Xylenes (total)	1330-20-7	8260D	12000	UQ	15000	12000	6200	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene	N	130	79-119
Dibromofluoromethane		97	78-119
1,2-Dichloroethane-d4		92	71-136
Toluene-d8		108	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF27007-005**	
Description: **R1-SB-17 (8-10)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1225**	Project Name: **TAMP**	% Solids: **76.0**	**06/27/2022 1806**
Date Received: **06/27/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035 High	8260D	100	07/04/2022 1654	JM1		46980	5.94

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	110000	UQ	140000	110000	57000	ug/kg	1
Benzene	71-43-2	8260D	29000	UQ	36000	29000	14000	ug/kg	1
Bromodichloromethane	75-27-4	8260D	29000	UQ	36000	29000	14000	ug/kg	1
Bromoform	75-25-2	8260D	29000	UQ	36000	29000	14000	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	43000	UQ	71000	43000	21000	ug/kg	1
2-Butanone (MEK)	78-93-3	8260D	56000	UQ	140000	56000	28000	ug/kg	1
Carbon disulfide	75-15-0	8260D	29000	UQ	36000	29000	14000	ug/kg	1
Carbon tetrachloride	56-23-5	8260D	29000	UQ	36000	29000	14000	ug/kg	1
Chlorobenzene	108-90-7	8260D	29000	UQ	36000	29000	14000	ug/kg	1
Chloroethane	75-00-3	8260D	29000	UQ	36000	29000	14000	ug/kg	1
Chloroform	67-66-3	8260D	29000	UQ	36000	29000	14000	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	43000	UQL	71000	43000	21000	ug/kg	1
Cyclohexane	110-82-7	8260D	29000	UQ	36000	29000	14000	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	29000	UQ	36000	29000	14000	ug/kg	1
Dibromochloromethane	124-48-1	8260D	29000	UQ	36000	29000	14000	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	29000	UQ	36000	29000	14000	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260D	29000	UQ	36000	29000	14000	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260D	29000	UQ	36000	29000	14000	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260D	29000	UQ	36000	29000	14000	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260D	43000	UQL	71000	43000	21000	ug/kg	1
1,1-Dichloroethane	75-34-3	8260D	29000	UQ	36000	29000	14000	ug/kg	1
1,2-Dichloroethane	107-06-2	8260D	29000	UQ	36000	29000	14000	ug/kg	1
1,1-Dichloroethene	75-35-4	8260D	29000	UQ	36000	29000	14000	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	29000	UQ	36000	29000	14000	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	29000	UQ	36000	29000	14000	ug/kg	1
1,2-Dichloropropane	78-87-5	8260D	29000	UQ	36000	29000	14000	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	29000	UQ	36000	29000	14000	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	29000	UQ	36000	29000	14000	ug/kg	1
Ethylbenzene	100-41-4	8260D	29000	UQ	36000	29000	14000	ug/kg	1
2-Hexanone	591-78-6	8260D	57000	UQ	71000	57000	28000	ug/kg	1
Isopropylbenzene	98-82-8	8260D	29000	UQ	36000	29000	14000	ug/kg	1
Methyl acetate	79-20-9	8260D	29000	UQ	36000	29000	14000	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	29000	UQ	36000	29000	14000	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260D	57000	UQ	71000	57000	28000	ug/kg	1
Methylcyclohexane	108-87-2	8260D	29000	UQL	36000	29000	14000	ug/kg	1
Methylene chloride	75-09-2	8260D	29000	UQ	36000	29000	14000	ug/kg	1
Styrene	100-42-5	8260D	29000	UQ	36000	29000	14000	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	29000	UQ	36000	29000	14000	ug/kg	1
Tetrachloroethene	127-18-4	8260D	29000	UQ	36000	29000	14000	ug/kg	1
Toluene	108-88-3	8260D	29000	UQ	36000	29000	14000	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	29000	UQL	36000	29000	14000	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	29000	UQ	36000	29000	14000	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260D	29000	UQ	36000	29000	14000	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260D	29000	UQ	36000	29000	14000	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF27007-005**	
Description: **R1-SB-17 (8-10)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1225**	Project Name: **TAMP**	% Solids: **76.0**	**06/27/2022 1806**
Date Received: **06/27/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035 High	8260D	100	07/04/2022 1654	JM1		46980	5.94

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**670000**	**Q**	**36000**	29000	**14000**	**ug/kg**	**1**
Trichlorofluoromethane	75-69-4	8260D	29000	UQ	36000	29000	14000	ug/kg	1
Vinyl chloride	75-01-4	8260D	43000	UQL	71000	43000	21000	ug/kg	1
Xylenes (total)	1330-20-7	8260D	57000	UQ	71000	57000	28000	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene	N	263	79-119
Dibromofluoromethane		103	78-119
1,2-Dichloroethane-d4		112	71-136
Toluene-d8	N	188	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF27007-006**	
Description: **R1-SB-18 (2-4)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1335**	Project Name: **TAMP**	% Solids: **79.5**	**06/27/2022 1806**
Date Received: **06/27/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	07/04/2022 2006	JM1		46981

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**10**	**J**	**21**	17	**8.4**	**ug/kg**	**1**
Benzene	71-43-2	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Bromodichloromethane	75-27-4	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Bromoform	75-25-2	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	6.6	U	11	6.6	3.2	ug/kg	1
2-Butanone (MEK)	78-93-3	8260D	8.4	U	21	8.4	4.2	ug/kg	1
Carbon disulfide	75-15-0	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Carbon tetrachloride	56-23-5	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Chlorobenzene	108-90-7	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Chloroethane	75-00-3	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Chloroform	67-66-3	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	6.6	U	11	6.6	3.2	ug/kg	1
Cyclohexane	110-82-7	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Dibromochloromethane	124-48-1	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260D	6.6	U	11	6.6	3.2	ug/kg	1
1,1-Dichloroethane	75-34-3	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
1,2-Dichloroethane	107-06-2	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
1,1-Dichloroethene	75-35-4	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**11**		**5.3**	4.2	**2.1**	**ug/kg**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
1,2-Dichloropropane	78-87-5	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Ethylbenzene	100-41-4	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
2-Hexanone	591-78-6	8260D	8.8	U	11	8.8	4.2	ug/kg	1
Isopropylbenzene	98-82-8	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Methyl acetate	79-20-9	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260D	8.8	U	11	8.8	4.2	ug/kg	1
Methylcyclohexane	108-87-2	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Methylene chloride	75-09-2	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Styrene	100-42-5	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Tetrachloroethene	127-18-4	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Toluene	108-88-3	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF27007-006**	
Description: **R1-SB-18 (2-4)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1335**	Project Name: **TAMP**	% Solids: **79.5**	**06/27/2022 1806**
Date Received: **06/27/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	07/04/2022 2006	JM1		46981

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**110**		**5.3**	4.2	**2.1**	**ug/kg**	**1**
Trichlorofluoromethane	75-69-4	8260D	4.2	U	5.3	4.2	2.1	ug/kg	1
Vinyl chloride	75-01-4	8260D	6.6	U	11	6.6	3.2	ug/kg	1
Xylenes (total)	1330-20-7	8260D	8.8	U	11	8.8	4.2	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		99	79-119
Dibromofluoromethane		102	78-119
1,2-Dichloroethane-d4		97	71-136
Toluene-d8		107	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF27007-007**	
Description: **R1-SB-18 (6-8)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1340**	Project Name: **TAMP**	% Solids: **74.4**	**06/27/2022 1806**
Date Received: **06/27/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	07/04/2022 2029	JM1		46981

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	18	U	23	18	9.0	ug/kg	1
Benzene	71-43-2	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
Bromodichloromethane	75-27-4	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
Bromoform	75-25-2	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	6.6	U	11	6.6	3.4	ug/kg	1
2-Butanone (MEK)	78-93-3	8260D	9.2	U	23	9.2	4.5	ug/kg	1
Carbon disulfide	75-15-0	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
Carbon tetrachloride	56-23-5	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
Chlorobenzene	108-90-7	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
Chloroethane	75-00-3	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
Chloroform	67-66-3	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	6.6	U	11	6.6	3.4	ug/kg	1
Cyclohexane	110-82-7	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
Dibromochloromethane	124-48-1	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260D	6.6	U	11	6.6	3.4	ug/kg	1
1,1-Dichloroethane	75-34-3	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
1,2-Dichloroethane	107-06-2	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
1,1-Dichloroethene	75-35-4	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**19**		**5.6**	4.5	**2.3**	**ug/kg**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
1,2-Dichloropropane	78-87-5	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
Ethylbenzene	100-41-4	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
2-Hexanone	591-78-6	8260D	8.8	U	11	8.8	4.5	ug/kg	1
Isopropylbenzene	98-82-8	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
Methyl acetate	79-20-9	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260D	8.8	U	11	8.8	4.5	ug/kg	1
Methylcyclohexane	108-87-2	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
Methylene chloride	75-09-2	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
Styrene	100-42-5	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
Tetrachloroethene	127-18-4	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
Toluene	108-88-3	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF27007-007**	
Description: **R1-SB-18 (6-8)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1340**	Project Name: **TAMP**	% Solids: **74.4**	**06/27/2022 1806**
Date Received: **06/27/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	07/04/2022 2029	JM1		46981

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**350**	**E**	**5.6**	4.5	**2.3**	**ug/kg**	**1**
Trichlorofluoromethane	75-69-4	8260D	4.5	U	5.6	4.5	2.3	ug/kg	1
Vinyl chloride	75-01-4	8260D	6.6	U	11	6.6	3.4	ug/kg	1
Xylenes (total)	1330-20-7	8260D	8.8	U	11	8.8	4.5	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		98	79-119
Dibromofluoromethane		96	78-119
1,2-Dichloroethane-d4		93	71-136
Toluene-d8		104	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**			Laboratory ID: **XF27007-008**
Description: **R1-SB-19 (2-4)**			Matrix: **Solid**
Date Sampled: **06/22/2022 1435**	Project Name: **TAMP**		% Solids: **76.4** **06/27/2022 1806**
Date Received: **06/27/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035 High	8260D	1	07/04/2022 1718	JM1		46980	6.28

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	1100	U	1400	1100	540	ug/kg	1
Benzene	71-43-2	8260D	270	U	340	270	140	ug/kg	1
Bromodichloromethane	75-27-4	8260D	270	U	340	270	140	ug/kg	1
Bromoform	75-25-2	8260D	270	U	340	270	140	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	410	U	680	410	200	ug/kg	1
2-Butanone (MEK)	78-93-3	8260D	560	U	1400	560	270	ug/kg	1
Carbon disulfide	75-15-0	8260D	270	U	340	270	140	ug/kg	1
Carbon tetrachloride	56-23-5	8260D	270	U	340	270	140	ug/kg	1
Chlorobenzene	108-90-7	8260D	270	U	340	270	140	ug/kg	1
Chloroethane	75-00-3	8260D	270	U	340	270	140	ug/kg	1
Chloroform	67-66-3	8260D	270	U	340	270	140	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	410	UL	680	410	200	ug/kg	1
Cyclohexane	110-82-7	8260D	270	U	340	270	140	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	270	U	340	270	140	ug/kg	1
Dibromochloromethane	124-48-1	8260D	270	U	340	270	140	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	270	U	340	270	140	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260D	270	U	340	270	140	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260D	270	U	340	270	140	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260D	270	U	340	270	140	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260D	410	UL	680	410	200	ug/kg	1
1,1-Dichloroethane	75-34-3	8260D	270	U	340	270	140	ug/kg	1
1,2-Dichloroethane	107-06-2	8260D	270	U	340	270	140	ug/kg	1
1,1-Dichloroethene	75-35-4	8260D	270	U	340	270	140	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	270	U	340	270	140	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	270	U	340	270	140	ug/kg	1
1,2-Dichloropropane	78-87-5	8260D	270	U	340	270	140	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	270	U	340	270	140	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	270	U	340	270	140	ug/kg	1
Ethylbenzene	100-41-4	8260D	270	U	340	270	140	ug/kg	1
2-Hexanone	591-78-6	8260D	540	U	680	540	270	ug/kg	1
Isopropylbenzene	98-82-8	8260D	270	U	340	270	140	ug/kg	1
Methyl acetate	79-20-9	8260D	270	U	340	270	140	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	270	U	340	270	140	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260D	540	U	680	540	270	ug/kg	1
Methylcyclohexane	108-87-2	8260D	270	UL	340	270	140	ug/kg	1
Methylene chloride	75-09-2	8260D	270	U	340	270	140	ug/kg	1
Styrene	100-42-5	8260D	270	U	340	270	140	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	270	U	340	270	140	ug/kg	1
Tetrachloroethene	127-18-4	8260D	270	U	340	270	140	ug/kg	1
Toluene	108-88-3	8260D	270	U	340	270	140	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	270	UL	340	270	140	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	270	U	340	270	140	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260D	270	U	340	270	140	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260D	270	U	340	270	140	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF27007-008**	
Description: **R1-SB-19 (2-4)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1435**	Project Name: **TAMP**	% Solids: **76.4**	**06/27/2022 1806**
Date Received: **06/27/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035 High	8260D	1	07/04/2022 1718	JM1		46980	6.28

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**1800**		**340**	270	**140**	**ug/kg**	**1**
Trichlorofluoromethane	75-69-4	8260D	270	U	340	270	140	ug/kg	1
Vinyl chloride	75-01-4	8260D	410	UL	680	410	200	ug/kg	1
Xylenes (total)	1330-20-7	8260D	540	U	680	540	270	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		91	79-119
Dibromofluoromethane		98	78-119
1,2-Dichloroethane-d4		97	71-136
Toluene-d8		92	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF27007-009**	
Description: **R1-SB-19 (6-8)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1440**	Project Name: **TAMP**	% Solids: **80.8**	**06/27/2022 1806**
Date Received: **06/27/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035 High	8260D	10	07/04/2022 1743	JM1		46980	5.63

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10000	U	13000	10000	5300	ug/kg	1
Benzene	71-43-2	8260D	2600	U	3300	2600	1300	ug/kg	1
Bromodichloromethane	75-27-4	8260D	2600	U	3300	2600	1300	ug/kg	1
Bromoform	75-25-2	8260D	2600	U	3300	2600	1300	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	4000	U	6700	4000	2000	ug/kg	1
2-Butanone (MEK)	78-93-3	8260D	5200	U	13000	5200	2700	ug/kg	1
Carbon disulfide	75-15-0	8260D	2600	U	3300	2600	1300	ug/kg	1
Carbon tetrachloride	56-23-5	8260D	2600	U	3300	2600	1300	ug/kg	1
Chlorobenzene	108-90-7	8260D	2600	U	3300	2600	1300	ug/kg	1
Chloroethane	75-00-3	8260D	2600	U	3300	2600	1300	ug/kg	1
Chloroform	67-66-3	8260D	2600	U	3300	2600	1300	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	4000	UL	6700	4000	2000	ug/kg	1
Cyclohexane	110-82-7	8260D	2600	U	3300	2600	1300	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	2600	U	3300	2600	1300	ug/kg	1
Dibromochloromethane	124-48-1	8260D	2600	U	3300	2600	1300	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	2600	U	3300	2600	1300	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260D	2600	U	3300	2600	1300	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260D	2600	U	3300	2600	1300	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260D	2600	U	3300	2600	1300	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260D	4000	UL	6700	4000	2000	ug/kg	1
1,1-Dichloroethane	75-34-3	8260D	2600	U	3300	2600	1300	ug/kg	1
1,2-Dichloroethane	107-06-2	8260D	2600	U	3300	2600	1300	ug/kg	1
1,1-Dichloroethene	75-35-4	8260D	2600	U	3300	2600	1300	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	2600	U	3300	2600	1300	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	2600	U	3300	2600	1300	ug/kg	1
1,2-Dichloropropane	78-87-5	8260D	2600	U	3300	2600	1300	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	2600	U	3300	2600	1300	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	2600	U	3300	2600	1300	ug/kg	1
Ethylbenzene	100-41-4	8260D	2600	U	3300	2600	1300	ug/kg	1
2-Hexanone	591-78-6	8260D	5400	U	6700	5400	2700	ug/kg	1
Isopropylbenzene	98-82-8	8260D	2600	U	3300	2600	1300	ug/kg	1
Methyl acetate	79-20-9	8260D	2600	U	3300	2600	1300	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	2600	U	3300	2600	1300	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260D	5400	U	6700	5400	2700	ug/kg	1
Methylcyclohexane	108-87-2	8260D	2600	UL	3300	2600	1300	ug/kg	1
Methylene chloride	75-09-2	8260D	2600	U	3300	2600	1300	ug/kg	1
Styrene	100-42-5	8260D	2600	U	3300	2600	1300	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	2600	U	3300	2600	1300	ug/kg	1
Tetrachloroethene	127-18-4	8260D	2600	U	3300	2600	1300	ug/kg	1
Toluene	108-88-3	8260D	2600	U	3300	2600	1300	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	2600	UL	3300	2600	1300	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	2600	U	3300	2600	1300	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260D	2600	U	3300	2600	1300	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260D	2600	U	3300	2600	1300	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF27007-009**	
Description: **R1-SB-19 (6-8)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1440**	Project Name: **TAMP**	% Solids: **80.8**	**06/27/2022 1806**
Date Received: **06/27/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035 High	8260D	10	07/04/2022 1743	JM1		46980	5.63

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**11000**		**3300**	2600	**1300**	**ug/kg**	**1**
Trichlorofluoromethane	75-69-4	8260D	2600	U	3300	2600	1300	ug/kg	1
Vinyl chloride	75-01-4	8260D	4000	UL	6700	4000	2000	ug/kg	1
Xylenes (total)	1330-20-7	8260D	5400	U	6700	5400	2700	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		94	79-119
Dibromofluoromethane		94	78-119
1,2-Dichloroethane-d4		91	71-136
Toluene-d8		86	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XF27007-010**

Description: **TB-04** Matrix: **Aqueous**

Date Sampled: **06/22/2022** Project Name: **TAMP**

Date Received: **06/27/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	06/28/2022 2235	SDC		46461

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	UL	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	UL	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF27007-010**	
Description: **TB-04**		Matrix: **Aqueous**	
Date Sampled: **06/22/2022**	Project Name: **TAMP**		
Date Received: **06/27/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	06/28/2022 2235	SDC		46461

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	UL	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		87	81-118
Bromofluorobenzene		94	85-114
Toluene-d8		94	89-112
Dibromofluoromethane		95	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF27007-011**	
Description: **DUP-SB-03**		Matrix: **Solid**	
Date Sampled: **06/22/2022**	Project Name: **TAMP**	% Solids: **77.1**	**06/27/2022 1806**
Date Received: **06/27/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
2	5035 High	8260D	10	07/06/2022 1235	JM1		47133	6.44

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10000	U	13000	10000	5200	ug/kg	2
Benzene	71-43-2	8260D	2600	U	3300	2600	1300	ug/kg	2
Bromodichloromethane	75-27-4	8260D	2600	U	3300	2600	1300	ug/kg	2
Bromoform	75-25-2	8260D	2600	U	3300	2600	1300	ug/kg	2
Bromomethane (Methyl bromide)	74-83-9	8260D	3900	U	6500	3900	2000	ug/kg	2
2-Butanone (MEK)	78-93-3	8260D	5200	U	13000	5200	2600	ug/kg	2
Carbon disulfide	75-15-0	8260D	2600	U	3300	2600	1300	ug/kg	2
Carbon tetrachloride	56-23-5	8260D	2600	U	3300	2600	1300	ug/kg	2
Chlorobenzene	108-90-7	8260D	2600	U	3300	2600	1300	ug/kg	2
Chloroethane	75-00-3	8260D	2600	U	3300	2600	1300	ug/kg	2
Chloroform	67-66-3	8260D	2600	U	3300	2600	1300	ug/kg	2
Chloromethane (Methyl chloride)	74-87-3	8260D	3900	UL	6500	3900	2000	ug/kg	2
Cyclohexane	110-82-7	8260D	2600	U	3300	2600	1300	ug/kg	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	2600	U	3300	2600	1300	ug/kg	2
Dibromochloromethane	124-48-1	8260D	2600	U	3300	2600	1300	ug/kg	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	2600	U	3300	2600	1300	ug/kg	2
1,2-Dichlorobenzene	95-50-1	8260D	2600	U	3300	2600	1300	ug/kg	2
1,3-Dichlorobenzene	541-73-1	8260D	2600	U	3300	2600	1300	ug/kg	2
1,4-Dichlorobenzene	106-46-7	8260D	2600	U	3300	2600	1300	ug/kg	2
Dichlorodifluoromethane	75-71-8	8260D	3900	UL	6500	3900	2000	ug/kg	2
1,1-Dichloroethane	75-34-3	8260D	2600	U	3300	2600	1300	ug/kg	2
1,2-Dichloroethane	107-06-2	8260D	2600	U	3300	2600	1300	ug/kg	2
1,1-Dichloroethene	75-35-4	8260D	2600	U	3300	2600	1300	ug/kg	2
cis-1,2-Dichloroethene	156-59-2	8260D	2600	U	3300	2600	1300	ug/kg	2
trans-1,2-Dichloroethene	156-60-5	8260D	2600	U	3300	2600	1300	ug/kg	2
1,2-Dichloropropane	78-87-5	8260D	2600	U	3300	2600	1300	ug/kg	2
cis-1,3-Dichloropropene	10061-01-5	8260D	2600	U	3300	2600	1300	ug/kg	2
trans-1,3-Dichloropropene	10061-02-6	8260D	2600	U	3300	2600	1300	ug/kg	2
Ethylbenzene	100-41-4	8260D	2600	U	3300	2600	1300	ug/kg	2
2-Hexanone	591-78-6	8260D	5200	U	6500	5200	2600	ug/kg	2
Isopropylbenzene	98-82-8	8260D	2600	U	3300	2600	1300	ug/kg	2
Methyl acetate	79-20-9	8260D	2600	U	3300	2600	1300	ug/kg	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	2600	U	3300	2600	1300	ug/kg	2
4-Methyl-2-pentanone	108-10-1	8260D	5200	U	6500	5200	2600	ug/kg	2
Methylcyclohexane	108-87-2	8260D	2600	UL	3300	2600	1300	ug/kg	2
Methylene chloride	75-09-2	8260D	2600	U	3300	2600	1300	ug/kg	2
Styrene	100-42-5	8260D	2600	U	3300	2600	1300	ug/kg	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	2600	U	3300	2600	1300	ug/kg	2
Tetrachloroethene	127-18-4	8260D	2600	U	3300	2600	1300	ug/kg	2
Toluene	108-88-3	8260D	2600	U	3300	2600	1300	ug/kg	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	2600	UL	3300	2600	1300	ug/kg	2
1,2,4-Trichlorobenzene	120-82-1	8260D	2600	U	3300	2600	1300	ug/kg	2
1,1,1-Trichloroethane	71-55-6	8260D	2600	U	3300	2600	1300	ug/kg	2
1,1,2-Trichloroethane	79-00-5	8260D	2600	U	3300	2600	1300	ug/kg	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF27007-011**	
Description: **DUP-SB-03**		Matrix: **Solid**	
Date Sampled: **06/22/2022**	Project Name: **TAMP**	% Solids: **77.1**	**06/27/2022 1806**
Date Received: **06/27/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
2	5035 High	8260D	10	07/06/2022 1235	JM1		47133	6.44

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**47000**		**3300**	2600	**1300**	**ug/kg**	**2**
Trichlorofluoromethane	75-69-4	8260D	2600	U	3300	2600	1300	ug/kg	2
Vinyl chloride	75-01-4	8260D	3900	UL	6500	3900	2000	ug/kg	2
Xylenes (total)	1330-20-7	8260D	5200	U	6500	5200	2600	ug/kg	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		104	79-119
Dibromofluoromethane		96	78-119
1,2-Dichloroethane-d4		93	71-136
Toluene-d8		87	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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QC Summary

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46461-001
Batch: 46461
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	06/28/2022 2039
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	06/28/2022 2039
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	06/28/2022 2039
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	06/28/2022 2039
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	06/28/2022 2039
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	06/28/2022 2039
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	06/28/2022 2039
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	06/28/2022 2039
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	06/28/2022 2039
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	06/28/2022 2039
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	06/28/2022 2039
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46461-001
Batch: 46461
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	06/28/2022 2039

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		88	81-118
Bromofluorobenzene		102	85-114
Toluene-d8		95	89-112
Dibromofluoromethane		95	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46461-002
Batch: 46461
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	110		1	106	39-160	06/28/2022 1936
Benzene	50	51		1	103	79-120	06/28/2022 1936
Bromodichloromethane	50	44		1	88	79-125	06/28/2022 1936
Bromoform	50	42		1	84	66-130	06/28/2022 1936
Bromomethane (Methyl bromide)	50	70		1	139	53-141	06/28/2022 1936
2-Butanone (MEK)	100	120		1	121	56-143	06/28/2022 1936
Carbon disulfide	50	46		1	92	64-133	06/28/2022 1936
Carbon tetrachloride	50	42		1	84	72-136	06/28/2022 1936
Chlorobenzene	50	50		1	101	82-118	06/28/2022 1936
Chloroethane	50	58		1	116	60-138	06/28/2022 1936
Chloroform	50	45		1	89	79-124	06/28/2022 1936
Chloromethane (Methyl chloride)	50	79	N	1	158	50-139	06/28/2022 1936
Cyclohexane	50	44		1	88	71-130	06/28/2022 1936
1,2-Dibromo-3-chloropropane (DBCP)	50	41		1	81	62-128	06/28/2022 1936
Dibromochloromethane	50	44		1	88	74-126	06/28/2022 1936
1,2-Dibromoethane (EDB)	50	49		1	97	77-121	06/28/2022 1936
1,2-Dichlorobenzene	50	54		1	108	80-119	06/28/2022 1936
1,3-Dichlorobenzene	50	49		1	98	80-119	06/28/2022 1936
1,4-Dichlorobenzene	50	49		1	99	79-118	06/28/2022 1936
Dichlorodifluoromethane	50	82	N	1	163	32-152	06/28/2022 1936
1,1-Dichloroethane	50	47		1	93	77-125	06/28/2022 1936
1,2-Dichloroethane	50	43		1	87	73-128	06/28/2022 1936
1,1-Dichloroethene	50	51		1	101	71-131	06/28/2022 1936
cis-1,2-Dichloroethene	50	47		1	95	78-123	06/28/2022 1936
trans-1,2-Dichloroethene	50	49		1	98	75-124	06/28/2022 1936
1,2-Dichloropropane	50	52		1	103	78-122	06/28/2022 1936
cis-1,3-Dichloropropene	50	47		1	93	75-124	06/28/2022 1936
trans-1,3-Dichloropropene	50	45		1	90	73-127	06/28/2022 1936
Ethylbenzene	50	51		1	101	79-121	06/28/2022 1936
2-Hexanone	100	93		1	93	57-139	06/28/2022 1936
Isopropylbenzene	50	49		1	98	72-131	06/28/2022 1936
Methyl acetate	50	48		1	96	56-136	06/28/2022 1936
Methyl tertiary butyl ether (MTBE)	50	44		1	87	71-124	06/28/2022 1936
4-Methyl-2-pentanone	100	96		1	96	67-130	06/28/2022 1936
Methylcyclohexane	50	53		1	105	72-132	06/28/2022 1936
Methylene chloride	50	49		1	98	74-124	06/28/2022 1936
Styrene	50	51		1	101	78-123	06/28/2022 1936
1,1,2,2-Tetrachloroethane	50	48		1	97	71-121	06/28/2022 1936
Tetrachloroethene	50	54		1	107	74-129	06/28/2022 1936
Toluene	50	50		1	100	80-121	06/28/2022 1936
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	52		1	104	70-136	06/28/2022 1936
1,2,4-Trichlorobenzene	50	50		1	101	69-130	06/28/2022 1936
1,1,1-Trichloroethane	50	42		1	83	74-131	06/28/2022 1936
1,1,2-Trichloroethane	50	51		1	102	80-119	06/28/2022 1936

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46461-002
Batch: 46461
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	49		1	97	79-123	06/28/2022 1936
Trichlorofluoromethane	50	51		1	102	65-141	06/28/2022 1936
Vinyl chloride	50	78	N	1	156	58-137	06/28/2022 1936
Xylenes (total)	100	100		1	100	79-121	06/28/2022 1936

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		85	81-118
Bromofluorobenzene		102	85-114
Toluene-d8		95	89-112
Dibromofluoromethane		91	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46980-001
Batch: 46980
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035 High

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	800	U	1	1000	800	400	ug/kg	07/01/2022 1142
Benzene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Bromodichloromethane	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Bromoform	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Bromomethane (Methyl bromide)	300	U	1	500	300	150	ug/kg	07/01/2022 1142
2-Butanone (MEK)	400	U	1	1000	400	200	ug/kg	07/01/2022 1142
Carbon disulfide	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Carbon tetrachloride	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Chlorobenzene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Chloroethane	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Chloroform	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Chloromethane (Methyl chloride)	300	U	1	500	300	150	ug/kg	07/01/2022 1142
Cyclohexane	200	U	1	250	200	100	ug/kg	07/01/2022 1142
1,2-Dibromo-3-chloropropane (DBCP)	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Dibromochloromethane	200	U	1	250	200	100	ug/kg	07/01/2022 1142
1,2-Dibromoethane (EDB)	200	U	1	250	200	100	ug/kg	07/01/2022 1142
1,2-Dichlorobenzene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
1,3-Dichlorobenzene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
1,4-Dichlorobenzene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Dichlorodifluoromethane	300	U	1	500	300	150	ug/kg	07/01/2022 1142
1,1-Dichloroethane	200	U	1	250	200	100	ug/kg	07/01/2022 1142
1,2-Dichloroethane	200	U	1	250	200	100	ug/kg	07/01/2022 1142
1,1-Dichloroethene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
cis-1,2-Dichloroethene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
trans-1,2-Dichloroethene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
1,2-Dichloropropane	200	U	1	250	200	100	ug/kg	07/01/2022 1142
cis-1,3-Dichloropropene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
trans-1,3-Dichloropropene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Ethylbenzene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
2-Hexanone	400	U	1	500	400	200	ug/kg	07/01/2022 1142
Isopropylbenzene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Methyl acetate	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Methyl tertiary butyl ether (MTBE)	200	U	1	250	200	100	ug/kg	07/01/2022 1142
4-Methyl-2-pentanone	400	U	1	500	400	200	ug/kg	07/01/2022 1142
Methylcyclohexane	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Methylene chloride	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Styrene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
1,1,2,2-Tetrachloroethane	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Tetrachloroethene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Toluene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
1,1,2-Trichloro-1,2,2-Trifluoroethane	200	U	1	250	200	100	ug/kg	07/01/2022 1142
1,2,4-Trichlorobenzene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
1,1,1-Trichloroethane	200	U	1	250	200	100	ug/kg	07/01/2022 1142
1,1,2-Trichloroethane	200	U	1	250	200	100	ug/kg	07/01/2022 1142

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46980-001
Batch: 46980
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035 High

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Trichlorofluoromethane	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Vinyl chloride	300	U	1	500	300	150	ug/kg	07/01/2022 1142
Xylenes (total)	400	U	1	500	400	200	ug/kg	07/01/2022 1142

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		106	79-119
Dibromofluoromethane		103	78-119
1,2-Dichloroethane-d4		107	71-136
Toluene-d8		102	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46980-002
Batch: 46980
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035 High

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	5000	4600		1	92	36-164	07/01/2022 1119
Benzene	2500	2700		1	110	77-121	07/01/2022 1119
Bromodichloromethane	2500	2600		1	105	75-127	07/01/2022 1119
Bromoform	2500	2300		1	94	67-132	07/01/2022 1119
Bromomethane (Methyl bromide)	2500	2700		1	108	53-143	07/01/2022 1119
2-Butanone (MEK)	5000	5300		1	106	51-148	07/01/2022 1119
Carbon disulfide	2500	2600		1	104	63-132	07/01/2022 1119
Carbon tetrachloride	2500	2900		1	117	70-135	07/01/2022 1119
Chlorobenzene	2500	2700		1	110	79-120	07/01/2022 1119
Chloroethane	2500	2900		1	115	59-139	07/01/2022 1119
Chloroform	2500	2700		1	107	78-123	07/01/2022 1119
Chloromethane (Methyl chloride)	2500	3500	N	1	140	50-136	07/01/2022 1119
Cyclohexane	2500	2900		1	115	67-131	07/01/2022 1119
1,2-Dibromo-3-chloropropane (DBCP)	2500	2500		1	98	61-132	07/01/2022 1119
Dibromochloromethane	2500	2500		1	100	75-127	07/01/2022 1119
1,2-Dibromoethane (EDB)	2500	2400		1	97	78-122	07/01/2022 1119
1,2-Dichlorobenzene	2500	2700		1	109	78-121	07/01/2022 1119
1,3-Dichlorobenzene	2500	2800		1	113	77-121	07/01/2022 1119
1,4-Dichlorobenzene	2500	2800		1	114	75-120	07/01/2022 1119
Dichlorodifluoromethane	2500	4100	N	1	165	29-149	07/01/2022 1119
1,1-Dichloroethane	2500	2800		1	110	76-125	07/01/2022 1119
1,2-Dichloroethane	2500	2600		1	105	73-128	07/01/2022 1119
1,1-Dichloroethene	2500	2800		1	112	70-131	07/01/2022 1119
cis-1,2-Dichloroethene	2500	2700		1	106	77-123	07/01/2022 1119
trans-1,2-Dichloroethene	2500	2700		1	108	74-125	07/01/2022 1119
1,2-Dichloropropane	2500	2700		1	107	76-123	07/01/2022 1119
cis-1,3-Dichloropropene	2500	2700		1	106	74-126	07/01/2022 1119
trans-1,3-Dichloropropene	2500	2600		1	104	71-130	07/01/2022 1119
Ethylbenzene	2500	2800		1	114	76-122	07/01/2022 1119
2-Hexanone	5000	4600		1	92	53-145	07/01/2022 1119
Isopropylbenzene	2500	2900		1	117	68-134	07/01/2022 1119
Methyl acetate	2500	2300		1	92	53-144	07/01/2022 1119
Methyl tertiary butyl ether (MTBE)	2500	2400		1	95	73-125	07/01/2022 1119
4-Methyl-2-pentanone	5000	4500		1	90	65-135	07/01/2022 1119
Methylcyclohexane	2500	3400	N	1	135	66-133	07/01/2022 1119
Methylene chloride	2500	2700		1	106	70-128	07/01/2022 1119
Styrene	2500	2700		1	110	76-124	07/01/2022 1119
1,1,2,2-Tetrachloroethane	2500	2300		1	93	70-124	07/01/2022 1119
Tetrachloroethene	2500	2900		1	116	73-128	07/01/2022 1119
Toluene	2500	2700		1	109	77-121	07/01/2022 1119
1,1,2-Trichloro-1,2,2-Trifluoroethane	2500	3400	N	1	137	66-136	07/01/2022 1119
1,2,4-Trichlorobenzene	2500	2900		1	117	67-129	07/01/2022 1119
1,1,1-Trichloroethane	2500	2800		1	110	73-130	07/01/2022 1119
1,1,2-Trichloroethane	2500	2500		1	99	78-121	07/01/2022 1119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46980-002
Batch: 46980
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035 High

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	2500	2800		1	110	77-123	07/01/2022 1119
Trichlorofluoromethane	2500	3400		1	136	62-140	07/01/2022 1119
Vinyl chloride	2500	3800	N	1	154	56-135	07/01/2022 1119
Xylenes (total)	5000	5700		1	113	78-124	07/01/2022 1119

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		89	79-119
Dibromofluoromethane		88	78-119
1,2-Dichloroethane-d4		92	71-136
Toluene-d8		96	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46981-001
Batch: 46981
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	16	U	1	20	16	8.0	ug/kg	07/04/2022 1524
Benzene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
Bromodichloromethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
Bromoform	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
Bromomethane (Methyl bromide)	6.0	U	1	10	6.0	3.0	ug/kg	07/04/2022 1524
2-Butanone (MEK)	8.0	U	1	20	8.0	4.0	ug/kg	07/04/2022 1524
Carbon disulfide	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
Carbon tetrachloride	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
Chlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
Chloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
Chloroform	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
Chloromethane (Methyl chloride)	6.0	U	1	10	6.0	3.0	ug/kg	07/04/2022 1524
Cyclohexane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
1,2-Dibromo-3-chloropropane (DBCP)	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
Dibromochloromethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
1,2-Dibromoethane (EDB)	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
1,2-Dichlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
1,3-Dichlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
1,4-Dichlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
Dichlorodifluoromethane	6.0	U	1	10	6.0	3.0	ug/kg	07/04/2022 1524
1,1-Dichloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
1,2-Dichloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
1,1-Dichloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
cis-1,2-Dichloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
trans-1,2-Dichloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
1,2-Dichloropropane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
cis-1,3-Dichloropropene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
trans-1,3-Dichloropropene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
Ethylbenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
2-Hexanone	8.0	U	1	10	8.0	4.0	ug/kg	07/04/2022 1524
Isopropylbenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
Methyl acetate	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
Methyl tertiary butyl ether (MTBE)	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
4-Methyl-2-pentanone	8.0	U	1	10	8.0	4.0	ug/kg	07/04/2022 1524
Methylcyclohexane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
Methylene chloride	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
Styrene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
1,1,2,2-Tetrachloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
Tetrachloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
Toluene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
1,1,2-Trichloro-1,2,2-Trifluoroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
1,2,4-Trichlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
1,1,1-Trichloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
1,1,2-Trichloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46981-001
Batch: 46981
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
Trichlorofluoromethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/04/2022 1524
Vinyl chloride	6.0	U	1	10	6.0	3.0	ug/kg	07/04/2022 1524
Xylenes (total)	8.0	U	1	10	8.0	4.0	ug/kg	07/04/2022 1524

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		99	79-119
Dibromofluoromethane		104	78-119
1,2-Dichloroethane-d4		102	71-136
Toluene-d8		108	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46981-002
Batch: 46981
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	110		1	108	36-164	07/04/2022 1404
Benzene	50	52		1	103	77-121	07/04/2022 1404
Bromodichloromethane	50	49		1	99	75-127	07/04/2022 1404
Bromoform	50	51		1	102	67-132	07/04/2022 1404
Bromomethane (Methyl bromide)	50	53		1	105	53-143	07/04/2022 1404
2-Butanone (MEK)	100	120		1	115	51-148	07/04/2022 1404
Carbon disulfide	50	54		1	107	63-132	07/04/2022 1404
Carbon tetrachloride	50	56		1	112	70-135	07/04/2022 1404
Chlorobenzene	50	52		1	104	79-120	07/04/2022 1404
Chloroethane	50	52		1	104	59-139	07/04/2022 1404
Chloroform	50	51		1	101	78-123	07/04/2022 1404
Chloromethane (Methyl chloride)	50	54		1	109	50-136	07/04/2022 1404
Cyclohexane	50	50		1	100	67-131	07/04/2022 1404
1,2-Dibromo-3-chloropropane (DBCP)	50	47		1	95	61-132	07/04/2022 1404
Dibromochloromethane	50	50		1	101	75-127	07/04/2022 1404
1,2-Dibromoethane (EDB)	50	51		1	101	78-122	07/04/2022 1404
1,2-Dichlorobenzene	50	49		1	99	78-121	07/04/2022 1404
1,3-Dichlorobenzene	50	50		1	100	77-121	07/04/2022 1404
1,4-Dichlorobenzene	50	49		1	97	75-120	07/04/2022 1404
Dichlorodifluoromethane	50	49		1	98	29-149	07/04/2022 1404
1,1-Dichloroethane	50	51		1	102	76-125	07/04/2022 1404
1,2-Dichloroethane	50	50		1	100	73-128	07/04/2022 1404
1,1-Dichloroethene	50	51		1	101	70-131	07/04/2022 1404
cis-1,2-Dichloroethene	50	51		1	102	77-123	07/04/2022 1404
trans-1,2-Dichloroethene	50	53		1	106	74-125	07/04/2022 1404
1,2-Dichloropropane	50	51		1	102	76-123	07/04/2022 1404
cis-1,3-Dichloropropene	50	52		1	103	74-126	07/04/2022 1404
trans-1,3-Dichloropropene	50	53		1	105	71-130	07/04/2022 1404
Ethylbenzene	50	54		1	108	76-122	07/04/2022 1404
2-Hexanone	100	110		1	113	53-145	07/04/2022 1404
Isopropylbenzene	50	54		1	108	68-134	07/04/2022 1404
Methyl acetate	50	46		1	93	53-144	07/04/2022 1404
Methyl tertiary butyl ether (MTBE)	50	49		1	98	73-125	07/04/2022 1404
4-Methyl-2-pentanone	100	99		1	99	65-135	07/04/2022 1404
Methylcyclohexane	50	52		1	104	66-133	07/04/2022 1404
Methylene chloride	50	49		1	98	70-128	07/04/2022 1404
Styrene	50	52		1	104	76-124	07/04/2022 1404
1,1,2,2-Tetrachloroethane	50	48		1	96	70-124	07/04/2022 1404
Tetrachloroethene	50	58		1	115	73-128	07/04/2022 1404
Toluene	50	52		1	105	77-121	07/04/2022 1404
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	52		1	104	66-136	07/04/2022 1404
1,2,4-Trichlorobenzene	50	50		1	99	67-129	07/04/2022 1404
1,1,1-Trichloroethane	50	55		1	110	73-130	07/04/2022 1404
1,1,2-Trichloroethane	50	50		1	100	78-121	07/04/2022 1404

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46981-002
Batch: 46981
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	54		1	109	77-123	07/04/2022 1404
Trichlorofluoromethane	50	53		1	106	62-140	07/04/2022 1404
Vinyl chloride	50	48		1	96	56-135	07/04/2022 1404
Xylenes (total)	100	110		1	106	78-124	07/04/2022 1404

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		103	79-119
Dibromofluoromethane		99	78-119
1,2-Dichloroethane-d4		96	71-136
Toluene-d8		102	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: XQ46981-003
Batch: 46981
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acetone	100	80	+	1	80	30	36-164	20	07/04/2022 1445
Benzene	50	52		1	104	0.75	77-121	20	07/04/2022 1445
Bromodichloromethane	50	49		1	97	1.2	75-127	20	07/04/2022 1445
Bromoform	50	48		1	96	5.6	67-132	20	07/04/2022 1445
Bromomethane (Methyl bromide)	50	52		1	104	1.6	53-143	20	07/04/2022 1445
2-Butanone (MEK)	100	88	+	1	88	27	51-148	20	07/04/2022 1445
Carbon disulfide	50	56		1	111	3.5	63-132	20	07/04/2022 1445
Carbon tetrachloride	50	58		1	116	3.6	70-135	20	07/04/2022 1445
Chlorobenzene	50	52		1	105	1.0	79-120	20	07/04/2022 1445
Chloroethane	50	52		1	104	0.35	59-139	20	07/04/2022 1445
Chloroform	50	50		1	101	0.88	78-123	20	07/04/2022 1445
Chloromethane (Methyl chloride)	50	56		1	113	3.4	50-136	20	07/04/2022 1445
Cyclohexane	50	52		1	104	4.0	67-131	20	07/04/2022 1445
1,2-Dibromo-3-chloropropane (DBCP)	50	44		1	87	8.2	61-132	20	07/04/2022 1445
Dibromochloromethane	50	49		1	97	3.2	75-127	20	07/04/2022 1445
1,2-Dibromoethane (EDB)	50	48		1	96	4.7	78-122	20	07/04/2022 1445
1,2-Dichlorobenzene	50	49		1	98	0.29	78-121	20	07/04/2022 1445
1,3-Dichlorobenzene	50	51		1	102	2.0	77-121	20	07/04/2022 1445
1,4-Dichlorobenzene	50	49		1	99	1.5	75-120	20	07/04/2022 1445
Dichlorodifluoromethane	50	53		1	107	8.8	29-149	20	07/04/2022 1445
1,1-Dichloroethane	50	52		1	105	2.5	76-125	20	07/04/2022 1445
1,2-Dichloroethane	50	48		1	96	3.3	73-128	20	07/04/2022 1445
1,1-Dichloroethene	50	53		1	106	4.6	70-131	20	07/04/2022 1445
cis-1,2-Dichloroethene	50	52		1	103	1.2	77-123	20	07/04/2022 1445
trans-1,2-Dichloroethene	50	55		1	109	3.1	74-125	20	07/04/2022 1445
1,2-Dichloropropane	50	51		1	102	0.13	76-123	20	07/04/2022 1445
cis-1,3-Dichloropropene	50	51		1	102	1.8	74-126	20	07/04/2022 1445
trans-1,3-Dichloropropene	50	51		1	102	3.1	71-130	20	07/04/2022 1445
Ethylbenzene	50	56		1	111	2.5	76-122	20	07/04/2022 1445
2-Hexanone	100	92		1	92	20	53-145	20	07/04/2022 1445
Isopropylbenzene	50	57		1	113	4.6	68-134	20	07/04/2022 1445
Methyl acetate	50	44		1	88	5.8	53-144	20	07/04/2022 1445
Methyl tertiary butyl ether (MTBE)	50	47		1	93	4.6	73-125	20	07/04/2022 1445
4-Methyl-2-pentanone	100	92		1	92	6.7	65-135	20	07/04/2022 1445
Methylcyclohexane	50	55		1	109	4.7	66-133	20	07/04/2022 1445
Methylene chloride	50	49		1	97	0.89	70-128	20	07/04/2022 1445
Styrene	50	52		1	104	0.078	76-124	20	07/04/2022 1445
1,1,2,2-Tetrachloroethane	50	47		1	95	1.2	70-124	20	07/04/2022 1445
Tetrachloroethene	50	60		1	120	3.9	73-128	20	07/04/2022 1445
Toluene	50	52		1	105	0.011	77-121	20	07/04/2022 1445
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	55		1	110	5.3	66-136	20	07/04/2022 1445
1,2,4-Trichlorobenzene	50	48		1	96	2.9	67-129	20	07/04/2022 1445
1,1,1-Trichloroethane	50	55		1	111	0.87	73-130	20	07/04/2022 1445
1,1,2-Trichloroethane	50	48		1	97	3.3	78-121	20	07/04/2022 1445

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: XQ46981-003
Batch: 46981
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Trichloroethene	50	56		1	112	2.8	77-123	20	07/04/2022 1445
Trichlorofluoromethane	50	55		1	110	3.6	62-140	20	07/04/2022 1445
Vinyl chloride	50	50		1	100	3.8	56-135	20	07/04/2022 1445
Xylenes (total)	100	110		1	108	1.5	78-124	20	07/04/2022 1445

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		102	79-119
Dibromofluoromethane		97	78-119
1,2-Dichloroethane-d4		93	71-136
Toluene-d8		98	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ47077-001
Batch: 47077
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035 High

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	200	U	1	250	200	100	ug/kg	07/05/2022 1225

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		87	79-119
Dibromofluoromethane		97	78-119
1,2-Dichloroethane-d4		96	71-136
Toluene-d8		92	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ47077-002
Batch: 47077
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035 High

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	2500	2500		1	100	77-123	07/05/2022 1201

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		95	79-119
Dibromofluoromethane		90	78-119
1,2-Dichloroethane-d4		88	71-136
Toluene-d8		96	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ47133-001
Batch: 47133
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035 High

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	800	U	1	1000	800	400	ug/kg	07/01/2022 1142
Benzene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Bromodichloromethane	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Bromoform	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Bromomethane (Methyl bromide)	300	U	1	500	300	150	ug/kg	07/01/2022 1142
2-Butanone (MEK)	400	U	1	1000	400	200	ug/kg	07/01/2022 1142
Carbon disulfide	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Carbon tetrachloride	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Chlorobenzene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Chloroethane	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Chloroform	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Chloromethane (Methyl chloride)	300	U	1	500	300	150	ug/kg	07/01/2022 1142
Cyclohexane	200	U	1	250	200	100	ug/kg	07/01/2022 1142
1,2-Dibromo-3-chloropropane (DBCP)	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Dibromochloromethane	200	U	1	250	200	100	ug/kg	07/01/2022 1142
1,2-Dibromoethane (EDB)	200	U	1	250	200	100	ug/kg	07/01/2022 1142
1,2-Dichlorobenzene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
1,3-Dichlorobenzene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
1,4-Dichlorobenzene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Dichlorodifluoromethane	300	U	1	500	300	150	ug/kg	07/01/2022 1142
1,1-Dichloroethane	200	U	1	250	200	100	ug/kg	07/01/2022 1142
1,2-Dichloroethane	200	U	1	250	200	100	ug/kg	07/01/2022 1142
1,1-Dichloroethene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
cis-1,2-Dichloroethene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
trans-1,2-Dichloroethene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
1,2-Dichloropropane	200	U	1	250	200	100	ug/kg	07/01/2022 1142
cis-1,3-Dichloropropene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
trans-1,3-Dichloropropene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Ethylbenzene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
2-Hexanone	400	U	1	500	400	200	ug/kg	07/01/2022 1142
Isopropylbenzene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Methyl acetate	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Methyl tertiary butyl ether (MTBE)	200	U	1	250	200	100	ug/kg	07/01/2022 1142
4-Methyl-2-pentanone	400	U	1	500	400	200	ug/kg	07/01/2022 1142
Methylcyclohexane	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Methylene chloride	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Styrene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
1,1,2,2-Tetrachloroethane	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Tetrachloroethene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Toluene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
1,1,2-Trichloro-1,2,2-Trifluoroethane	200	U	1	250	200	100	ug/kg	07/01/2022 1142
1,2,4-Trichlorobenzene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
1,1,1-Trichloroethane	200	U	1	250	200	100	ug/kg	07/01/2022 1142
1,1,2-Trichloroethane	200	U	1	250	200	100	ug/kg	07/01/2022 1142

LOQ = Limit of Quantitation
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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ47133-001
Batch: 47133
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035 High

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Trichlorofluoromethane	200	U	1	250	200	100	ug/kg	07/01/2022 1142
Vinyl chloride	300	U	1	500	300	150	ug/kg	07/01/2022 1142
Xylenes (total)	400	U	1	500	400	200	ug/kg	07/01/2022 1142

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		106	79-119
Dibromofluoromethane		103	78-119
1,2-Dichloroethane-d4		107	71-136
Toluene-d8		102	85-116

LOQ = Limit of Quantitation
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LOD = Limit of Detection

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N = Recovery is out of criteria
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+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ47133-002
Batch: 47133
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035 High

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	5000	4600		1	92	36-164	07/01/2022 1119
Benzene	2500	2700		1	110	77-121	07/01/2022 1119
Bromodichloromethane	2500	2600		1	105	75-127	07/01/2022 1119
Bromoform	2500	2300		1	94	67-132	07/01/2022 1119
Bromomethane (Methyl bromide)	2500	2700		1	108	53-143	07/01/2022 1119
2-Butanone (MEK)	5000	5300		1	106	51-148	07/01/2022 1119
Carbon disulfide	2500	2600		1	104	63-132	07/01/2022 1119
Carbon tetrachloride	2500	2900		1	117	70-135	07/01/2022 1119
Chlorobenzene	2500	2700		1	110	79-120	07/01/2022 1119
Chloroethane	2500	2900		1	115	59-139	07/01/2022 1119
Chloroform	2500	2700		1	107	78-123	07/01/2022 1119
Chloromethane (Methyl chloride)	2500	3500	N	1	140	50-136	07/01/2022 1119
Cyclohexane	2500	2900		1	115	67-131	07/01/2022 1119
1,2-Dibromo-3-chloropropane (DBCP)	2500	2500		1	98	61-132	07/01/2022 1119
Dibromochloromethane	2500	2500		1	100	75-127	07/01/2022 1119
1,2-Dibromoethane (EDB)	2500	2400		1	97	78-122	07/01/2022 1119
1,2-Dichlorobenzene	2500	2700		1	109	78-121	07/01/2022 1119
1,3-Dichlorobenzene	2500	2800		1	113	77-121	07/01/2022 1119
1,4-Dichlorobenzene	2500	2800		1	114	75-120	07/01/2022 1119
Dichlorodifluoromethane	2500	4100	N	1	165	29-149	07/01/2022 1119
1,1-Dichloroethane	2500	2800		1	110	76-125	07/01/2022 1119
1,2-Dichloroethane	2500	2600		1	105	73-128	07/01/2022 1119
1,1-Dichloroethene	2500	2800		1	112	70-131	07/01/2022 1119
cis-1,2-Dichloroethene	2500	2700		1	106	77-123	07/01/2022 1119
trans-1,2-Dichloroethene	2500	2700		1	108	74-125	07/01/2022 1119
1,2-Dichloropropane	2500	2700		1	107	76-123	07/01/2022 1119
cis-1,3-Dichloropropene	2500	2700		1	106	74-126	07/01/2022 1119
trans-1,3-Dichloropropene	2500	2600		1	104	71-130	07/01/2022 1119
Ethylbenzene	2500	2800		1	114	76-122	07/01/2022 1119
2-Hexanone	5000	4600		1	92	53-145	07/01/2022 1119
Isopropylbenzene	2500	2900		1	117	68-134	07/01/2022 1119
Methyl acetate	2500	2300		1	92	53-144	07/01/2022 1119
Methyl tertiary butyl ether (MTBE)	2500	2400		1	95	73-125	07/01/2022 1119
4-Methyl-2-pentanone	5000	4500		1	90	65-135	07/01/2022 1119
Methylcyclohexane	2500	3400	N	1	135	66-133	07/01/2022 1119
Methylene chloride	2500	2700		1	106	70-128	07/01/2022 1119
Styrene	2500	2700		1	110	76-124	07/01/2022 1119
1,1,2,2-Tetrachloroethane	2500	2300		1	93	70-124	07/01/2022 1119
Tetrachloroethene	2500	2900		1	116	73-128	07/01/2022 1119
Toluene	2500	2700		1	109	77-121	07/01/2022 1119
1,1,2-Trichloro-1,2,2-Trifluoroethane	2500	3400	N	1	137	66-136	07/01/2022 1119
1,2,4-Trichlorobenzene	2500	2900		1	117	67-129	07/01/2022 1119
1,1,1-Trichloroethane	2500	2800		1	110	73-130	07/01/2022 1119
1,1,2-Trichloroethane	2500	2500		1	99	78-121	07/01/2022 1119

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P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ47133-002
Batch: 47133
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035 High

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	2500	2800		1	110	77-123	07/01/2022 1119
Trichlorofluoromethane	2500	3400		1	136	62-140	07/01/2022 1119
Vinyl chloride	2500	3800	N	1	154	56-135	07/01/2022 1119
Xylenes (total)	5000	5700		1	113	78-124	07/01/2022 1119

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		89	79-119
Dibromofluoromethane		88	78-119
1,2-Dichloroethane-d4		92	71-136
Toluene-d8		96	85-116

LOQ = Limit of Quantitation
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LOD = Limit of Detection

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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Chain of Custody
and
Miscellaneous Documents

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Number 134601

Client: Terracon Consultants Inc.	Report to Contact: Ethan Dinwiddie	Telephone No. / E-mail: (828)-530-5302 / ethan.dinwiddie@terracon.com	Quote No.: 25322
Address: 2801 Brentwood Rd.	Sampler's Signature: x [signature]	Analysis (Attach list if more space is needed)	Page 1 of 2
City: Raleigh; State: NC; Zip Code: 27604	Printed Name: Danielle Foster		XF27007
Project Name: ~~06 7021~~ T.A.M.P.			CSO
Project No.: 7021 P145	P.O. No.:		Remarks / Cooler I.D.

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	Grab G / Composite C	Matrix: Aqueous	Soil	Other Specify	No. of Containers by Preservative Type: Unpres.	HCl/Cl	HNO3	H2SO4	NaOH	Zn Ac / NaOH	Other Specify	VOCs 8260								
R1-SB-17 (0-2)	6/22	1205	G		X		1					1		X								
R1-SB-17 (2-4)	↓	1210	G		X		1					1		X								
R1-SB-17 (4-6)		1215	G		X		1					1		X								
R1-SB-17 (6-8)		1220	G		X		1					1		X								
R1-SB-17 (8-10)		1225	G		X		1					1		X								
R1-SB-18 (2-4)		1335	G		X		1					1		X								
R1-SB-18 (6-8)		1340	G		X		1					1		X								
R1-SB-19 (2-4)		1435	G		X		1					1		X								
R1-SB-19 (6-8)		1440	G		X		1					1		X								
TB-04			G	X			1				2			X								

Turn Around Time Required (Prior lab approval required for expedited TAT)	Sample Disposal	Possible Hazard Identification	QC Requirements (Specify)
☑ Standard ☐ Rush (Specify)	☐ Return to Client ☑ Disposal by Lab	☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☑ Unknown	

	Date	Time		Date	Time
1. Relinquished by [signature]	6/23	1700	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by [signature]		
4. Relinquished by			4. Laboratory received by [signature]	6/27/22	0845

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on ice (Circle) Yes No Ice Pack melted
Receipt Temp. 20.7 °C
Temp Blank ☑ Y ☐ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME003N2-01

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www.pacelabs.com

Number 134602

Client: Terracon Consultants Inc.	Report to Contact: Ethan Dinwiddie	Telephone No. / E-mail: (828)-550-5502 / ethan.dinwiddie@terracon.com	Quote No.: 25322
Address: 2401 Brentwood Rd.	Sampler's Signature: x [signature]	Analysis (Attach list if more space is needed)	XF27007
City: Raleigh State: NC Zip Code: 27604	Printed Name: Danielle Foster		CSD
Project Name: T.A.M.P.			
Project No.: 702/P145	P.O. No.		

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	GeoGrab G-Composite	Matrix: Aqueous	Matrix: Soils	Matrix: Non-Aqueous	No of Containers by Preservative Type: Unpres.	NaOH	HNO3	HCl	NaOH	S2O3 Kit	Field Filtered	VOCs 8260	Remarks / Cooler I.D.
DUP-SB-03	6/22		G		X		1					1		X	

Turn Around Time Required (Prior lab approval required for expedited TAT.): ☑ Standard ☐ Rush (Specify)

Sample Disposal: ☐ Return to Client ☑ Disposal by Lab

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☑ Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by: [signature]	6/23	1700	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by			4. Laboratory received by: [signature]	6/27/22	0845

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on ice (Circle) Yes No Ice Pack melted
Receipt Temp. 20.7 °C
Temp Blank ☑ Y ☐ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME003N2-01

Pace Analytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: TERRACON Cooler Inspected by/date: CBP / 06/27/2022 Lot #: XF27007

Means of receipt: ☐ Pace ☐ Client ☐ UPS ☑ FedEx ☐ Other: _____

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: 22-1253

20.7 / 20.7 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☐ Temperature Blank ☑ Against Bottles IR Gun ID: 6 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☑ Yes	☐ No	☐ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☑ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? _____
☑ Yes	☐ No		13. Was adequate sample volume available?
☐ Yes	☑ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☑ No	☑ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼" or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote #

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) _____ were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: CBP Date: 06/27/2022

Comments:

Report of Analysis

Terracon Consultants, Inc.
2401 Brentwood Road
Suite 107 I
Raleigh, NC 27604
Attention: Ethan Dinwiddie

Project Name: TAMP

Project Number: 7021P145

Lot Number:**XF24011**

Date Completed:07/14/2022

07/25/2022 10:41 PM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.
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Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
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Case Narrative
Terracon Consultants, Inc.
Lot Number: XF24011

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Additionally, the DoD QSM version 5.3 has been followed for these samples. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs, the DoD QSM, or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

Where applicable, all soil sample results (including LOQ and DL if requested) are corrected for dry weight unless flagged with a "W" qualifier.

VOA 8260D
The initial calibration verification (ICV) associated with samples XF24011-001, XF24011-002, XF24011-003, XF24011-004, XF24011-005, XF24011-006, XF24011-007, and XF24011-008 exceeded control criteria for analytes: Chloromethane (135%), Vinyl chloride (135%), Bromomethane (124%), Chloroethane (123%), Trichlorofluoromethane (128%), 2-Butanone (125%), and Tetrachloroethene (121%). The data has been reported.

The continuing calibration verification (CCV) associated with sample(s) XF24011-002, XF24011-005, XF24011-006, XF24011-007, and XF24011-008 for Vinyl Chloride (22%) recovered above the upper control limit. The samples associated with this CCV were non-detect for the affected analytes; therefore, the data has been reported.

XF24011-001 (RI-SB-20 (0-2)) (Run 1) (Analysis Batch 46672) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF24011-002 (RI-SB-20 (4-6)) (Run 1) (Analysis Batch 46672) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF24011-003 (RI-SB-21 (0-2)) (Run 1) (Analysis Batch 46672) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF24011-004 (RI-SB-21 (2-4)) (Run 1) (Analysis Batch 46672) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF24011-005 (RI-SB-22 (2-4)) (Run 1) (Analysis Batch 46672) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF24011-006 (RI-SB-22 (4-6)) (Run 1) (Analysis Batch 46672) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF24011-007 (RI-SB-22 (6-8)) (Run 1) (Analysis Batch 46672) TCL VOCs (OLM04.3) (DOD QSM 5.3)
XF24011-008 (RI-SB-23 (6-8)) (Run 1) (Analysis Batch 46672) TCL VOCs (OLM04.3) (DOD QSM 5.3)

The continuing calibration verification (CCV) associated with sample XF24011-009 (RI-SB-23 (16-18)) for analytes: Dichlorodifluoromethane (51%), Chloromethane (42%), Bromomethane (24%), and Chloroethane (23%) recovered above the upper control limit. The sample associated with this CCV was non-detect for the affected analytes; therefore, the data has been reported.

The continuing calibration verification (CCV) and laboratory control sample (LCS) associated with sample XF24011-009 (RI-SB-23 (16-18)) for Vinyl Chloride (43% and 143%) recovered above the upper control limit. The sample associated with this CCV and LCS was non-detect for the affected analytes; therefore, the data has been reported.

The laboratory control sample (LCS) for analytical batch 46673 exceeded acceptance criteria for the following analytes: Dichlorodifluoromethane (151%), Chloromethane (142%) and Vinyl Chloride (143%). These analytes were biased high and were not detected in the associated samples: XF24011-009 (RI-SB-23 (16-18)).

The initial calibration verification (ICV) associated with sample XF24011-009 (RI-SB-23 (16-18)) exceeded control criteria for analytes: Dichlorodifluoromethane (128%). The data has been reported.

The closing continuing calibration verification (CCV) associated with sample XF24011-009 for Chloromethane (53%) recovered above the upper control limit. The sample associated with this closing CCV was non-detect for the affected analytes; therefore, the data has been reported.

cis-1,2-Dichloroethene was reported as an estimated value in sample XF24011-005 (RI-SB-22 (2-4)) and XF24011-006 (RI-SB-22 (4-6)) as the result was above the upper calibration level. The sample was re-analyzed from the medium level (methanol) vial, but was not reported due to the result being below the LOQ therefore only the low level was reported.

The continuing calibration verification (CCV) associated with sample XF24011-010 (EB-02) for analytes: o-cresol, acetophenone, and di-n-octylphthalate recovered above the upper control limit. The sample associated with this CCV were non-detect for the affected analytes; therefore, the data has been reported.

The initial calibration verification (ICV) associated with sample XF24011-010 (EB-02) exceeded DOD control criteria for 80-120 for analytes: Nitrobenzene (79%). The data has been reported.

The MS/MSD for batch 46672 and parent sample XF24011-002 (RI-SB-20(4-6)), recovered outside the control limits for multiple analytes. The associated LCS passed acceptance criteria.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

PACE ANALYTICAL SERVICES, LLC

Sample Summary

Terracon Consultants, Inc.

Lot Number: XF24011

Project Name: TAMP

Project Number: 7021P145

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	RI-SB-20 (0-2)	Solid	06/22/2022 1600	06/24/2022
002	RI-SB-20 (4-6)	Solid	06/22/2022 1605	06/24/2022
003	RI-SB-21 (0-2)	Solid	06/22/2022 1630	06/24/2022
004	RI-SB-21 (2-4)	Solid	06/22/2022 1645	06/24/2022
005	RI-SB-22 (2-4)	Solid	06/22/2022 1730	06/24/2022
006	RI-SB-22 (4-6)	Solid	06/22/2022 1740	06/24/2022
007	RI-SB-22 (6-8)	Solid	06/22/2022 1745	06/24/2022
008	RI-SB-23 (6-8)	Solid	06/22/2022 1755	06/24/2022
009	RI-SB-23 (16-18)	Solid	06/22/2022 1800	06/24/2022
010	EB-02	Aqueous	06/22/2022 1815	06/24/2022
011	TB-05	Aqueous	06/22/2022	06/24/2022

(11 samples)

Detection Summary
Terracon Consultants, Inc.
Lot Number: XF24011
Project Name: TAMP
Project Number: 7021P145

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	RI-SB-20 (0-2)	Solid	Acetone	8260D	68		ug/kg	6
001	RI-SB-20 (0-2)	Solid	cis-1,2-Dichloroethene	8260D	35		ug/kg	6
001	RI-SB-20 (0-2)	Solid	trans-1,2-Dichloroethene	8260D	4.2	J	ug/kg	6
001	RI-SB-20 (0-2)	Solid	Trichloroethene	8260D	190		ug/kg	7
001	RI-SB-20 (0-2)	Solid	Vinyl chloride	8260D	10		ug/kg	7
002	RI-SB-20 (4-6)	Solid	cis-1,2-Dichloroethene	8260D	25	S	ug/kg	8
002	RI-SB-20 (4-6)	Solid	1,1,2-Trichloro-1,2,2-	8260D	7.6	S	ug/kg	8
002	RI-SB-20 (4-6)	Solid	Trichloroethene	8260D	470		ug/kg	9
003	RI-SB-21 (0-2)	Solid	Acetone	8260D	63		ug/kg	10
003	RI-SB-21 (0-2)	Solid	1,1-Dichloroethane	8260D	8.6		ug/kg	10
003	RI-SB-21 (0-2)	Solid	cis-1,2-Dichloroethene	8260D	160		ug/kg	10
003	RI-SB-21 (0-2)	Solid	trans-1,2-Dichloroethene	8260D	9.7		ug/kg	10
003	RI-SB-21 (0-2)	Solid	Trichloroethene	8260D	8.9		ug/kg	11
003	RI-SB-21 (0-2)	Solid	Vinyl chloride	8260D	60		ug/kg	11
004	RI-SB-21 (2-4)	Solid	Acetone	8260D	83		ug/kg	12
004	RI-SB-21 (2-4)	Solid	1,1-Dichloroethane	8260D	1.9	J	ug/kg	12
004	RI-SB-21 (2-4)	Solid	cis-1,2-Dichloroethene	8260D	7.3		ug/kg	12
004	RI-SB-21 (2-4)	Solid	Trichloroethene	8260D	18		ug/kg	13
004	RI-SB-21 (2-4)	Solid	Vinyl chloride	8260D	60		ug/kg	13
005	RI-SB-22 (2-4)	Solid	Acetone	8260D	79		ug/kg	14
005	RI-SB-22 (2-4)	Solid	cis-1,2-Dichloroethene	8260D	410	E	ug/kg	14
005	RI-SB-22 (2-4)	Solid	trans-1,2-Dichloroethene	8260D	4.6	J	ug/kg	14
005	RI-SB-22 (2-4)	Solid	Trichloroethene	8260D	33		ug/kg	15
005	RI-SB-22 (2-4)	Solid	Vinyl chloride	8260D	6.8	J	ug/kg	15
006	RI-SB-22 (4-6)	Solid	1,1-Dichloroethane	8260D	2.4	J	ug/kg	16
006	RI-SB-22 (4-6)	Solid	1,1-Dichloroethene	8260D	2.5	J	ug/kg	16
006	RI-SB-22 (4-6)	Solid	cis-1,2-Dichloroethene	8260D	220	E	ug/kg	16
006	RI-SB-22 (4-6)	Solid	trans-1,2-Dichloroethene	8260D	3.4	J	ug/kg	16
006	RI-SB-22 (4-6)	Solid	Trichloroethene	8260D	550		ug/kg	17
007	RI-SB-22 (6-8)	Solid	cis-1,2-Dichloroethene	8260D	27		ug/kg	18
007	RI-SB-22 (6-8)	Solid	Trichloroethene	8260D	130		ug/kg	19
008	RI-SB-23 (6-8)	Solid	cis-1,2-Dichloroethene	8260D	2.4	J	ug/kg	20
008	RI-SB-23 (6-8)	Solid	Trichloroethene	8260D	6.4		ug/kg	21
009	RI-SB-23 (16-18)	Solid	Acetone	8260D	12	J	ug/kg	22
009	RI-SB-23 (16-18)	Solid	cis-1,2-Dichloroethene	8260D	21		ug/kg	22
009	RI-SB-23 (16-18)	Solid	Trichloroethene	8260D	5.7	J	ug/kg	23
010	EB-02	Aqueous	Acetone	8260D	12	J	ug/L	24
010	EB-02	Aqueous	Methylene chloride	8260D	0.96	J	ug/L	24
010	EB-02	Aqueous	Caprolactam	8270E	3.6		ug/L	26
010	EB-02	Aqueous	Di-n-butyl phthalate	8270E	0.64	J	ug/L	26

(40 detections)

Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24011-001**	
Description: **RI-SB-20 (0-2)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1600**	Project Name: **TAMP**	% Solids: **77.8**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1131	JM1		46672
2	5035	8260D	1	07/05/2022 1604	JM1		47052

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**68**		**20**	16	**8.2**	**ug/kg**	**1**
Benzene	71-43-2	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
Bromodichloromethane	75-27-4	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
Bromoform	75-25-2	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	6.0	U	10	6.0	3.1	ug/kg	1
2-Butanone (MEK)	78-93-3	8260D	8.0	U	20	8.0	4.1	ug/kg	1
Carbon disulfide	75-15-0	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
Carbon tetrachloride	56-23-5	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
Chlorobenzene	108-90-7	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
Chloroethane	75-00-3	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
Chloroform	67-66-3	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	6.0	U	10	6.0	3.1	ug/kg	1
Cyclohexane	110-82-7	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
Dibromochloromethane	124-48-1	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260D	6.0	U	10	6.0	3.1	ug/kg	1
1,1-Dichloroethane	75-34-3	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
1,2-Dichloroethane	107-06-2	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
1,1-Dichloroethene	75-35-4	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**35**		**5.1**	4.1	**2.0**	**ug/kg**	**1**
trans-1,2-Dichloroethene	**156-60-5**	**8260D**	**4.2**	**J**	**5.1**	4.1	**2.0**	**ug/kg**	**1**
1,2-Dichloropropane	78-87-5	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
Ethylbenzene	100-41-4	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
2-Hexanone	591-78-6	8260D	8.0	U	10	8.0	4.1	ug/kg	1
Isopropylbenzene	98-82-8	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
Methyl acetate	79-20-9	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260D	8.0	U	10	8.0	4.1	ug/kg	1
Methylcyclohexane	108-87-2	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
Methylene chloride	75-09-2	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
Styrene	100-42-5	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
Tetrachloroethene	127-18-4	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
Toluene	108-88-3	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24011-001**	
Description: **RI-SB-20 (0-2)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1600**	Project Name: **TAMP**	% Solids: **77.8**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1131	JM1		46672
2	5035	8260D	1	07/05/2022 1604	JM1		47052

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
Trichloroethene	**79-01-6**	**8260D**	**190**		**5.1**	4.1	**2.0**	**ug/kg**	**1**
Trichlorofluoromethane	75-69-4	8260D	4.1	U	5.1	4.1	2.0	ug/kg	1
Vinyl chloride	**75-01-4**	**8260D**	**10**		**10**	6.0	**3.1**	**ug/kg**	**2**
Xylenes (total)	1330-20-7	8260D	8.0	U	10	8.0	4.1	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		103	79-119		101	79-119
Dibromofluoromethane		118	78-119		102	78-119
1,2-Dichloroethane-d4		120	71-136		100	71-136
Toluene-d8		114	85-116		104	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24011-002**	
Description: **RI-SB-20 (4-6)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1605**	Project Name: **TAMP**	% Solids: **73.7**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260D	1	06/30/2022 1156	JM1		46672	
3	5035 High	8260D	1	07/06/2022 1123	JM1		47077	6.03

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	18	U	22	18	8.9	ug/kg	1
Benzene	71-43-2	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
Bromodichloromethane	75-27-4	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
Bromoform	75-25-2	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	6.6	US	11	6.6	3.4	ug/kg	1
2-Butanone (MEK)	78-93-3	8260D	8.8	U	22	8.8	4.5	ug/kg	1
Carbon disulfide	75-15-0	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
Carbon tetrachloride	56-23-5	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
Chlorobenzene	108-90-7	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
Chloroethane	75-00-3	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
Chloroform	67-66-3	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	6.6	U	11	6.6	3.4	ug/kg	1
Cyclohexane	110-82-7	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
Dibromochloromethane	124-48-1	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260D	6.6	U	11	6.6	3.4	ug/kg	1
1,1-Dichloroethane	75-34-3	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
1,2-Dichloroethane	107-06-2	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
1,1-Dichloroethene	75-35-4	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**25**	**S**	**5.6**	4.5	**2.2**	**ug/kg**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
1,2-Dichloropropane	78-87-5	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
Ethylbenzene	100-41-4	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
2-Hexanone	591-78-6	8260D	8.8	US	11	8.8	4.5	ug/kg	1
Isopropylbenzene	98-82-8	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
Methyl acetate	79-20-9	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260D	8.8	US	11	8.8	4.5	ug/kg	1
Methylcyclohexane	108-87-2	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
Methylene chloride	75-09-2	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
Styrene	100-42-5	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
Tetrachloroethene	127-18-4	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
Toluene	108-88-3	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**7.6**	**S**	**5.6**	4.5	**2.2**	**ug/kg**	**1**
1,2,4-Trichlorobenzene	120-82-1	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24011-002**	
Description: **RI-SB-20 (4-6)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1605**	Project Name: **TAMP**	% Solids: **73.7**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260D	1	06/30/2022 1156	JM1		46672	
3	5035 High	8260D	1	07/06/2022 1123	JM1		47077	6.03

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
Trichloroethene	**79-01-6**	**8260D**	**470**		**370**	300	**150**	**ug/kg**	**3**
Trichlorofluoromethane	75-69-4	8260D	4.5	US	5.6	4.5	2.2	ug/kg	1
Vinyl chloride	75-01-4	8260D	6.6	U	11	6.6	3.4	ug/kg	1
Xylenes (total)	1330-20-7	8260D	8.8	US	11	8.8	4.5	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 3 % Recovery	Acceptance Limits
Bromofluorobenzene		102	79-119		103	79-119
Dibromofluoromethane		113	78-119		106	78-119
1,2-Dichloroethane-d4		119	71-136		101	71-136
Toluene-d8		113	85-116		109	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24011-003**	
Description: **RI-SB-21 (0-2)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1630**	Project Name: **TAMP**	% Solids: **78.4**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1220	JM1		46672
2	5035	8260D	1	07/05/2022 1628	JM1		47052

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**63**		**20**	16	**8.0**	**ug/kg**	**1**
Benzene	71-43-2	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Bromodichloromethane	75-27-4	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Bromoform	75-25-2	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	6.0	U	10	6.0	3.0	ug/kg	1
2-Butanone (MEK)	78-93-3	8260D	8.0	U	20	8.0	4.0	ug/kg	1
Carbon disulfide	75-15-0	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Carbon tetrachloride	56-23-5	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Chlorobenzene	108-90-7	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Chloroethane	75-00-3	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Chloroform	67-66-3	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	6.0	U	10	6.0	3.0	ug/kg	1
Cyclohexane	110-82-7	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Dibromochloromethane	124-48-1	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260D	6.0	U	10	6.0	3.0	ug/kg	1
1,1-Dichloroethane	**75-34-3**	**8260D**	**8.6**		**5.0**	4.0	**2.0**	**ug/kg**	**1**
1,2-Dichloroethane	107-06-2	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
1,1-Dichloroethene	75-35-4	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**160**		**5.0**	4.0	**2.0**	**ug/kg**	**1**
trans-1,2-Dichloroethene	**156-60-5**	**8260D**	**9.7**		**5.0**	4.0	**2.0**	**ug/kg**	**1**
1,2-Dichloropropane	78-87-5	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Ethylbenzene	100-41-4	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
2-Hexanone	591-78-6	8260D	8.0	U	10	8.0	4.0	ug/kg	1
Isopropylbenzene	98-82-8	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Methyl acetate	79-20-9	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260D	8.0	U	10	8.0	4.0	ug/kg	1
Methylcyclohexane	108-87-2	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Methylene chloride	75-09-2	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Styrene	100-42-5	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Tetrachloroethene	127-18-4	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Toluene	108-88-3	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24011-003**	
Description: **RI-SB-21 (0-2)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1630**	Project Name: **TAMP**	% Solids: **78.4**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1220	JM1		46672
2	5035	8260D	1	07/05/2022 1628	JM1		47052

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Trichloroethene	**79-01-6**	**8260D**	**8.9**		**5.0**	4.0	**2.0**	**ug/kg**	**1**
Trichlorofluoromethane	75-69-4	8260D	4.0	U	5.0	4.0	2.0	ug/kg	1
Vinyl chloride	**75-01-4**	**8260D**	**60**		**11**	6.6	**3.2**	**ug/kg**	**2**
Xylenes (total)	1330-20-7	8260D	8.0	U	10	8.0	4.0	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		100	79-119		102	79-119
Dibromofluoromethane		112	78-119		111	78-119
1,2-Dichloroethane-d4		112	71-136		108	71-136
Toluene-d8		110	85-116		104	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24011-004**	
Description: **RI-SB-21 (2-4)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1645**	Project Name: **TAMP**	% Solids: **80.4**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1245	JM1		46672
2	5035	8260D	1	07/05/2022 1651	JM1		47052

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**83**		**17**	14	**6.9**	**ug/kg**	**1**
Benzene	71-43-2	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
Bromodichloromethane	75-27-4	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
Bromoform	75-25-2	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	5.2	U	8.6	5.2	2.6	ug/kg	1
2-Butanone (MEK)	78-93-3	8260D	6.8	U	17	6.8	3.5	ug/kg	1
Carbon disulfide	75-15-0	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
Carbon tetrachloride	56-23-5	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
Chlorobenzene	108-90-7	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
Chloroethane	75-00-3	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
Chloroform	67-66-3	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	5.2	U	8.6	5.2	2.6	ug/kg	1
Cyclohexane	110-82-7	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
Dibromochloromethane	124-48-1	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260D	5.2	U	8.6	5.2	2.6	ug/kg	1
1,1-Dichloroethane	**75-34-3**	**8260D**	**1.9**	**J**	**4.3**	3.4	**1.7**	**ug/kg**	**1**
1,2-Dichloroethane	107-06-2	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
1,1-Dichloroethene	75-35-4	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**7.3**		**4.3**	3.4	**1.7**	**ug/kg**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
1,2-Dichloropropane	78-87-5	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
Ethylbenzene	100-41-4	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
2-Hexanone	591-78-6	8260D	6.9	U	8.6	6.9	3.5	ug/kg	1
Isopropylbenzene	98-82-8	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
Methyl acetate	79-20-9	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260D	6.9	U	8.6	6.9	3.5	ug/kg	1
Methylcyclohexane	108-87-2	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
Methylene chloride	75-09-2	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
Styrene	100-42-5	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
Tetrachloroethene	127-18-4	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
Toluene	108-88-3	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24011-004**	
Description: **RI-SB-21 (2-4)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1645**	Project Name: **TAMP**	% Solids: **80.4**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1245	JM1		46672
2	5035	8260D	1	07/05/2022 1651	JM1		47052

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
Trichloroethene	**79-01-6**	**8260D**	**18**		**4.3**	3.4	**1.7**	**ug/kg**	**1**
Trichlorofluoromethane	75-69-4	8260D	3.4	U	4.3	3.4	1.7	ug/kg	1
Vinyl chloride	**75-01-4**	**8260D**	**60**		**10**	6.0	**3.0**	**ug/kg**	**2**
Xylenes (total)	1330-20-7	8260D	6.9	U	8.6	6.9	3.5	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		104	79-119		100	79-119
Dibromofluoromethane		116	78-119		102	78-119
1,2-Dichloroethane-d4		128	71-136		103	71-136
Toluene-d8		110	85-116		106	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24011-005**	
Description: **RI-SB-22 (2-4)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1730**	Project Name: **TAMP**	% Solids: **82.0**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1308	JM1		46672

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**79**		**21**	17	**8.3**	**ug/kg**	**1**
Benzene	71-43-2	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Bromodichloromethane	75-27-4	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Bromoform	75-25-2	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	6.0	U	10	6.0	3.1	ug/kg	1
2-Butanone (MEK)	78-93-3	8260D	8.4	U	21	8.4	4.2	ug/kg	1
Carbon disulfide	75-15-0	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Carbon tetrachloride	56-23-5	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Chlorobenzene	108-90-7	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Chloroethane	75-00-3	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Chloroform	67-66-3	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	6.0	U	10	6.0	3.1	ug/kg	1
Cyclohexane	110-82-7	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Dibromochloromethane	124-48-1	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260D	6.0	U	10	6.0	3.1	ug/kg	1
1,1-Dichloroethane	75-34-3	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
1,2-Dichloroethane	107-06-2	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
1,1-Dichloroethene	75-35-4	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**410**	**E**	**5.2**	4.2	**2.1**	**ug/kg**	**1**
trans-1,2-Dichloroethene	**156-60-5**	**8260D**	**4.6**	**J**	**5.2**	4.2	**2.1**	**ug/kg**	**1**
1,2-Dichloropropane	78-87-5	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Ethylbenzene	100-41-4	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
2-Hexanone	591-78-6	8260D	8.0	U	10	8.0	4.2	ug/kg	1
Isopropylbenzene	98-82-8	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Methyl acetate	79-20-9	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260D	8.0	U	10	8.0	4.2	ug/kg	1
Methylcyclohexane	108-87-2	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Methylene chloride	75-09-2	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Styrene	100-42-5	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Tetrachloroethene	127-18-4	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Toluene	108-88-3	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24011-005**	
Description: **RI-SB-22 (2-4)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1730**	Project Name: **TAMP**	% Solids: **82.0**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1308	JM1		46672

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**33**		**5.2**	4.2	**2.1**	**ug/kg**	**1**
Trichlorofluoromethane	75-69-4	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Vinyl chloride	**75-01-4**	**8260D**	**6.8**	**J**	**10**	6.0	**3.1**	**ug/kg**	**1**
Xylenes (total)	1330-20-7	8260D	8.0	U	10	8.0	4.2	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		101	79-119
Dibromofluoromethane		111	78-119
1,2-Dichloroethane-d4		112	71-136
Toluene-d8		110	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24011-006**	
Description: **RI-SB-22 (4-6)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1740**	Project Name: **TAMP**	% Solids: **71.8**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260D	1	06/30/2022 1332	JM1		46672	
3	5035 High	8260D	1	07/06/2022 1147	JM1		47077	5.96

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	17	U	21	17	8.3	ug/kg	1
Benzene	71-43-2	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Bromodichloromethane	75-27-4	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Bromoform	75-25-2	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	6.0	U	10	6.0	3.1	ug/kg	1
2-Butanone (MEK)	78-93-3	8260D	8.4	U	21	8.4	4.2	ug/kg	1
Carbon disulfide	75-15-0	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Carbon tetrachloride	56-23-5	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Chlorobenzene	108-90-7	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Chloroethane	75-00-3	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Chloroform	67-66-3	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	6.0	U	10	6.0	3.1	ug/kg	1
Cyclohexane	110-82-7	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Dibromochloromethane	124-48-1	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260D	6.0	U	10	6.0	3.1	ug/kg	1
1,1-Dichloroethane	**75-34-3**	**8260D**	**2.4**	**J**	**5.2**	4.2	**2.1**	**ug/kg**	**1**
1,2-Dichloroethane	107-06-2	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
1,1-Dichloroethene	**75-35-4**	**8260D**	**2.5**	**J**	**5.2**	4.2	**2.1**	**ug/kg**	**1**
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**220**	**E**	**5.2**	4.2	**2.1**	**ug/kg**	**1**
trans-1,2-Dichloroethene	**156-60-5**	**8260D**	**3.4**	**J**	**5.2**	4.2	**2.1**	**ug/kg**	**1**
1,2-Dichloropropane	78-87-5	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Ethylbenzene	100-41-4	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
2-Hexanone	591-78-6	8260D	8.0	U	10	8.0	4.2	ug/kg	1
Isopropylbenzene	98-82-8	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Methyl acetate	79-20-9	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260D	8.0	U	10	8.0	4.2	ug/kg	1
Methylcyclohexane	108-87-2	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Methylene chloride	75-09-2	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Styrene	100-42-5	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Tetrachloroethene	127-18-4	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Toluene	108-88-3	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24011-006**	
Description: **RI-SB-22 (4-6)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1740**	Project Name: **TAMP**	% Solids: **71.8**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260D	1	06/30/2022 1332	JM1		46672	
3	5035 High	8260D	1	07/06/2022 1147	JM1		47077	5.96

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Trichloroethene	**79-01-6**	**8260D**	**550**		**390**	310	**160**	**ug/kg**	**3**
Trichlorofluoromethane	75-69-4	8260D	4.2	U	5.2	4.2	2.1	ug/kg	1
Vinyl chloride	75-01-4	8260D	6.0	U	10	6.0	3.1	ug/kg	1
Xylenes (total)	1330-20-7	8260D	8.0	U	10	8.0	4.2	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 3 % Recovery	Acceptance Limits
Bromofluorobenzene		105	79-119		110	79-119
Dibromofluoromethane		114	78-119		110	78-119
1,2-Dichloroethane-d4		108	71-136		109	71-136
Toluene-d8		113	85-116		115	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24011-007**	
Description: **RI-SB-22 (6-8)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1745**	Project Name: **TAMP**	% Solids: **85.1**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5035	8260D	1	07/05/2022 1717	JM1		47052

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	15	U	19	15	7.6	ug/kg	2
Benzene	71-43-2	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
Bromodichloromethane	75-27-4	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
Bromoform	75-25-2	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
Bromomethane (Methyl bromide)	74-83-9	8260D	5.7	U	9.5	5.7	2.8	ug/kg	2
2-Butanone (MEK)	78-93-3	8260D	7.6	U	19	7.6	3.8	ug/kg	2
Carbon disulfide	75-15-0	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
Carbon tetrachloride	56-23-5	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
Chlorobenzene	108-90-7	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
Chloroethane	75-00-3	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
Chloroform	67-66-3	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
Chloromethane (Methyl chloride)	74-87-3	8260D	5.7	U	9.5	5.7	2.8	ug/kg	2
Cyclohexane	110-82-7	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
Dibromochloromethane	124-48-1	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
1,2-Dichlorobenzene	95-50-1	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
1,3-Dichlorobenzene	541-73-1	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
1,4-Dichlorobenzene	106-46-7	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
Dichlorodifluoromethane	75-71-8	8260D	5.7	U	9.5	5.7	2.8	ug/kg	2
1,1-Dichloroethane	75-34-3	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
1,2-Dichloroethane	107-06-2	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
1,1-Dichloroethene	75-35-4	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**27**		**4.7**	3.8	**1.9**	**ug/kg**	**2**
trans-1,2-Dichloroethene	156-60-5	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
1,2-Dichloropropane	78-87-5	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
cis-1,3-Dichloropropene	10061-01-5	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
trans-1,3-Dichloropropene	10061-02-6	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
Ethylbenzene	100-41-4	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
2-Hexanone	591-78-6	8260D	7.6	U	9.5	7.6	3.8	ug/kg	2
Isopropylbenzene	98-82-8	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
Methyl acetate	79-20-9	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
4-Methyl-2-pentanone	108-10-1	8260D	7.6	U	9.5	7.6	3.8	ug/kg	2
Methylcyclohexane	108-87-2	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
Methylene chloride	75-09-2	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
Styrene	100-42-5	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
Tetrachloroethene	127-18-4	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
Toluene	108-88-3	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
1,2,4-Trichlorobenzene	120-82-1	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
1,1,1-Trichloroethane	71-55-6	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
1,1,2-Trichloroethane	79-00-5	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24011-007**	
Description: **RI-SB-22 (6-8)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1745**	Project Name: **TAMP**	% Solids: **85.1**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5035	8260D	1	07/05/2022 1717	JM1		47052

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**130**		**4.7**	3.8	**1.9**	**ug/kg**	**2**
Trichlorofluoromethane	75-69-4	8260D	3.8	U	4.7	3.8	1.9	ug/kg	2
Vinyl chloride	75-01-4	8260D	5.7	U	9.5	5.7	2.8	ug/kg	2
Xylenes (total)	1330-20-7	8260D	7.6	U	9.5	7.6	3.8	ug/kg	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		101	79-119
Dibromofluoromethane		97	78-119
1,2-Dichloroethane-d4		95	71-136
Toluene-d8		110	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24011-008**	
Description: **RI-SB-23 (6-8)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1755**	Project Name: **TAMP**	% Solids: **84.7**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1420	JM1		46672

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	15	U	19	15	7.5	ug/kg	1
Benzene	71-43-2	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Bromodichloromethane	75-27-4	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Bromoform	75-25-2	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	5.6	U	9.3	5.6	2.8	ug/kg	1
2-Butanone (MEK)	78-93-3	8260D	7.6	U	19	7.6	3.7	ug/kg	1
Carbon disulfide	75-15-0	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Carbon tetrachloride	56-23-5	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Chlorobenzene	108-90-7	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Chloroethane	75-00-3	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Chloroform	67-66-3	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	5.6	U	9.3	5.6	2.8	ug/kg	1
Cyclohexane	110-82-7	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Dibromochloromethane	124-48-1	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260D	5.6	U	9.3	5.6	2.8	ug/kg	1
1,1-Dichloroethane	75-34-3	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,2-Dichloroethane	107-06-2	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,1-Dichloroethene	75-35-4	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**2.4**	**J**	**4.7**	3.8	**1.9**	**ug/kg**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,2-Dichloropropane	78-87-5	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Ethylbenzene	100-41-4	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
2-Hexanone	591-78-6	8260D	7.4	U	9.3	7.4	3.7	ug/kg	1
Isopropylbenzene	98-82-8	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Methyl acetate	79-20-9	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260D	7.4	U	9.3	7.4	3.7	ug/kg	1
Methylcyclohexane	108-87-2	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Methylene chloride	75-09-2	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Styrene	100-42-5	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Tetrachloroethene	127-18-4	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Toluene	108-88-3	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24011-008**	
Description: **RI-SB-23 (6-8)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1755**	Project Name: **TAMP**	% Solids: **84.7**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1420	JM1		46672

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**6.4**		**4.7**	3.8	**1.9**	**ug/kg**	**1**
Trichlorofluoromethane	75-69-4	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Vinyl chloride	75-01-4	8260D	5.6	U	9.3	5.6	2.8	ug/kg	1
Xylenes (total)	1330-20-7	8260D	7.4	U	9.3	7.4	3.7	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		100	79-119
Dibromofluoromethane		113	78-119
1,2-Dichloroethane-d4		107	71-136
Toluene-d8		110	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24011-009**	
Description: **RI-SB-23 (16-18)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1800**	Project Name: **TAMP**	% Solids: **83.5**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1809	JM1		46673
2	5035	8260D	1	07/05/2022 1741	JM1		47052

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**12**	**J**	**22**	18	**8.7**	**ug/kg**	**1**
Benzene	71-43-2	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
Bromodichloromethane	75-27-4	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
Bromoform	75-25-2	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	6.6	U	11	6.6	3.3	ug/kg	1
2-Butanone (MEK)	78-93-3	8260D	8.8	U	22	8.8	4.4	ug/kg	1
Carbon disulfide	75-15-0	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
Carbon tetrachloride	56-23-5	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
Chlorobenzene	108-90-7	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
Chloroethane	75-00-3	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
Chloroform	67-66-3	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	6.6	UL	11	6.6	3.3	ug/kg	1
Cyclohexane	110-82-7	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
Dibromochloromethane	124-48-1	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260D	6.6	UL	11	6.6	3.3	ug/kg	1
1,1-Dichloroethane	75-34-3	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
1,2-Dichloroethane	107-06-2	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
1,1-Dichloroethene	75-35-4	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**21**		**5.5**	4.4	**2.2**	**ug/kg**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
1,2-Dichloropropane	78-87-5	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
Ethylbenzene	100-41-4	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
2-Hexanone	591-78-6	8260D	8.8	U	11	8.8	4.4	ug/kg	1
Isopropylbenzene	98-82-8	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
Methyl acetate	79-20-9	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260D	8.8	U	11	8.8	4.4	ug/kg	1
Methylcyclohexane	108-87-2	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
Methylene chloride	75-09-2	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
Styrene	100-42-5	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
Tetrachloroethene	127-18-4	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
Toluene	108-88-3	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24011-009**	
Description: **RI-SB-23 (16-18)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1800**	Project Name: **TAMP**	% Solids: **83.5**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1809	JM1		46673
2	5035	8260D	1	07/05/2022 1741	JM1		47052

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
Trichloroethene	**79-01-6**	**8260D**	**5.7**	**J**	**6.3**	5.0	**2.5**	**ug/kg**	**2**
Trichlorofluoromethane	75-69-4	8260D	4.4	U	5.5	4.4	2.2	ug/kg	1
Vinyl chloride	75-01-4	8260D	6.6	UL	11	6.6	3.3	ug/kg	1
Xylenes (total)	1330-20-7	8260D	8.8	U	11	8.8	4.4	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		104	79-119		106	79-119
Dibromofluoromethane		101	78-119		98	78-119
1,2-Dichloroethane-d4		106	71-136		98	71-136
Toluene-d8		107	85-116		102	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XF24011-010**

Description: **EB-02** Matrix: **Aqueous**

Date Sampled: **06/22/2022 1815** Project Name: **TAMP**

Date Received: **06/24/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	06/27/2022 2305	SDC		46330

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**12**	**J**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	**75-09-2**	**8260D**	**0.96**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24011-010**	
Description: **EB-02**		Matrix: **Aqueous**	
Date Sampled: **06/22/2022 1815**	Project Name: **TAMP**		
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	06/27/2022 2305	SDC		46330

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		97	81-118
Bromofluorobenzene		105	85-114
Toluene-d8		97	89-112
Dibromofluoromethane		101	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XF24011-010**

Description: **EB-02** Matrix: **Aqueous**

Date Sampled: **06/22/2022 1815** Project Name: **TAMP**

Date Received: **06/24/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	07/09/2022 1759	CMF	06/27/2022 1218	46248

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	**105-60-2**	**8270E**	**3.6**		**3.0**	2.0	**1.0**	**ug/L**	**1**
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	**84-74-2**	**8270E**	**0.64**	**J**	**1.6**	1.0	**0.50**	**ug/L**	**1**
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation | B = Detected in the method blank | E = Quantitation of compound exceeded the calibration range | DL = Detection Limit | Q = Surrogate failure

U = Not detected at or above the LOD | N = Recovery is out of criteria | P = The RPD between two GC columns exceeds 40% | J = Estimated result < LOQ and ≥ DL | L = LCS/LCSD failure

H = Out of holding time | W = Reported on wet weight basis | LOD = Limit of Detection | S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XF24011-010**

Description: **EB-02** Matrix: **Aqueous**

Date Sampled: **06/22/2022 1815** Project Name: **TAMP**

Date Received: **06/24/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	07/09/2022 1759	CMF	06/27/2022 1218	46248

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		70	44-119
2-Fluorophenol		54	19-119
Nitrobenzene-d5		55	44-120
Phenol-d5		53	10-115
Terphenyl-d14		101	50-134
2,4,6-Tribromophenol		51	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.** Laboratory ID: **XF24011-010**

Description: **EB-02** Matrix: **Aqueous**

Date Sampled: **06/22/2022 1815** Project Name: **TAMP**

Date Received: **06/24/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	07/02/2022 2033	BPK	06/27/2022 1524	46273
1		7470A	1	07/01/2022 0707	JAB2	07/01/2022 0418	46786

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	7440-39-3	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Cadmium	7440-43-9	6020B	0.25	U	0.50	0.25	0.13	ug/L	1
Chromium	7440-47-3	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Lead	7439-92-1	6020B	0.50	U	1.0	0.50	0.25	ug/L	1
Mercury	7439-97-6	7470A	0.00018	U	0.00020	0.00018	0.000091	mg/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XF24011-011**

Description: **TB-05** Matrix: **Aqueous**

Date Sampled: **06/22/2022** Project Name: **TAMP**

Date Received: **06/24/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	06/27/2022 2328	SDC		46330

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*
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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24011-011**	
Description: **TB-05**		Matrix: **Aqueous**	
Date Sampled: **06/22/2022**	Project Name: **TAMP**		
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	06/27/2022 2328	SDC		46330

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		97	81-118
Bromofluorobenzene		98	85-114
Toluene-d8		97	89-112
Dibromofluoromethane		99	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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QC Summary

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46330-001
Batch: 46330
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	06/27/2022 2134
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	06/27/2022 2134
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	06/27/2022 2134
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	06/27/2022 2134
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	06/27/2022 2134
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	06/27/2022 2134
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	06/27/2022 2134
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	06/27/2022 2134
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	06/27/2022 2134
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	06/27/2022 2134
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	06/27/2022 2134
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46330-001
Batch: 46330
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	06/27/2022 2134

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		101	81-118
Bromofluorobenzene		103	85-114
Toluene-d8		97	89-112
Dibromofluoromethane		101	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46330-002
Batch: 46330
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	95		1	95	39-160	06/27/2022 2031
Benzene	50	49		1	98	79-120	06/27/2022 2031
Bromodichloromethane	50	46		1	92	79-125	06/27/2022 2031
Bromoform	50	43		1	87	66-130	06/27/2022 2031
Bromomethane (Methyl bromide)	50	51		1	103	53-141	06/27/2022 2031
2-Butanone (MEK)	100	94		1	94	56-143	06/27/2022 2031
Carbon disulfide	50	50		1	100	64-133	06/27/2022 2031
Carbon tetrachloride	50	49		1	98	72-136	06/27/2022 2031
Chlorobenzene	50	49		1	97	82-118	06/27/2022 2031
Chloroethane	50	48		1	97	60-138	06/27/2022 2031
Chloroform	50	49		1	99	79-124	06/27/2022 2031
Chloromethane (Methyl chloride)	50	43		1	86	50-139	06/27/2022 2031
Cyclohexane	50	46		1	91	71-130	06/27/2022 2031
1,2-Dibromo-3-chloropropane (DBCP)	50	42		1	85	62-128	06/27/2022 2031
Dibromochloromethane	50	47		1	95	74-126	06/27/2022 2031
1,2-Dibromoethane (EDB)	50	49		1	99	77-121	06/27/2022 2031
1,2-Dichlorobenzene	50	49		1	98	80-119	06/27/2022 2031
1,3-Dichlorobenzene	50	49		1	99	80-119	06/27/2022 2031
1,4-Dichlorobenzene	50	49		1	98	79-118	06/27/2022 2031
Dichlorodifluoromethane	50	44		1	88	32-152	06/27/2022 2031
1,1-Dichloroethane	50	48		1	97	77-125	06/27/2022 2031
1,2-Dichloroethane	50	48		1	97	73-128	06/27/2022 2031
1,1-Dichloroethene	50	51		1	102	71-131	06/27/2022 2031
cis-1,2-Dichloroethene	50	50		1	99	78-123	06/27/2022 2031
trans-1,2-Dichloroethene	50	50		1	99	75-124	06/27/2022 2031
1,2-Dichloropropane	50	47		1	94	78-122	06/27/2022 2031
cis-1,3-Dichloropropene	50	48		1	95	75-124	06/27/2022 2031
trans-1,3-Dichloropropene	50	49		1	99	73-127	06/27/2022 2031
Ethylbenzene	50	48		1	96	79-121	06/27/2022 2031
2-Hexanone	100	92		1	92	57-139	06/27/2022 2031
Isopropylbenzene	50	48		1	96	72-131	06/27/2022 2031
Methyl acetate	50	40		1	80	56-136	06/27/2022 2031
Methyl tertiary butyl ether (MTBE)	50	48		1	97	71-124	06/27/2022 2031
4-Methyl-2-pentanone	100	93		1	93	67-130	06/27/2022 2031
Methylcyclohexane	50	47		1	94	72-132	06/27/2022 2031
Methylene chloride	50	47		1	93	74-124	06/27/2022 2031
Styrene	50	48		1	97	78-123	06/27/2022 2031
1,1,2,2-Tetrachloroethane	50	47		1	95	71-121	06/27/2022 2031
Tetrachloroethene	50	52		1	104	74-129	06/27/2022 2031
Toluene	50	50		1	99	80-121	06/27/2022 2031
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	51		1	102	70-136	06/27/2022 2031
1,2,4-Trichlorobenzene	50	47		1	95	69-130	06/27/2022 2031
1,1,1-Trichloroethane	50	49		1	97	74-131	06/27/2022 2031
1,1,2-Trichloroethane	50	49		1	98	80-119	06/27/2022 2031

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46330-002
Batch: 46330
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	52		1	103	79-123	06/27/2022 2031
Trichlorofluoromethane	50	50		1	100	65-141	06/27/2022 2031
Vinyl chloride	50	48		1	96	58-137	06/27/2022 2031
Xylenes (total)	100	97		1	97	79-121	06/27/2022 2031

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		93	81-118
Bromofluorobenzene		93	85-114
Toluene-d8		97	89-112
Dibromofluoromethane		98	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: XQ46330-003
Batch: 46330
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acetone	100	96		1	96	0.94	39-160	20	06/28/2022 0014
Benzene	50	50		1	101	2.8	79-120	20	06/28/2022 0014
Bromodichloromethane	50	46		1	93	0.28	79-125	20	06/28/2022 0014
Bromoform	50	42		1	85	2.1	66-130	20	06/28/2022 0014
Bromomethane (Methyl bromide)	50	51		1	101	1.4	53-141	20	06/28/2022 0014
2-Butanone (MEK)	100	120	+	1	119	23	56-143	20	06/28/2022 0014
Carbon disulfide	50	46		1	92	8.5	64-133	20	06/28/2022 0014
Carbon tetrachloride	50	48		1	96	1.9	72-136	20	06/28/2022 0014
Chlorobenzene	50	49		1	97	0.14	82-118	20	06/28/2022 0014
Chloroethane	50	48		1	96	0.68	60-138	20	06/28/2022 0014
Chloroform	50	49		1	97	1.3	79-124	20	06/28/2022 0014
Chloromethane (Methyl chloride)	50	42		1	85	1.2	50-139	20	06/28/2022 0014
Cyclohexane	50	45		1	91	0.80	71-130	20	06/28/2022 0014
1,2-Dibromo-3-chloropropane (DBCP)	50	36		1	72	15	62-128	20	06/28/2022 0014
Dibromochloromethane	50	47		1	94	1.0	74-126	20	06/28/2022 0014
1,2-Dibromoethane (EDB)	50	51		1	102	3.0	77-121	20	06/28/2022 0014
1,2-Dichlorobenzene	50	46		1	92	6.9	80-119	20	06/28/2022 0014
1,3-Dichlorobenzene	50	48		1	95	3.4	80-119	20	06/28/2022 0014
1,4-Dichlorobenzene	50	47		1	95	2.9	79-118	20	06/28/2022 0014
Dichlorodifluoromethane	50	43		1	85	3.2	32-152	20	06/28/2022 0014
1,1-Dichloroethane	50	48		1	95	1.5	77-125	20	06/28/2022 0014
1,2-Dichloroethane	50	49		1	97	0.75	73-128	20	06/28/2022 0014
1,1-Dichloroethene	50	48		1	96	6.3	71-131	20	06/28/2022 0014
cis-1,2-Dichloroethene	50	50		1	101	1.2	78-123	20	06/28/2022 0014
trans-1,2-Dichloroethene	50	48		1	97	2.6	75-124	20	06/28/2022 0014
1,2-Dichloropropane	50	49		1	98	3.7	78-122	20	06/28/2022 0014
cis-1,3-Dichloropropene	50	48		1	95	0.22	75-124	20	06/28/2022 0014
trans-1,3-Dichloropropene	50	47		1	94	4.8	73-127	20	06/28/2022 0014
Ethylbenzene	50	48		1	97	0.98	79-121	20	06/28/2022 0014
2-Hexanone	100	110		1	106	14	57-139	20	06/28/2022 0014
Isopropylbenzene	50	44		1	88	7.6	72-131	20	06/28/2022 0014
Methyl acetate	50	42		1	84	4.8	56-136	20	06/28/2022 0014
Methyl tertiary butyl ether (MTBE)	50	49		1	97	0.57	71-124	20	06/28/2022 0014
4-Methyl-2-pentanone	100	100		1	104	11	67-130	20	06/28/2022 0014
Methylcyclohexane	50	46		1	92	2.2	72-132	20	06/28/2022 0014
Methylene chloride	50	47		1	93	0.42	74-124	20	06/28/2022 0014
Styrene	50	49		1	99	2.1	78-123	20	06/28/2022 0014
1,1,2,2-Tetrachloroethane	50	47		1	94	1.2	71-121	20	06/28/2022 0014
Tetrachloroethene	50	52		1	103	0.85	74-129	20	06/28/2022 0014
Toluene	50	49		1	98	1.4	80-121	20	06/28/2022 0014
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	50		1	99	3.0	70-136	20	06/28/2022 0014
1,2,4-Trichlorobenzene	50	40		1	80	17	69-130	20	06/28/2022 0014
1,1,1-Trichloroethane	50	48		1	96	1.4	74-131	20	06/28/2022 0014
1,1,2-Trichloroethane	50	50		1	99	1.4	80-119	20	06/28/2022 0014

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: XQ46330-003
Batch: 46330
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Trichloroethene	50	52		1	104	0.24	79-123	20	06/28/2022 0014
Trichlorofluoromethane	50	48		1	96	4.1	65-141	20	06/28/2022 0014
Vinyl chloride	50	48		1	96	0.15	58-137	20	06/28/2022 0014
Xylenes (total)	100	96		1	96	0.99	79-121	20	06/28/2022 0014

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		94	81-118
Bromofluorobenzene		96	85-114
Toluene-d8		96	89-112
Dibromofluoromethane		97	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46672-001
Batch: 46672
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	16	U	1	20	16	8.0	ug/kg	06/30/2022 1005
Benzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
Bromodichloromethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
Bromoform	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
Bromomethane (Methyl bromide)	6.0	U	1	10	6.0	3.0	ug/kg	06/30/2022 1005
2-Butanone (MEK)	8.0	U	1	20	8.0	4.0	ug/kg	06/30/2022 1005
Carbon disulfide	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
Carbon tetrachloride	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
Chlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
Chloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
Chloroform	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
Chloromethane (Methyl chloride)	6.0	U	1	10	6.0	3.0	ug/kg	06/30/2022 1005
Cyclohexane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
1,2-Dibromo-3-chloropropane (DBCP)	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
Dibromochloromethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
1,2-Dibromoethane (EDB)	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
1,2-Dichlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
1,3-Dichlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
1,4-Dichlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
Dichlorodifluoromethane	6.0	U	1	10	6.0	3.0	ug/kg	06/30/2022 1005
1,1-Dichloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
1,2-Dichloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
1,1-Dichloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
cis-1,2-Dichloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
trans-1,2-Dichloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
1,2-Dichloropropane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
cis-1,3-Dichloropropene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
trans-1,3-Dichloropropene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
Ethylbenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
2-Hexanone	8.0	U	1	10	8.0	4.0	ug/kg	06/30/2022 1005
Isopropylbenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
Methyl acetate	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
Methyl tertiary butyl ether (MTBE)	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
4-Methyl-2-pentanone	8.0	U	1	10	8.0	4.0	ug/kg	06/30/2022 1005
Methylcyclohexane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
Methylene chloride	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
Styrene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
1,1,2,2-Tetrachloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
Tetrachloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
Toluene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
1,1,2-Trichloro-1,2,2-Trifluoroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
1,2,4-Trichlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
1,1,1-Trichloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
1,1,2-Trichloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46672-001
Batch: 46672
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
Trichlorofluoromethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 1005
Vinyl chloride	6.0	U	1	10	6.0	3.0	ug/kg	06/30/2022 1005
Xylenes (total)	8.0	U	1	10	8.0	4.0	ug/kg	06/30/2022 1005

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		99	79-119
Dibromofluoromethane		110	78-119
1,2-Dichloroethane-d4		110	71-136
Toluene-d8		107	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46672-002
Batch: 46672
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	86		1	86	36-164	06/30/2022 0940
Benzene	50	52		1	103	77-121	06/30/2022 0940
Bromodichloromethane	50	54		1	108	75-127	06/30/2022 0940
Bromoform	50	52		1	105	67-132	06/30/2022 0940
Bromomethane (Methyl bromide)	50	51		1	101	53-143	06/30/2022 0940
2-Butanone (MEK)	100	95		1	95	51-148	06/30/2022 0940
Carbon disulfide	50	47		1	94	63-132	06/30/2022 0940
Carbon tetrachloride	50	49		1	99	70-135	06/30/2022 0940
Chlorobenzene	50	50		1	101	79-120	06/30/2022 0940
Chloroethane	50	52		1	104	59-139	06/30/2022 0940
Chloroform	50	51		1	103	78-123	06/30/2022 0940
Chloromethane (Methyl chloride)	50	54		1	108	50-136	06/30/2022 0940
Cyclohexane	50	45		1	89	67-131	06/30/2022 0940
1,2-Dibromo-3-chloropropane (DBCP)	50	46		1	92	61-132	06/30/2022 0940
Dibromochloromethane	50	53		1	107	75-127	06/30/2022 0940
1,2-Dibromoethane (EDB)	50	53		1	106	78-122	06/30/2022 0940
1,2-Dichlorobenzene	50	53		1	107	78-121	06/30/2022 0940
1,3-Dichlorobenzene	50	52		1	105	77-121	06/30/2022 0940
1,4-Dichlorobenzene	50	52		1	104	75-120	06/30/2022 0940
Dichlorodifluoromethane	50	42		1	83	29-149	06/30/2022 0940
1,1-Dichloroethane	50	48		1	97	76-125	06/30/2022 0940
1,2-Dichloroethane	50	54		1	108	73-128	06/30/2022 0940
1,1-Dichloroethene	50	47		1	95	70-131	06/30/2022 0940
cis-1,2-Dichloroethene	50	50		1	99	77-123	06/30/2022 0940
trans-1,2-Dichloroethene	50	50		1	100	74-125	06/30/2022 0940
1,2-Dichloropropane	50	51		1	103	76-123	06/30/2022 0940
cis-1,3-Dichloropropene	50	53		1	105	74-126	06/30/2022 0940
trans-1,3-Dichloropropene	50	52		1	104	71-130	06/30/2022 0940
Ethylbenzene	50	50		1	99	76-122	06/30/2022 0940
2-Hexanone	100	92		1	92	53-145	06/30/2022 0940
Isopropylbenzene	50	47		1	95	68-134	06/30/2022 0940
Methyl acetate	50	46		1	92	53-144	06/30/2022 0940
Methyl tertiary butyl ether (MTBE)	50	54		1	108	73-125	06/30/2022 0940
4-Methyl-2-pentanone	100	99		1	99	65-135	06/30/2022 0940
Methylcyclohexane	50	46		1	92	66-133	06/30/2022 0940
Methylene chloride	50	49		1	98	70-128	06/30/2022 0940
Styrene	50	51		1	102	76-124	06/30/2022 0940
1,1,2,2-Tetrachloroethane	50	49		1	97	70-124	06/30/2022 0940
Tetrachloroethene	50	52		1	104	73-128	06/30/2022 0940
Toluene	50	51		1	103	77-121	06/30/2022 0940
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	46		1	92	66-136	06/30/2022 0940
1,2,4-Trichlorobenzene	50	59		1	117	67-129	06/30/2022 0940
1,1,1-Trichloroethane	50	50		1	99	73-130	06/30/2022 0940
1,1,2-Trichloroethane	50	53		1	105	78-121	06/30/2022 0940

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46672-002
Batch: 46672
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	51		1	102	77-123	06/30/2022 0940
Trichlorofluoromethane	50	51		1	102	62-140	06/30/2022 0940
Vinyl chloride	50	61		1	122	56-135	06/30/2022 0940
Xylenes (total)	100	100		1	101	78-124	06/30/2022 0940

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		101	79-119
Dibromofluoromethane		104	78-119
1,2-Dichloroethane-d4		107	71-136
Toluene-d8		102	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MS

Sample ID: XF24011-002MS
Batch: 46672
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Sample Amount (ug/kg)	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	ND	110	81		1	75	36-164	06/30/2022 1933
Benzene	ND	54	39	N	1	73	77-121	06/30/2022 1933
Bromodichloromethane	ND	54	35	N	1	66	75-127	06/30/2022 1933
Bromoform	ND	54	29	N	1	54	67-132	06/30/2022 1933
Bromomethane (Methyl bromide)	ND	54	26	N	1	48	53-143	06/30/2022 1933
2-Butanone (MEK)	ND	110	70		1	65	51-148	06/30/2022 1933
Carbon disulfide	ND	54	47		1	87	63-132	06/30/2022 1933
Carbon tetrachloride	ND	54	46		1	85	70-135	06/30/2022 1933
Chlorobenzene	ND	54	35	N	1	64	79-120	06/30/2022 1933
Chloroethane	ND	54	25	N	1	46	59-139	06/30/2022 1933
Chloroform	ND	54	39	N	1	72	78-123	06/30/2022 1933
Chloromethane (Methyl chloride)	ND	54	27		1	50	50-136	06/30/2022 1933
Cyclohexane	ND	54	48		1	88	67-131	06/30/2022 1933
1,2-Dibromo-3-chloropropane (DBCP)	ND	54	26	N	1	48	61-132	06/30/2022 1933
Dibromochloromethane	ND	54	30	N	1	56	75-127	06/30/2022 1933
1,2-Dibromoethane (EDB)	ND	54	31	N	1	57	78-122	06/30/2022 1933
1,2-Dichlorobenzene	ND	54	32	N	1	59	78-121	06/30/2022 1933
1,3-Dichlorobenzene	ND	54	32	N	1	59	77-121	06/30/2022 1933
1,4-Dichlorobenzene	ND	54	32	N	1	60	75-120	06/30/2022 1933
Dichlorodifluoromethane	ND	54	25		1	47	29-149	06/30/2022 1933
1,1-Dichloroethane	ND	54	41		1	77	76-125	06/30/2022 1933
1,2-Dichloroethane	ND	54	36	N	1	67	73-128	06/30/2022 1933
1,1-Dichloroethene	ND	54	45		1	83	70-131	06/30/2022 1933
cis-1,2-Dichloroethene	25	54	59	N	1	62	77-123	06/30/2022 1933
trans-1,2-Dichloroethene	ND	54	43		1	80	74-125	06/30/2022 1933
1,2-Dichloropropane	ND	54	35	N	1	66	76-123	06/30/2022 1933
cis-1,3-Dichloropropene	ND	54	33	N	1	61	74-126	06/30/2022 1933
trans-1,3-Dichloropropene	ND	54	30	N	1	56	71-130	06/30/2022 1933
Ethylbenzene	ND	54	37	N	1	69	76-122	06/30/2022 1933
2-Hexanone	ND	110	59		1	55	53-145	06/30/2022 1933
Isopropylbenzene	ND	54	33	N	1	62	68-134	06/30/2022 1933
Methyl acetate	ND	54	29		1	55	53-144	06/30/2022 1933
Methyl tertiary butyl ether (MTBE)	ND	54	32	N	1	59	73-125	06/30/2022 1933
4-Methyl-2-pentanone	ND	110	58	N	1	54	65-135	06/30/2022 1933
Methylcyclohexane	ND	54	48		1	88	66-133	06/30/2022 1933
Methylene chloride	ND	54	35	N	1	65	70-128	06/30/2022 1933
Styrene	ND	54	35	N	1	65	76-124	06/30/2022 1933
1,1,2,2-Tetrachloroethane	ND	54	26	N	1	49	70-124	06/30/2022 1933
Tetrachloroethene	ND	54	40		1	75	73-128	06/30/2022 1933
Toluene	ND	54	39	N	1	71	77-121	06/30/2022 1933
1,1,2-Trichloro-1,2,2-Trifluoroethane	7.6	54	53		1	84	66-136	06/30/2022 1933
1,2,4-Trichlorobenzene	ND	54	33	N	1	61	67-129	06/30/2022 1933
1,1,1-Trichloroethane	ND	54	44		1	81	73-130	06/30/2022 1933
1,1,2-Trichloroethane	ND	54	31	N	1	57	78-121	06/30/2022 1933

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MS

Sample ID: XF24011-002MS
Batch: 46672
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Sample Amount (ug/kg)	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	330	54	330	N	1	-7.1	77-123	06/30/2022 1933
Trichlorofluoromethane	ND	54	27	N	1	49	62-140	06/30/2022 1933
Vinyl chloride	ND	54	37		1	68	56-135	06/30/2022 1933
Xylenes (total)	ND	110	73	N	1	68	78-124	06/30/2022 1933

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		111	79-119
Dibromofluoromethane		111	78-119
1,2-Dichloroethane-d4		121	71-136
Toluene-d8		107	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XF24011-002MD
Batch: 46672
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Sample Amount (ug/kg)	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acetone	ND	110	78		1	71	3.1	36-164	20	06/30/2022 1958
Benzene	ND	56	24	N,+	1	43	50	77-121	20	06/30/2022 1958
Bromodichloromethane	ND	56	23	N,+	1	42	41	75-127	20	06/30/2022 1958
Bromoform	ND	56	22	N,+	1	39	29	67-132	20	06/30/2022 1958
Bromomethane (Methyl bromide)	ND	56	53	+	1	96	70	53-143	20	06/30/2022 1958
2-Butanone (MEK)	ND	110	74		1	67	5.4	51-148	20	06/30/2022 1958
Carbon disulfide	ND	56	28	N,+	1	51	50	63-132	20	06/30/2022 1958
Carbon tetrachloride	ND	56	23	N,+	1	41	67	70-135	20	06/30/2022 1958
Chlorobenzene	ND	56	22	N,+	1	39	45	79-120	20	06/30/2022 1958
Chloroethane	ND	56	54	+	1	98	75	59-139	20	06/30/2022 1958
Chloroform	ND	56	24	N,+	1	44	46	78-123	20	06/30/2022 1958
Chloromethane (Methyl chloride)	ND	56	58	+	1	105	74	50-136	20	06/30/2022 1958
Cyclohexane	ND	56	23	N,+	1	42	69	67-131	20	06/30/2022 1958
1,2-Dibromo-3-chloropropane (DBCP)	ND	56	24	N	1	42	8.7	61-132	20	06/30/2022 1958
Dibromochloromethane	ND	56	21	N,+	1	39	34	75-127	20	06/30/2022 1958
1,2-Dibromoethane (EDB)	ND	56	24	N,+	1	43	26	78-122	20	06/30/2022 1958
1,2-Dichlorobenzene	ND	56	20	N,+	1	35	47	78-121	20	06/30/2022 1958
1,3-Dichlorobenzene	ND	56	19	N,+	1	34	51	77-121	20	06/30/2022 1958
1,4-Dichlorobenzene	ND	56	20	N,+	1	36	46	75-120	20	06/30/2022 1958
Dichlorodifluoromethane	ND	56	56	+	1	101	75	29-149	20	06/30/2022 1958
1,1-Dichloroethane	ND	56	26	N,+	1	47	44	76-125	20	06/30/2022 1958
1,2-Dichloroethane	ND	56	26	N,+	1	47	33	73-128	20	06/30/2022 1958
1,1-Dichloroethene	ND	56	26	N,+	1	47	52	70-131	20	06/30/2022 1958
cis-1,2-Dichloroethene	25	56	47	N,+	1	40	21	77-123	20	06/30/2022 1958
trans-1,2-Dichloroethene	ND	56	26	N,+	1	47	48	74-125	20	06/30/2022 1958
1,2-Dichloropropane	ND	56	23	N,+	1	41	44	76-123	20	06/30/2022 1958
cis-1,3-Dichloropropene	ND	56	23	N,+	1	41	38	74-126	20	06/30/2022 1958
trans-1,3-Dichloropropene	ND	56	21	N,+	1	39	33	71-130	20	06/30/2022 1958
Ethylbenzene	ND	56	20	N,+	1	37	59	76-122	20	06/30/2022 1958
2-Hexanone	ND	110	55	N	1	49	7.7	53-145	20	06/30/2022 1958
Isopropylbenzene	ND	56	17	N,+	1	31	64	68-134	20	06/30/2022 1958
Methyl acetate	ND	56	30		1	55	3.1	53-144	20	06/30/2022 1958
Methyl tertiary butyl ether (MTBE)	ND	56	23	N,+	1	41	33	73-125	20	06/30/2022 1958
4-Methyl-2-pentanone	ND	110	52	N	1	47	10	65-135	20	06/30/2022 1958
Methylcyclohexane	ND	56	21	N,+	1	37	79	66-133	20	06/30/2022 1958
Methylene chloride	ND	56	26	N,+	1	46	32	70-128	20	06/30/2022 1958
Styrene	ND	56	22	N,+	1	39	48	76-124	20	06/30/2022 1958
1,1,2,2-Tetrachloroethane	ND	56	21	N,+	1	38	21	70-124	20	06/30/2022 1958
Tetrachloroethene	ND	56	22	N,+	1	39	60	73-128	20	06/30/2022 1958
Toluene	ND	56	22	N,+	1	40	54	77-121	20	06/30/2022 1958
1,1,2-Trichloro-1,2,2-Trifluoroethane	7.6	56	32	N,+	1	45	48	66-136	20	06/30/2022 1958
1,2,4-Trichlorobenzene	ND	56	17	N,+	1	31	62	67-129	20	06/30/2022 1958
1,1,1-Trichloroethane	ND	56	23	N,+	1	42	61	73-130	20	06/30/2022 1958
1,1,2-Trichloroethane	ND	56	23	N,+	1	41	31	78-121	20	06/30/2022 1958

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XF24011-002MD
Batch: 46672
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Sample Amount (ug/kg)	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Trichloroethene	330	56	360	N	1	48	8.9	77-123	20	06/30/2022 1958
Trichlorofluoromethane	ND	56	55	+	1	100	70	62-140	20	06/30/2022 1958
Vinyl chloride	ND	56	70	+	1	127	63	56-135	20	06/30/2022 1958
Xylenes (total)	ND	110	40	N,+	1	36	58	78-124	20	06/30/2022 1958

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		109	79-119
Dibromofluoromethane		116	78-119
1,2-Dichloroethane-d4		128	71-136
Toluene-d8		111	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46673-001
Batch: 46673
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	16	U	1	20	16	8.0	ug/kg	06/30/2022 0959
Benzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Bromodichloromethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Bromoform	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Bromomethane (Methyl bromide)	6.0	U	1	10	6.0	3.0	ug/kg	06/30/2022 0959
2-Butanone (MEK)	8.0	U	1	20	8.0	4.0	ug/kg	06/30/2022 0959
Carbon disulfide	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Carbon tetrachloride	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Chlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Chloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Chloroform	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Chloromethane (Methyl chloride)	6.0	U	1	10	6.0	3.0	ug/kg	06/30/2022 0959
Cyclohexane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,2-Dibromo-3-chloropropane (DBCP)	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Dibromochloromethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,2-Dibromoethane (EDB)	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,2-Dichlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,3-Dichlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,4-Dichlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Dichlorodifluoromethane	6.0	U	1	10	6.0	3.0	ug/kg	06/30/2022 0959
1,1-Dichloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,2-Dichloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,1-Dichloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
cis-1,2-Dichloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
trans-1,2-Dichloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,2-Dichloropropane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
cis-1,3-Dichloropropene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
trans-1,3-Dichloropropene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Ethylbenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
2-Hexanone	8.0	U	1	10	8.0	4.0	ug/kg	06/30/2022 0959
Isopropylbenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Methyl acetate	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Methyl tertiary butyl ether (MTBE)	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
4-Methyl-2-pentanone	8.0	U	1	10	8.0	4.0	ug/kg	06/30/2022 0959
Methylcyclohexane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Methylene chloride	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Styrene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,1,2,2-Tetrachloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Tetrachloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Toluene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,1,2-Trichloro-1,2,2-Trifluoroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,2,4-Trichlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,1,1-Trichloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,1,2-Trichloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959

LOQ = Limit of Quantitation
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LOD = Limit of Detection

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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46673-001
Batch: 46673
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichlorofluoromethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Vinyl chloride	6.0	U	1	10	6.0	3.0	ug/kg	06/30/2022 0959
Xylenes (total)	8.0	U	1	10	8.0	4.0	ug/kg	06/30/2022 0959

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		108	79-119
Dibromofluoromethane		102	78-119
1,2-Dichloroethane-d4		107	71-136
Toluene-d8		105	85-116

LOQ = Limit of Quantitation
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LOD = Limit of Detection

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+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46673-002
Batch: 46673
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	110		1	109	36-164	06/30/2022 0936
Benzene	50	51		1	102	77-121	06/30/2022 0936
Bromodichloromethane	50	51		1	101	75-127	06/30/2022 0936
Bromoform	50	51		1	102	67-132	06/30/2022 0936
Bromomethane (Methyl bromide)	50	62		1	124	53-143	06/30/2022 0936
2-Butanone (MEK)	100	110		1	109	51-148	06/30/2022 0936
Carbon disulfide	50	51		1	102	63-132	06/30/2022 0936
Carbon tetrachloride	50	49		1	98	70-135	06/30/2022 0936
Chlorobenzene	50	50		1	100	79-120	06/30/2022 0936
Chloroethane	50	61		1	123	59-139	06/30/2022 0936
Chloroform	50	49		1	99	78-123	06/30/2022 0936
Chloromethane (Methyl chloride)	50	71	N	1	142	50-136	06/30/2022 0936
Cyclohexane	50	44		1	87	67-131	06/30/2022 0936
1,2-Dibromo-3-chloropropane (DBCP)	50	47		1	93	61-132	06/30/2022 0936
Dibromochloromethane	50	49		1	97	75-127	06/30/2022 0936
1,2-Dibromoethane (EDB)	50	50		1	100	78-122	06/30/2022 0936
1,2-Dichlorobenzene	50	47		1	95	78-121	06/30/2022 0936
1,3-Dichlorobenzene	50	50		1	99	77-121	06/30/2022 0936
1,4-Dichlorobenzene	50	50		1	99	75-120	06/30/2022 0936
Dichlorodifluoromethane	50	75	N	1	150	29-149	06/30/2022 0936
1,1-Dichloroethane	50	51		1	101	76-125	06/30/2022 0936
1,2-Dichloroethane	50	52		1	105	73-128	06/30/2022 0936
1,1-Dichloroethene	50	50		1	100	70-131	06/30/2022 0936
cis-1,2-Dichloroethene	50	49		1	99	77-123	06/30/2022 0936
trans-1,2-Dichloroethene	50	49		1	98	74-125	06/30/2022 0936
1,2-Dichloropropane	50	52		1	104	76-123	06/30/2022 0936
cis-1,3-Dichloropropene	50	51		1	103	74-126	06/30/2022 0936
trans-1,3-Dichloropropene	50	50		1	100	71-130	06/30/2022 0936
Ethylbenzene	50	51		1	101	76-122	06/30/2022 0936
2-Hexanone	100	100		1	100	53-145	06/30/2022 0936
Isopropylbenzene	50	48		1	97	68-134	06/30/2022 0936
Methyl acetate	50	47		1	94	53-144	06/30/2022 0936
Methyl tertiary butyl ether (MTBE)	50	47		1	93	73-125	06/30/2022 0936
4-Methyl-2-pentanone	100	100		1	100	65-135	06/30/2022 0936
Methylcyclohexane	50	51		1	101	66-133	06/30/2022 0936
Methylene chloride	50	51		1	102	70-128	06/30/2022 0936
Styrene	50	52		1	105	76-124	06/30/2022 0936
1,1,2,2-Tetrachloroethane	50	49		1	99	70-124	06/30/2022 0936
Tetrachloroethene	50	46		1	93	73-128	06/30/2022 0936
Toluene	50	46		1	91	77-121	06/30/2022 0936
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	49		1	99	66-136	06/30/2022 0936
1,2,4-Trichlorobenzene	50	46		1	93	67-129	06/30/2022 0936
1,1,1-Trichloroethane	50	49		1	98	73-130	06/30/2022 0936
1,1,2-Trichloroethane	50	49		1	98	78-121	06/30/2022 0936

LOQ = Limit of Quantitation
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LOD = Limit of Detection

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J = Estimated result < LOQ and ≥ DL
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N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46673-002
Batch: 46673
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichlorofluoromethane	50	54		1	107	62-140	06/30/2022 0936
Vinyl chloride	50	72	N	1	143	56-135	06/30/2022 0936
Xylenes (total)	100	99		1	99	78-124	06/30/2022 0936

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		96	79-119
Dibromofluoromethane		96	78-119
1,2-Dichloroethane-d4		103	71-136
Toluene-d8		92	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ47052-001
Batch: 47052
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	16	U	1	20	16	8.0	ug/kg	07/05/2022 1036
Benzene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Bromodichloromethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Bromoform	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Bromomethane (Methyl bromide)	6.0	U	1	10	6.0	3.0	ug/kg	07/05/2022 1036
2-Butanone (MEK)	8.0	U	1	20	8.0	4.0	ug/kg	07/05/2022 1036
Carbon disulfide	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Carbon tetrachloride	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Chlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Chloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Chloroform	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Chloromethane (Methyl chloride)	6.0	U	1	10	6.0	3.0	ug/kg	07/05/2022 1036
Cyclohexane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
1,2-Dibromo-3-chloropropane (DBCP)	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Dibromochloromethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
1,2-Dibromoethane (EDB)	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
1,2-Dichlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
1,3-Dichlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
1,4-Dichlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Dichlorodifluoromethane	6.0	U	1	10	6.0	3.0	ug/kg	07/05/2022 1036
1,1-Dichloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
1,2-Dichloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
1,1-Dichloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
cis-1,2-Dichloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
trans-1,2-Dichloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
1,2-Dichloropropane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
cis-1,3-Dichloropropene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
trans-1,3-Dichloropropene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Ethylbenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
2-Hexanone	8.0	U	1	10	8.0	4.0	ug/kg	07/05/2022 1036
Isopropylbenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Methyl acetate	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Methyl tertiary butyl ether (MTBE)	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
4-Methyl-2-pentanone	8.0	U	1	10	8.0	4.0	ug/kg	07/05/2022 1036
Methylcyclohexane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Methylene chloride	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Styrene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
1,1,2,2-Tetrachloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Tetrachloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Toluene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
1,1,2-Trichloro-1,2,2-Trifluoroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
1,2,4-Trichlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
1,1,1-Trichloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
1,1,2-Trichloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ47052-001
Batch: 47052
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Trichlorofluoromethane	4.0	U	1	5.0	4.0	2.0	ug/kg	07/05/2022 1036
Vinyl chloride	6.0	U	1	10	6.0	3.0	ug/kg	07/05/2022 1036
Xylenes (total)	8.0	U	1	10	8.0	4.0	ug/kg	07/05/2022 1036

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		97	79-119
Dibromofluoromethane		93	78-119
1,2-Dichloroethane-d4		98	71-136
Toluene-d8		99	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ47052-002
Batch: 47052
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	96		1	96	36-164	07/05/2022 1011
Benzene	50	48		1	97	77-121	07/05/2022 1011
Bromodichloromethane	50	48		1	96	75-127	07/05/2022 1011
Bromoform	50	50		1	101	67-132	07/05/2022 1011
Bromomethane (Methyl bromide)	50	44		1	88	53-143	07/05/2022 1011
2-Butanone (MEK)	100	97		1	97	51-148	07/05/2022 1011
Carbon disulfide	50	46		1	91	63-132	07/05/2022 1011
Carbon tetrachloride	50	48		1	95	70-135	07/05/2022 1011
Chlorobenzene	50	50		1	100	79-120	07/05/2022 1011
Chloroethane	50	45		1	91	59-139	07/05/2022 1011
Chloroform	50	45		1	91	78-123	07/05/2022 1011
Chloromethane (Methyl chloride)	50	47		1	94	50-136	07/05/2022 1011
Cyclohexane	50	46		1	92	67-131	07/05/2022 1011
1,2-Dibromo-3-chloropropane (DBCP)	50	49		1	99	61-132	07/05/2022 1011
Dibromochloromethane	50	51		1	102	75-127	07/05/2022 1011
1,2-Dibromoethane (EDB)	50	52		1	104	78-122	07/05/2022 1011
1,2-Dichlorobenzene	50	51		1	101	78-121	07/05/2022 1011
1,3-Dichlorobenzene	50	50		1	100	77-121	07/05/2022 1011
1,4-Dichlorobenzene	50	49		1	98	75-120	07/05/2022 1011
Dichlorodifluoromethane	50	50		1	100	29-149	07/05/2022 1011
1,1-Dichloroethane	50	44		1	89	76-125	07/05/2022 1011
1,2-Dichloroethane	50	46		1	92	73-128	07/05/2022 1011
1,1-Dichloroethene	50	46		1	93	70-131	07/05/2022 1011
cis-1,2-Dichloroethene	50	45		1	91	77-123	07/05/2022 1011
trans-1,2-Dichloroethene	50	46		1	93	74-125	07/05/2022 1011
1,2-Dichloropropane	50	47		1	94	76-123	07/05/2022 1011
cis-1,3-Dichloropropene	50	48		1	97	74-126	07/05/2022 1011
trans-1,3-Dichloropropene	50	52		1	103	71-130	07/05/2022 1011
Ethylbenzene	50	50		1	101	76-122	07/05/2022 1011
2-Hexanone	100	110		1	105	53-145	07/05/2022 1011
Isopropylbenzene	50	49		1	97	68-134	07/05/2022 1011
Methyl acetate	50	47		1	94	53-144	07/05/2022 1011
Methyl tertiary butyl ether (MTBE)	50	46		1	91	73-125	07/05/2022 1011
4-Methyl-2-pentanone	100	98		1	98	65-135	07/05/2022 1011
Methylcyclohexane	50	50		1	99	66-133	07/05/2022 1011
Methylene chloride	50	44		1	88	70-128	07/05/2022 1011
Styrene	50	51		1	102	76-124	07/05/2022 1011
1,1,2,2-Tetrachloroethane	50	50		1	100	70-124	07/05/2022 1011
Tetrachloroethene	50	52		1	104	73-128	07/05/2022 1011
Toluene	50	48		1	97	77-121	07/05/2022 1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	48		1	96	66-136	07/05/2022 1011
1,2,4-Trichlorobenzene	50	47		1	94	67-129	07/05/2022 1011
1,1,1-Trichloroethane	50	46		1	92	73-130	07/05/2022 1011
1,1,2-Trichloroethane	50	51		1	102	78-121	07/05/2022 1011

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ47052-002
Batch: 47052
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	49		1	97	77-123	07/05/2022 1011
Trichlorofluoromethane	50	48		1	95	62-140	07/05/2022 1011
Vinyl chloride	50	45		1	91	56-135	07/05/2022 1011
Xylenes (total)	100	100		1	101	78-124	07/05/2022 1011

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		94	79-119
Dibromofluoromethane		88	78-119
1,2-Dichloroethane-d4		94	71-136
Toluene-d8		92	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ47077-001
Batch: 47077
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035 High

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	200	U	1	250	200	100	ug/kg	07/05/2022 1225

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		87	79-119
Dibromofluoromethane		97	78-119
1,2-Dichloroethane-d4		96	71-136
Toluene-d8		92	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ47077-002
Batch: 47077
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035 High

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	2500	2500		1	100	77-123	07/05/2022 1201

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		95	79-119
Dibromofluoromethane		90	78-119
1,2-Dichloroethane-d4		88	71-136
Toluene-d8		96	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
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N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ46248-001
Batch: 46248
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 06/27/2022 1218

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acenaphthene	0.10	U	1	0.20	0.10	0.040	ug/L	07/09/2022 1124
Acenaphthylene	0.10	U	1	0.20	0.10	0.040	ug/L	07/09/2022 1124
Acetophenone	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
Anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	07/09/2022 1124
Atrazine	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
Benzaldehyde	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
Benzo(a)anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	07/09/2022 1124
Benzo(a)pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	07/09/2022 1124
Benzo(b)fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	07/09/2022 1124
Benzo(g,h,i)perylene	0.10	U	1	0.20	0.10	0.040	ug/L	07/09/2022 1124
Benzo(k)fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	07/09/2022 1124
1,1'-Biphenyl	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
4-Bromophenyl phenyl ether	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
Butyl benzyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
Caprolactam	2.0	U	1	3.0	2.0	1.0	ug/L	07/09/2022 1124
Carbazole	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
bis (2-Chloro-1-methylethyl) ether	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
4-Chloro-3-methyl phenol	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
4-Chloroaniline	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
bis(2-Chloroethoxy)methane	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
bis(2-Chloroethyl)ether	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
2-Chloronaphthalene	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
2-Chlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
4-Chlorophenyl phenyl ether	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
Chrysene	0.10	U	1	0.20	0.10	0.040	ug/L	07/09/2022 1124
Dibenzo(a,h)anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	07/09/2022 1124
Dibenzofuran	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
3,3'-Dichlorobenzidine	3.5	U	1	4.0	3.5	1.8	ug/L	07/09/2022 1124
2,4-Dichlorophenol	0.50	U	1	1.6	0.50	0.25	ug/L	07/09/2022 1124
Diethylphthalate	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
Dimethyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
2,4-Dimethylphenol	1.5	U	1	2.0	1.5	0.62	ug/L	07/09/2022 1124
Di-n-butyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
4,6-Dinitro-2-methylphenol	2.0	U	1	4.0	2.0	1.0	ug/L	07/09/2022 1124
2,4-Dinitrophenol	2.0	U	1	4.0	2.0	1.0	ug/L	07/09/2022 1124
2,4-Dinitrotoluene	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
2,6-Dinitrotoluene	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
Di-n-octylphthalate	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
bis(2-Ethylhexyl)phthalate	3.0	U	1	4.0	3.0	1.5	ug/L	07/09/2022 1124
Fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	07/09/2022 1124
Fluorene	0.10	U	1	0.20	0.10	0.040	ug/L	07/09/2022 1124
Hexachlorobenzene	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
Hexachlorobutadiene	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
Hexachlorocyclopentadiene	4.0	U	1	4.0	4.0	2.0	ug/L	07/09/2022 1124

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P = The RPD between two GC columns exceeds 40%
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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ46248-001
Batch: 46248
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 06/27/2022 1218

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Hexachloroethane	0.40	U	1	0.80	0.40	0.17	ug/L	07/09/2022 1124
Indeno(1,2,3-c,d)pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	07/09/2022 1124
Isophorone	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
2-Methylnaphthalene	0.10	U	1	0.20	0.10	0.040	ug/L	07/09/2022 1124
2-Methylphenol	1.3	U	1	1.6	1.3	0.67	ug/L	07/09/2022 1124
3+4-Methylphenol	3.0	U	1	4.0	3.0	1.5	ug/L	07/09/2022 1124
Naphthalene	0.10	U	1	0.20	0.10	0.040	ug/L	07/09/2022 1124
2-Nitroaniline	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
3-Nitroaniline	2.0	U	1	3.0	2.0	1.0	ug/L	07/09/2022 1124
4-Nitroaniline	3.0	U	1	4.0	3.0	1.5	ug/L	07/09/2022 1124
Nitrobenzene	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
2-Nitrophenol	2.0	U	1	3.2	2.0	1.0	ug/L	07/09/2022 1124
4-Nitrophenol	4.0	U	1	5.0	4.0	2.0	ug/L	07/09/2022 1124
N-Nitrosodi-n-propylamine	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
N-Nitrosodiphenylamine (Diphenylamine)	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
Pentachlorophenol	4.0	U	1	5.0	4.0	2.0	ug/L	07/09/2022 1124
Phenanthrene	0.10	U	1	0.20	0.10	0.040	ug/L	07/09/2022 1124
Phenol	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
Pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	07/09/2022 1124
2,4,5-Trichlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124
2,4,6-Trichlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	07/09/2022 1124

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		72	44-119
2-Fluorophenol		68	19-119
Nitrobenzene-d5		61	44-120
Phenol-d5		68	10-115
Terphenyl-d14		103	50-134
2,4,6-Tribromophenol		55	43-140

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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46248-002
Batch: 46248
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 06/27/2022 1218

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acenaphthene	8.0	7.0		1	88	47-122	07/14/2022 1203
Acenaphthylene	8.0	7.2		1	90	41-130	07/14/2022 1203
Acetophenone	8.0	7.0		1	88	46-118	07/14/2022 1203
Anthracene	8.0	7.1		1	89	57-123	07/14/2022 1203
Atrazine	8.0	6.8		1	85	44-142	07/14/2022 1203
Benzaldehyde	8.0	5.1		1	63	20-115	07/14/2022 1203
Benzo(a)anthracene	8.0	6.9		1	86	58-125	07/14/2022 1203
Benzo(a)pyrene	8.0	7.2		1	90	54-128	07/14/2022 1203
Benzo(b)fluoranthene	8.0	7.6		1	95	53-131	07/14/2022 1203
Benzo(g,h,i)perylene	8.0	7.8		1	97	50-134	07/14/2022 1203
Benzo(k)fluoranthene	8.0	7.1		1	89	57-129	07/14/2022 1203
1,1'-Biphenyl	8.0	6.6		1	83	49-115	07/14/2022 1203
4-Bromophenyl phenyl ether	8.0	7.2		1	90	55-124	07/14/2022 1203
Butyl benzyl phthalate	8.0	8.5		1	106	53-134	07/14/2022 1203
Caprolactam	8.0	11		1	134	44-152	07/14/2022 1203
Carbazole	8.0	6.8		1	85	60-122	07/14/2022 1203
bis (2-Chloro-1-methylethyl) ether	8.0	7.7		1	97	37-130	07/14/2022 1203
4-Chloro-3-methyl phenol	8.0	7.2		1	90	52-119	07/14/2022 1203
4-Chloroaniline	8.0	6.1		1	76	33-117	07/14/2022 1203
bis(2-Chloroethoxy)methane	8.0	7.4		1	93	48-120	07/14/2022 1203
bis(2-Chloroethyl)ether	8.0	7.0		1	87	43-118	07/14/2022 1203
2-Chloronaphthalene	8.0	6.8		1	85	40-116	07/14/2022 1203
2-Chlorophenol	8.0	7.0		1	88	38-117	07/14/2022 1203
4-Chlorophenyl phenyl ether	8.0	7.3		1	91	53-121	07/14/2022 1203
Chrysene	8.0	7.0		1	88	59-123	07/14/2022 1203
Dibenzo(a,h)anthracene	8.0	8.0		1	100	51-134	07/14/2022 1203
Dibenzofuran	8.0	6.5		1	82	53-118	07/14/2022 1203
3,3'-Dichlorobenzidine	8.0	3.6		1	45	27-129	07/14/2022 1203
2,4-Dichlorophenol	8.0	7.2		1	90	47-121	07/14/2022 1203
Diethylphthalate	8.0	7.8		1	97	56-125	07/14/2022 1203
Dimethyl phthalate	8.0	7.5		1	93	45-127	07/14/2022 1203
2,4-Dimethylphenol	8.0	6.8		1	85	31-124	07/14/2022 1203
Di-n-butyl phthalate	8.0	8.3		1	104	59-127	07/14/2022 1203
4,6-Dinitro-2-methylphenol	8.0	7.0		1	88	44-137	07/14/2022 1203
2,4-Dinitrophenol	16	11		1	70	23-143	07/14/2022 1203
2,4-Dinitrotoluene	8.0	7.2		1	91	57-128	07/14/2022 1203
2,6-Dinitrotoluene	8.0	6.9		1	86	57-124	07/14/2022 1203
Di-n-octylphthalate	8.0	7.3		1	91	51-140	07/14/2022 1203
bis(2-Ethylhexyl)phthalate	8.0	7.8		1	97	55-135	07/14/2022 1203
Fluoranthene	8.0	7.2		1	90	57-128	07/14/2022 1203
Fluorene	8.0	7.0		1	87	52-124	07/14/2022 1203
Hexachlorobenzene	8.0	6.7		1	84	53-125	07/14/2022 1203
Hexachlorobutadiene	8.0	5.8		1	72	22-124	07/14/2022 1203
Hexachlorocyclopentadiene	40	26		1	64	16-96	07/14/2022 1203

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46248-002
Batch: 46248
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 06/27/2022 1218

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Hexachloroethane	8.0	5.6		1	70	21-115	07/14/2022 1203
Indeno(1,2,3-c,d)pyrene	8.0	7.7		1	97	52-134	07/14/2022 1203
Isophorone	8.0	6.9		1	86	42-124	07/14/2022 1203
2-Methylnaphthalene	8.0	6.9		1	86	40-121	07/14/2022 1203
2-Methylphenol	8.0	5.9		1	74	30-117	07/14/2022 1203
3+4-Methylphenol	8.0	7.8		1	97	29-110	07/14/2022 1203
Naphthalene	8.0	6.9		1	86	40-121	07/14/2022 1203
2-Nitroaniline	8.0	7.7		1	97	55-127	07/14/2022 1203
3-Nitroaniline	8.0	4.7		1	58	41-128	07/14/2022 1203
4-Nitroaniline	8.0	5.6		1	69	30-135	07/14/2022 1203
Nitrobenzene	8.0	5.9		1	73	45-121	07/14/2022 1203
2-Nitrophenol	8.0	7.8		1	97	47-123	07/14/2022 1203
4-Nitrophenol	16	13		1	80	53-130	07/14/2022 1203
N-Nitrosodi-n-propylamine	8.0	7.5		1	94	49-119	07/14/2022 1203
N-Nitrosodiphenylamine (Diphenylamine)	8.0	7.4		1	93	51-123	07/14/2022 1203
Pentachlorophenol	16	14		1	86	35-138	07/14/2022 1203
Phenanthrene	8.0	7.0		1	87	59-120	07/14/2022 1203
Phenol	8.0	7.7		1	96	49-117	07/14/2022 1203
Pyrene	8.0	7.4		1	93	57-126	07/14/2022 1203
2,4,5-Trichlorophenol	8.0	6.9		1	86	53-123	07/14/2022 1203
2,4,6-Trichlorophenol	8.0	6.1		1	77	50-125	07/14/2022 1203

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		81	44-119
2-Fluorophenol		78	19-119
Nitrobenzene-d5		86	44-120
Phenol-d5		81	10-115
Terphenyl-d14		96	50-134
2,4,6-Tribromophenol		90	43-140

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MB

Sample ID: XQ46273-001
Batch: 46273
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 06/27/2022 1524

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Arsenic	2.5	U	1	5.0	2.5	1.3	ug/L	07/02/2022 1959
Barium	2.5	U	1	5.0	2.5	1.3	ug/L	07/02/2022 1959
Cadmium	0.25	U	1	0.50	0.25	0.13	ug/L	07/02/2022 1959
Chromium	2.5	U	1	5.0	2.5	1.3	ug/L	07/02/2022 1959
Lead	0.50	U	1	1.0	0.50	0.25	ug/L	07/02/2022 1959
Selenium	2.5	U	1	5.0	2.5	1.3	ug/L	07/02/2022 1959
Silver	0.50	U	1	1.0	0.50	0.25	ug/L	07/02/2022 1959

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - LCS

Sample ID: XQ46273-002
Batch: 46273
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 06/27/2022 1524

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Arsenic	100	100		1	105	84-116	07/02/2022 2003
Barium	100	100		1	103	86-114	07/02/2022 2003
Cadmium	100	100		1	104	87-115	07/02/2022 2003
Chromium	100	100		1	104	85-116	07/02/2022 2003
Lead	100	110		1	105	88-115	07/02/2022 2003
Selenium	100	110		1	107	80-120	07/02/2022 2003
Silver	100	100		1	104	85-116	07/02/2022 2003

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MB

Sample ID: XQ46786-001
Batch: 46786
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 07/01/2022 0418

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Mercury	0.00018	U	1	0.00020	0.00018	0.000091	mg/L	07/01/2022 0702

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - LCS

Sample ID: XQ46786-002
Batch: 46786
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 07/01/2022 0418

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Mercury	0.0020	0.0019		1	96	82-119	07/01/2022 0705

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MS

Sample ID: XF24011-010MS
Batch: 46786
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 07/01/2022 0418

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Mercury	ND	0.0020	0.0019		1	94	82-119	07/01/2022 0710

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MSD

Sample ID: XF24011-010MD
Batch: 46786
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 07/01/2022 0418

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Mercury	ND	0.0020	0.0019		1	95	0.27	82-119	20	07/01/2022 0713

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Chain of Custody
and
Miscellaneous Documents

PACE ANALYTICAL SERVICES, LLC

Pace Analytical®

PACE ANALYTICAL SERVICES, LLC
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.pacelabs.com

Number 134600

Client	Terracon Consultants Inc.
Address	2401 Brentwood Rd.
City	Raleigh
State	NC
Zip Code	27604
Project Name	T.A.M.P.
Project No.	7021 P145
P.O. No.	
Report to Contact	Ethan Dinwiddie
Sampler's Signature	
Printed Name	Ethan Dinwiddie
Telephone No. / E-mail	(828)-550-5502 / ethan.dinwiddie@terracon.com
Quote No.	25322
Page	1 of 2

Analysis (Attach list if more space is needed): VOCs 8260

XF24011

CSO

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	Grab/Composite	Aqueous	Solid	Non-Aqueous	Organic	H2SO4	HNO3	HCl	NaOH	None	Other	VOCs 8260	Remarks / Cooler I.D.
RI-SB-20 (0-2)	6/22	1600	G		X		1					1		X	
RI-SB-20 (4-6)	↓	1605	G		X		1					1		X	
MS/MSD-SB-03 (4-6)		1610	G		X		1					1		X	
RI-SB-21 (0-2)		1630	G		X		1					1		X	
RI-SB-21 (2-4)		1645	G		X		1					1		X	
RI-SB-22 (2-4)		1730	G		X		1					1		X	
RI-SB-22 (4-6)		1740	G		X		1					1		X	
RI-SB-22 (6-8)		1745	G		X		1					1		X	
RI-SB-23 (6-8)		1755	G		X		1					1		X	
RI-SB-23 (16-18)	↓	1800	G		X		1					1		X	

Turn Around Time Required (Prior lab approval required for expedited TAT.): ☒ Standard ☐ Rush (Specify)

Sample Disposal: ☐ Return to Client ☒ Disposal by Lab

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☒ Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by	6/23	1700	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by FedEx	6/24-22	0900	4. Laboratory Received by	6/24-22	0900

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Circle) Yes No Ice Pack Receipt Temp 4.2 °C
Temp Blank ☒ Y ☐ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME003N2-01

Pace Analytical

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Telephone No. 803-791-9700 Fax No. 803-791-9111
www.pacelabs.com

Number 134599

Client: Terracon Consultants Inc.
Report to Contact: Ethan Dinwiddie
Telephone No. / E-mail: (828)-550-5502 / ethan.dinwiddie@terracon.com
Quote No.: 26322
Address: 2401 Brentwood Rd.
Sampler's Signature: X
Analysis (Attach list if more space is needed)
Page 2 of 2
City: Raleigh | State: NC | Zip Code: 27604
Printed Name: Ethan Dinwiddie
Project Name: T.A.M.P.
XF24011
CSD
Project No.: 7021P145
P.O. No.:

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	Grab (G) Composite (C)	Matrix: Aqueous	Solid	Non-Aqueous	No of Containers by Preservative Type: Unpres.	H2SO4	HNO3	HCl	NaOH	NaS2O3	ZnAc/NaOH	VOCs 8260	SVOCs 8270	RCRA 8 Metals							Remarks / Cooler I.D.
EB-02	6/22	1815	G	X			2		1	3				X	X	X							
TB-05	6/22	—	G	X						2				X									

Turn Around Time Required (Prior lab approval required for expedited TAT.): ☒ Standard ☐ Rush (Specify)
Sample Disposal: ☐ Return to Client ☒ Disposal by Lab
Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☒ Unknown
QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by	6/23	1700	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by FedEx	6/24/22	0910	4. Laboratory Received by	6-24-22	0910

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on ice (Circle): Yes No Ice Pack
Receipt Temp. 4.2 °C
Temp Blank ☒ Y ☐ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME009N2-01

Pace Analytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: TERRACON Cooler Inspected by/date: TEC / 06/24/2022 Lot #: XF24011

Means of receipt: ☐ Pace ☐ Client ☐ UPS ☑ FedEx ☐ Other: _____

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: 22-1253

4.2 / 4.2 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 6 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☑ Yes	☐ No	☐ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? _____
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☑ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼" or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote # _____

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is ***no***) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: TEC Date: 06/24/2022

Comments:

Report of Analysis

Terracon Consultants, Inc.
2401 Brentwood Road
Suite 107 I
Raleigh, NC 27604
Attention: Ethan Dinwiddie

Project Name: TAMP

Project Number: 7021P145

Lot Number:**XF24012**

Date Completed:07/11/2022

07/21/2022 10:58 PM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.
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Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
Terracon Consultants, Inc.
Lot Number: XF24012

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Additionally, the DoD QSM version 5.3 has been followed for these samples. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs, the DoD QSM, or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

Where applicable, all soil sample results (including LOQ and DL if requested) are corrected for dry weight unless flagged with a "W" qualifier.

SVOA 8270E

The following samples were diluted due to appearance or extract color: XF24012-001 (RI-SB-13 (2-6)), XF24012-006 (RI-SB-18 (0-6)), XF24012-009 (RI-SB-21 (0-4)) and XF24012-012 (DUP-SB-02). The LOQ has been elevated to reflect the dilution.

The closing continuing calibration verification (CCV) associated with samples XF24012-001 (RI-SB-13 (2-6)), XF24012-002 (RI-SB-14 (0-4)), XF24012-003 (RI-SB-15 (2-4)), XF24012-004 (RI-SB-16 (0-4)), XF24012-005 (RI-SB-17 (0-6)), XF24012-006 (RI-SB-18 (0-6)), XF24012-007 (RI-SB-19 (0-4)), XF24012-008 (RI-SB-20 (0-6)), XF24012-009 (RI-SB-21 (0-4)), XF24012-010 (RI-SB-22 (0-8)), and XF24012-011 (RI-SB-23 (4-8))did not meet acceptance criteria. Sample matrix is suspected to have contributed to this failure.

Surrogate recovery for sample XF24012-002 (RI-SB-14 (0-4)) was outside control limits. Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

The initial calibration verification (ICV) associated with samples XF24012-001, XF24012-002, XF24012-003, XF24012-004, XF24012-005, XF24012-006, XF24012-007, XF24012-008, XF24012-009, XF24012-010, XF24012-011 exceeded DOD control criteria for 80-120 for Nitrobenzene (79%). The data has been reported.

XF24012-001 (RI-SB-13 (2-6)) (Run 1) (Analysis Batch 47154) (Prep Batch 46376)
XF24012-002 (RI-SB-14 (0-4)) (Run 1) (Analysis Batch 47154) (Prep Batch 46376)
XF24012-003 (RI-SB-15 (2-4)) (Run 1) (Analysis Batch 47154) (Prep Batch 46376)
XF24012-004 (RI-SB-16 (0-4)) (Run 1) (Analysis Batch 47154) (Prep Batch 46376)
XF24012-005 (RI-SB-17 (0-6)) (Run 1) (Analysis Batch 47154) (Prep Batch 46376)
XF24012-006 (RI-SB-18 (0-6)) (Run 1) (Analysis Batch 47154) (Prep Batch 46376)
XF24012-007 (RI-SB-19 (0-4)) (Run 1) (Analysis Batch 47154) (Prep Batch 46376)
XF24012-008 (RI-SB-20 (0-6)) (Run 1) (Analysis Batch 47154) (Prep Batch 46376)
XF24012-009 (RI-SB-21 (0-4)) (Run 1) (Analysis Batch 47154) (Prep Batch 46376)
XF24012-010 (RI-SB-22 (0-8)) (Run 1) (Analysis Batch 47154) (Prep Batch 46376)
XF24012-011 (RI-SB-23 (4-8)) (Run 1) (Analysis Batch 47154) (Prep Batch 46376)

The continuing calibration verification (CCV) associated with samples XF24012-012 (DUP-SB-02) and XF24012-013 (DUP-SB-03) for analyte(s): o-cresol, acetophenone, and di-n-octylphthalate recovered above the upper control limit. The sample(s) associated with this CCV were non-detect for the affected analytes; therefore, the data has been reported.

Metals 6020B

The MS for batch 46274 and parent sample XF24012-001 (RI-SB-13 (2-6)), recovered outside the control limits for Chromium, Lead and Selenium. The MSD recovered outside the control limits for Barium and Lead. The RPD for Barium, Chromium and Lead was > 20%. The associated LCS passed acceptance criteria.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Sample Summary

Terracon Consultants, Inc.

Lot Number: XF24012

Project Name: TAMP

Project Number: 7021P145

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	RI-SB-13 (2-6)	Solid	06/23/2022 0945	06/24/2022
002	RI-SB-14 (0-4)	Solid	06/22/2022 1745	06/24/2022
003	RI-SB-15 (2-4)	Solid	06/22/2022 1800	06/24/2022
004	RI-SB-16 (0-4)	Solid	06/23/2022 1100	06/24/2022
005	RI-SB-17 (0-6)	Solid	06/23/2022 1145	06/24/2022
006	RI-SB-18 (0-6)	Solid	06/23/2022 1345	06/24/2022
007	RI-SB-19 (0-4)	Solid	06/23/2022 1445	06/24/2022
008	RI-SB-20 (0-6)	Solid	06/23/2022 1615	06/24/2022
009	RI-SB-21 (0-4)	Solid	06/23/2022 1700	06/24/2022
010	RI-SB-22 (0-8)	Solid	06/23/2022 1750	06/24/2022
011	RI-SB-23 (4-8)	Solid	06/23/2022 1805	06/24/2022
012	DUP-SB-02	Solid	06/23/2022	06/24/2022
013	DUP-SB-03	Solid	06/23/2022	06/24/2022

(13 samples)

Detection Summary
Terracon Consultants, Inc.
Lot Number: XF24012
Project Name: TAMP
Project Number: 7021P145

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	RI-SB-13 (2-6)	Solid	Arsenic	6020B	5.6		mg/kg	12
001	RI-SB-13 (2-6)	Solid	Barium	6020B	56	S	mg/kg	12
001	RI-SB-13 (2-6)	Solid	Chromium	6020B	40	S	mg/kg	12
001	RI-SB-13 (2-6)	Solid	Lead	6020B	30	S	mg/kg	12
001	RI-SB-13 (2-6)	Solid	Selenium	6020B	2.1	S	mg/kg	12
002	RI-SB-14 (0-4)	Solid	Anthracene	8270E	0.0031	JQ	mg/kg	13
002	RI-SB-14 (0-4)	Solid	Benzo(a)anthracene	8270E	0.0067	Q	mg/kg	13
002	RI-SB-14 (0-4)	Solid	Benzo(a)pyrene	8270E	0.0056	Q	mg/kg	13
002	RI-SB-14 (0-4)	Solid	Benzo(b)fluoranthene	8270E	0.0069	Q	mg/kg	13
002	RI-SB-14 (0-4)	Solid	Benzo(g,h,i)perylene	8270E	0.0027	JQ	mg/kg	13
002	RI-SB-14 (0-4)	Solid	Benzo(k)fluoranthene	8270E	0.0025	JQ	mg/kg	13
002	RI-SB-14 (0-4)	Solid	Chrysene	8270E	0.0066	Q	mg/kg	13
002	RI-SB-14 (0-4)	Solid	Di-n-butyl phthalate	8270E	0.0066	JQ	mg/kg	13
002	RI-SB-14 (0-4)	Solid	Fluoranthene	8270E	0.012	Q	mg/kg	13
002	RI-SB-14 (0-4)	Solid	Indeno(1,2,3-c,d)pyrene	8270E	0.0025	JQ	mg/kg	14
002	RI-SB-14 (0-4)	Solid	Naphthalene	8270E	0.003	JQ	mg/kg	14
002	RI-SB-14 (0-4)	Solid	Phenanthrene	8270E	0.013	Q	mg/kg	14
002	RI-SB-14 (0-4)	Solid	Pyrene	8270E	0.013	Q	mg/kg	14
002	RI-SB-14 (0-4)	Solid	Arsenic	6020B	2.0		mg/kg	15
002	RI-SB-14 (0-4)	Solid	Barium	6020B	41		mg/kg	15
002	RI-SB-14 (0-4)	Solid	Chromium	6020B	23		mg/kg	15
002	RI-SB-14 (0-4)	Solid	Lead	6020B	3.6		mg/kg	15
002	RI-SB-14 (0-4)	Solid	Selenium	6020B	1.0	J	mg/kg	15
003	RI-SB-15 (2-4)	Solid	Anthracene	8270E	0.0041		mg/kg	16
003	RI-SB-15 (2-4)	Solid	Benzo(a)anthracene	8270E	0.051		mg/kg	16
003	RI-SB-15 (2-4)	Solid	Benzo(a)pyrene	8270E	0.047		mg/kg	16
003	RI-SB-15 (2-4)	Solid	Benzo(b)fluoranthene	8270E	0.062		mg/kg	16
003	RI-SB-15 (2-4)	Solid	Benzo(g,h,i)perylene	8270E	0.023		mg/kg	16
003	RI-SB-15 (2-4)	Solid	Benzo(k)fluoranthene	8270E	0.025		mg/kg	16
003	RI-SB-15 (2-4)	Solid	Chrysene	8270E	0.048		mg/kg	16
003	RI-SB-15 (2-4)	Solid	Fluoranthene	8270E	0.061		mg/kg	16
003	RI-SB-15 (2-4)	Solid	Indeno(1,2,3-c,d)pyrene	8270E	0.023		mg/kg	17
003	RI-SB-15 (2-4)	Solid	Naphthalene	8270E	0.0018	J	mg/kg	17
003	RI-SB-15 (2-4)	Solid	Phenanthrene	8270E	0.0077		mg/kg	17
003	RI-SB-15 (2-4)	Solid	Pyrene	8270E	0.071		mg/kg	17
003	RI-SB-15 (2-4)	Solid	Arsenic	6020B	1.8		mg/kg	18
003	RI-SB-15 (2-4)	Solid	Barium	6020B	44		mg/kg	18
003	RI-SB-15 (2-4)	Solid	Chromium	6020B	16		mg/kg	18
003	RI-SB-15 (2-4)	Solid	Lead	6020B	3.4		mg/kg	18
003	RI-SB-15 (2-4)	Solid	Selenium	6020B	1.0	J	mg/kg	18
004	RI-SB-16 (0-4)	Solid	Acenaphthene	8270E	0.015	J	mg/kg	19
004	RI-SB-16 (0-4)	Solid	Acenaphthylene	8270E	0.018		mg/kg	19
004	RI-SB-16 (0-4)	Solid	Anthracene	8270E	0.043		mg/kg	19

Detection Summary (Continued)

Lot Number: XF24012

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
004	RI-SB-16 (0-4)	Solid	Benzo(a)anthracene	8270E	0.1		mg/kg	19
004	RI-SB-16 (0-4)	Solid	Benzo(a)pyrene	8270E	0.1		mg/kg	19
004	RI-SB-16 (0-4)	Solid	Benzo(b)fluoranthene	8270E	0.16		mg/kg	19
004	RI-SB-16 (0-4)	Solid	Benzo(g,h,i)perylene	8270E	0.067		mg/kg	19
004	RI-SB-16 (0-4)	Solid	Benzo(k)fluoranthene	8270E	0.059		mg/kg	19
004	RI-SB-16 (0-4)	Solid	Chrysene	8270E	0.11		mg/kg	19
004	RI-SB-16 (0-4)	Solid	Fluoranthene	8270E	0.19		mg/kg	19
004	RI-SB-16 (0-4)	Solid	Indeno(1,2,3-c,d)pyrene	8270E	0.059		mg/kg	20
004	RI-SB-16 (0-4)	Solid	2-Methylnaphthalene	8270E	0.016	J	mg/kg	20
004	RI-SB-16 (0-4)	Solid	Naphthalene	8270E	0.016	J	mg/kg	20
004	RI-SB-16 (0-4)	Solid	Phenanthrene	8270E	0.19		mg/kg	20
004	RI-SB-16 (0-4)	Solid	Pyrene	8270E	0.23		mg/kg	20
004	RI-SB-16 (0-4)	Solid	Arsenic	6020B	1.9		mg/kg	21
004	RI-SB-16 (0-4)	Solid	Barium	6020B	150		mg/kg	21
004	RI-SB-16 (0-4)	Solid	Cadmium	6020B	0.25		mg/kg	21
004	RI-SB-16 (0-4)	Solid	Chromium	6020B	29		mg/kg	21
004	RI-SB-16 (0-4)	Solid	Lead	6020B	37		mg/kg	21
004	RI-SB-16 (0-4)	Solid	Selenium	6020B	3.9		mg/kg	21
004	RI-SB-16 (0-4)	Solid	Silver	6020B	0.088	J	mg/kg	21
005	RI-SB-17 (0-6)	Solid	Acenaphthene	8270E	0.023	J	mg/kg	22
005	RI-SB-17 (0-6)	Solid	Acenaphthylene	8270E	0.051		mg/kg	22
005	RI-SB-17 (0-6)	Solid	Anthracene	8270E	0.066		mg/kg	22
005	RI-SB-17 (0-6)	Solid	Benzo(a)anthracene	8270E	0.14		mg/kg	22
005	RI-SB-17 (0-6)	Solid	Benzo(a)pyrene	8270E	0.19		mg/kg	22
005	RI-SB-17 (0-6)	Solid	Benzo(b)fluoranthene	8270E	0.25		mg/kg	22
005	RI-SB-17 (0-6)	Solid	Benzo(g,h,i)perylene	8270E	0.15		mg/kg	22
005	RI-SB-17 (0-6)	Solid	Benzo(k)fluoranthene	8270E	0.1		mg/kg	22
005	RI-SB-17 (0-6)	Solid	Carbazole	8270E	0.086	J	mg/kg	22
005	RI-SB-17 (0-6)	Solid	Chrysene	8270E	0.21		mg/kg	22
005	RI-SB-17 (0-6)	Solid	Fluoranthene	8270E	0.16		mg/kg	22
005	RI-SB-17 (0-6)	Solid	Fluorene	8270E	0.036		mg/kg	22
005	RI-SB-17 (0-6)	Solid	Indeno(1,2,3-c,d)pyrene	8270E	0.12		mg/kg	23
005	RI-SB-17 (0-6)	Solid	2-Methylnaphthalene	8270E	0.052		mg/kg	23
005	RI-SB-17 (0-6)	Solid	Naphthalene	8270E	0.049		mg/kg	23
005	RI-SB-17 (0-6)	Solid	Phenanthrene	8270E	0.36		mg/kg	23
005	RI-SB-17 (0-6)	Solid	Pyrene	8270E	0.22		mg/kg	23
005	RI-SB-17 (0-6)	Solid	Arsenic	6020B	1.8		mg/kg	24
005	RI-SB-17 (0-6)	Solid	Barium	6020B	130		mg/kg	24
005	RI-SB-17 (0-6)	Solid	Cadmium	6020B	0.23		mg/kg	24
005	RI-SB-17 (0-6)	Solid	Chromium	6020B	63		mg/kg	24
005	RI-SB-17 (0-6)	Solid	Lead	6020B	48		mg/kg	24
005	RI-SB-17 (0-6)	Solid	Selenium	6020B	2.5		mg/kg	24
005	RI-SB-17 (0-6)	Solid	Silver	6020B	0.076	J	mg/kg	24
006	RI-SB-18 (0-6)	Solid	Acenaphthylene	8270E	0.019	J	mg/kg	25
006	RI-SB-18 (0-6)	Solid	Arsenic	6020B	1.5		mg/kg	27
006	RI-SB-18 (0-6)	Solid	Barium	6020B	130		mg/kg	27
006	RI-SB-18 (0-6)	Solid	Chromium	6020B	54		mg/kg	27
006	RI-SB-18 (0-6)	Solid	Lead	6020B	3.2		mg/kg	27

Detection Summary (Continued)

Lot Number: XF24012

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
006	RI-SB-18 (0-6)	Solid	Selenium	6020B	3.9		mg/kg	27
007	RI-SB-19 (0-4)	Solid	Acenaphthylene	8270E	0.068		mg/kg	28
007	RI-SB-19 (0-4)	Solid	Anthracene	8270E	0.044		mg/kg	28
007	RI-SB-19 (0-4)	Solid	Benzo(a)anthracene	8270E	0.05		mg/kg	28
007	RI-SB-19 (0-4)	Solid	Benzo(a)pyrene	8270E	0.065		mg/kg	28
007	RI-SB-19 (0-4)	Solid	Benzo(b)fluoranthene	8270E	0.078		mg/kg	28
007	RI-SB-19 (0-4)	Solid	Benzo(g,h,i)perylene	8270E	0.059		mg/kg	28
007	RI-SB-19 (0-4)	Solid	Benzo(k)fluoranthene	8270E	0.02	J	mg/kg	28
007	RI-SB-19 (0-4)	Solid	Chrysene	8270E	0.049		mg/kg	28
007	RI-SB-19 (0-4)	Solid	Fluoranthene	8270E	0.057		mg/kg	28
007	RI-SB-19 (0-4)	Solid	Fluorene	8270E	0.034		mg/kg	28
007	RI-SB-19 (0-4)	Solid	Indeno(1,2,3-c,d)pyrene	8270E	0.04		mg/kg	29
007	RI-SB-19 (0-4)	Solid	2-Methylnaphthalene	8270E	0.023	J	mg/kg	29
007	RI-SB-19 (0-4)	Solid	Phenanthrene	8270E	0.088		mg/kg	29
007	RI-SB-19 (0-4)	Solid	Pyrene	8270E	0.16		mg/kg	29
007	RI-SB-19 (0-4)	Solid	Arsenic	6020B	2.6		mg/kg	30
007	RI-SB-19 (0-4)	Solid	Barium	6020B	74		mg/kg	30
007	RI-SB-19 (0-4)	Solid	Cadmium	6020B	0.034	J	mg/kg	30
007	RI-SB-19 (0-4)	Solid	Chromium	6020B	36		mg/kg	30
007	RI-SB-19 (0-4)	Solid	Lead	6020B	9.1		mg/kg	30
007	RI-SB-19 (0-4)	Solid	Selenium	6020B	1.9		mg/kg	30
008	RI-SB-20 (0-6)	Solid	Benzo(a)anthracene	8270E	0.017		mg/kg	31
008	RI-SB-20 (0-6)	Solid	Benzo(a)pyrene	8270E	0.019		mg/kg	31
008	RI-SB-20 (0-6)	Solid	Benzo(b)fluoranthene	8270E	0.021		mg/kg	31
008	RI-SB-20 (0-6)	Solid	Benzo(g,h,i)perylene	8270E	0.013	J	mg/kg	31
008	RI-SB-20 (0-6)	Solid	Chrysene	8270E	0.012	J	mg/kg	31
008	RI-SB-20 (0-6)	Solid	Fluoranthene	8270E	0.021		mg/kg	31
008	RI-SB-20 (0-6)	Solid	2-Methylnaphthalene	8270E	0.01	J	mg/kg	32
008	RI-SB-20 (0-6)	Solid	Phenanthrene	8270E	0.02		mg/kg	32
008	RI-SB-20 (0-6)	Solid	Pyrene	8270E	0.031		mg/kg	32
008	RI-SB-20 (0-6)	Solid	Arsenic	6020B	1.7		mg/kg	33
008	RI-SB-20 (0-6)	Solid	Barium	6020B	70		mg/kg	33
008	RI-SB-20 (0-6)	Solid	Chromium	6020B	27		mg/kg	33
008	RI-SB-20 (0-6)	Solid	Lead	6020B	5.2		mg/kg	33
008	RI-SB-20 (0-6)	Solid	Selenium	6020B	1.6		mg/kg	33
009	RI-SB-21 (0-4)	Solid	Benzo(g,h,i)perylene	8270E	0.017	J	mg/kg	34
009	RI-SB-21 (0-4)	Solid	Fluoranthene	8270E	0.027	J	mg/kg	34
009	RI-SB-21 (0-4)	Solid	Phenanthrene	8270E	0.028	J	mg/kg	35
009	RI-SB-21 (0-4)	Solid	Pyrene	8270E	0.026	J	mg/kg	35
009	RI-SB-21 (0-4)	Solid	Arsenic	6020B	1.5		mg/kg	36
009	RI-SB-21 (0-4)	Solid	Barium	6020B	78		mg/kg	36
009	RI-SB-21 (0-4)	Solid	Chromium	6020B	16		mg/kg	36
009	RI-SB-21 (0-4)	Solid	Lead	6020B	6.0		mg/kg	36
009	RI-SB-21 (0-4)	Solid	Selenium	6020B	1.1	J	mg/kg	36
010	RI-SB-22 (0-8)	Solid	Anthracene	8270E	0.012	J	mg/kg	37
010	RI-SB-22 (0-8)	Solid	Benzo(a)anthracene	8270E	0.009	J	mg/kg	37
010	RI-SB-22 (0-8)	Solid	Benzo(b)fluoranthene	8270E	0.01	J	mg/kg	37
010	RI-SB-22 (0-8)	Solid	Benzo(g,h,i)perylene	8270E	0.012	J	mg/kg	37

Detection Summary (Continued)

Lot Number: XF24012

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
010	RI-SB-22 (0-8)	Solid	Chrysene	8270E	0.016		mg/kg	37
010	RI-SB-22 (0-8)	Solid	Indeno(1,2,3-c,d)pyrene	8270E	0.0085	J	mg/kg	38
010	RI-SB-22 (0-8)	Solid	2-Methylnaphthalene	8270E	0.016		mg/kg	38
010	RI-SB-22 (0-8)	Solid	Phenanthrene	8270E	0.022		mg/kg	38
010	RI-SB-22 (0-8)	Solid	Pyrene	8270E	0.024		mg/kg	38
010	RI-SB-22 (0-8)	Solid	Arsenic	6020B	1.2		mg/kg	39
010	RI-SB-22 (0-8)	Solid	Barium	6020B	48		mg/kg	39
010	RI-SB-22 (0-8)	Solid	Chromium	6020B	21		mg/kg	39
010	RI-SB-22 (0-8)	Solid	Lead	6020B	5.1		mg/kg	39
010	RI-SB-22 (0-8)	Solid	Selenium	6020B	1.1	J	mg/kg	39
011	RI-SB-23 (4-8)	Solid	Acenaphthene	8270E	0.11		mg/kg	40
011	RI-SB-23 (4-8)	Solid	Anthracene	8270E	0.31		mg/kg	40
011	RI-SB-23 (4-8)	Solid	Benzo(a)anthracene	8270E	2.1		mg/kg	40
011	RI-SB-23 (4-8)	Solid	Benzo(a)pyrene	8270E	2.5		mg/kg	40
011	RI-SB-23 (4-8)	Solid	Benzo(b)fluoranthene	8270E	2.8		mg/kg	40
011	RI-SB-23 (4-8)	Solid	Benzo(g,h,i)perylene	8270E	0.78		mg/kg	40
011	RI-SB-23 (4-8)	Solid	Benzo(k)fluoranthene	8270E	1.2		mg/kg	40
011	RI-SB-23 (4-8)	Solid	Carbazole	8270E	0.27		mg/kg	40
011	RI-SB-23 (4-8)	Solid	Chrysene	8270E	2		mg/kg	40
011	RI-SB-23 (4-8)	Solid	Fluoranthene	8270E	2.3		mg/kg	40
011	RI-SB-23 (4-8)	Solid	Fluorene	8270E	0.046		mg/kg	40
011	RI-SB-23 (4-8)	Solid	Indeno(1,2,3-c,d)pyrene	8270E	0.82		mg/kg	41
011	RI-SB-23 (4-8)	Solid	Naphthalene	8270E	0.028	J	mg/kg	41
011	RI-SB-23 (4-8)	Solid	Phenanthrene	8270E	0.87		mg/kg	41
011	RI-SB-23 (4-8)	Solid	Pyrene	8270E	2.8		mg/kg	41
011	RI-SB-23 (4-8)	Solid	Arsenic	6020B	2.0		mg/kg	42
011	RI-SB-23 (4-8)	Solid	Barium	6020B	54		mg/kg	42
011	RI-SB-23 (4-8)	Solid	Chromium	6020B	55		mg/kg	42
011	RI-SB-23 (4-8)	Solid	Lead	6020B	1.6	J	mg/kg	42
011	RI-SB-23 (4-8)	Solid	Selenium	6020B	1.9		mg/kg	42
012	DUP-SB-02	Solid	Anthracene	8270E	0.032	J	mg/kg	43
012	DUP-SB-02	Solid	Benzo(a)anthracene	8270E	0.072		mg/kg	43
012	DUP-SB-02	Solid	Benzo(a)pyrene	8270E	0.063		mg/kg	43
012	DUP-SB-02	Solid	Benzo(b)fluoranthene	8270E	0.099		mg/kg	43
012	DUP-SB-02	Solid	Benzo(g,h,i)perylene	8270E	0.06		mg/kg	43
012	DUP-SB-02	Solid	Benzo(k)fluoranthene	8270E	0.034	J	mg/kg	43
012	DUP-SB-02	Solid	Chrysene	8270E	0.085		mg/kg	43
012	DUP-SB-02	Solid	Fluoranthene	8270E	0.13		mg/kg	43
012	DUP-SB-02	Solid	Fluorene	8270E	0.022	J	mg/kg	43
012	DUP-SB-02	Solid	Indeno(1,2,3-c,d)pyrene	8270E	0.051		mg/kg	44
012	DUP-SB-02	Solid	Phenanthrene	8270E	0.14		mg/kg	44
012	DUP-SB-02	Solid	Pyrene	8270E	0.19		mg/kg	44
012	DUP-SB-02	Solid	Arsenic	6020B	1.9		mg/kg	45
012	DUP-SB-02	Solid	Barium	6020B	120		mg/kg	45
012	DUP-SB-02	Solid	Cadmium	6020B	0.12	J	mg/kg	45
012	DUP-SB-02	Solid	Chromium	6020B	25		mg/kg	45
012	DUP-SB-02	Solid	Lead	6020B	30		mg/kg	45
012	DUP-SB-02	Solid	Selenium	6020B	3.8		mg/kg	45

Detection Summary (Continued)

Lot Number: XF24012

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
013	DUP-SB-03	Solid	Acenaphthylene	8270E	0.029	J	mg/kg	46
013	DUP-SB-03	Solid	Anthracene	8270E	0.018	J	mg/kg	46
013	DUP-SB-03	Solid	Benzo(a)anthracene	8270E	0.037		mg/kg	46
013	DUP-SB-03	Solid	Benzo(a)pyrene	8270E	0.037		mg/kg	46
013	DUP-SB-03	Solid	Benzo(g,h,i)perylene	8270E	0.037		mg/kg	46
013	DUP-SB-03	Solid	Chrysene	8270E	0.025	J	mg/kg	46
013	DUP-SB-03	Solid	Fluoranthene	8270E	0.033		mg/kg	46
013	DUP-SB-03	Solid	Indeno(1,2,3-c,d)pyrene	8270E	0.023	J	mg/kg	47
013	DUP-SB-03	Solid	Phenanthrene	8270E	0.041		mg/kg	47
013	DUP-SB-03	Solid	Pyrene	8270E	0.097		mg/kg	47
013	DUP-SB-03	Solid	Arsenic	6020B	2.2		mg/kg	48
013	DUP-SB-03	Solid	Barium	6020B	78		mg/kg	48
013	DUP-SB-03	Solid	Cadmium	6020B	0.034	J	mg/kg	48
013	DUP-SB-03	Solid	Chromium	6020B	34		mg/kg	48
013	DUP-SB-03	Solid	Lead	6020B	28		mg/kg	48
013	DUP-SB-03	Solid	Selenium	6020B	1.3	J	mg/kg	48

(203 detections)

Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-001**	
Description: **RI-SB-13 (2-6)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 0945**	Project Name: **TAMP**	% Solids: **81.2**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	5	07/06/2022 1831	CMF	06/28/2022 1624	46376

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acenaphthene	83-32-9	8270E	ND		0.016	0.0050	mg/Kg	1
Acenaphthylene	208-96-8	8270E	ND		0.016	0.0058	mg/Kg	1
Acetophenone	98-86-2	8270E	ND		0.079	0.030	mg/Kg	1
Anthracene	120-12-7	8270E	ND		0.016	0.0031	mg/Kg	1
Atrazine	1912-24-9	8270E	ND		0.079	0.030	mg/Kg	1
Benzaldehyde	100-52-7	8270E	ND		0.079	0.030	mg/Kg	1
Benzo(a)anthracene	56-55-3	8270E	ND		0.016	0.0036	mg/Kg	1
Benzo(a)pyrene	50-32-8	8270E	ND		0.016	0.0040	mg/Kg	1
Benzo(b)fluoranthene	205-99-2	8270E	ND		0.016	0.0030	mg/Kg	1
Benzo(g,h,i)perylene	191-24-2	8270E	ND		0.016	0.0039	mg/Kg	1
Benzo(k)fluoranthene	207-08-9	8270E	ND		0.016	0.0029	mg/Kg	1
1,1'-Biphenyl	92-52-4	8270E	ND		0.079	0.030	mg/Kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	ND		0.079	0.030	mg/Kg	1
Butyl benzyl phthalate	85-68-7	8270E	ND		0.079	0.030	mg/Kg	1
Caprolactam	105-60-2	8270E	ND		0.079	0.030	mg/Kg	1
Carbazole	86-74-8	8270E	ND		0.079	0.030	mg/Kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	ND		0.079	0.030	mg/Kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	ND		0.079	0.030	mg/Kg	1
4-Chloroaniline	106-47-8	8270E	ND		0.079	0.030	mg/Kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	ND		0.079	0.030	mg/Kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	ND		0.079	0.030	mg/Kg	1
2-Chloronaphthalene	91-58-7	8270E	ND		0.079	0.030	mg/Kg	1
2-Chlorophenol	95-57-8	8270E	ND		0.079	0.030	mg/Kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	ND		0.079	0.030	mg/Kg	1
Chrysene	218-01-9	8270E	ND		0.016	0.0027	mg/Kg	1
Dibenzo(a,h)anthracene	53-70-3	8270E	ND		0.016	0.0031	mg/Kg	1
Dibenzofuran	132-64-9	8270E	ND		0.079	0.030	mg/Kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	ND		0.079	0.030	mg/Kg	1
2,4-Dichlorophenol	120-83-2	8270E	ND		0.079	0.030	mg/Kg	1
Diethylphthalate	84-66-2	8270E	ND		0.079	0.030	mg/Kg	1
Dimethyl phthalate	131-11-3	8270E	ND		0.12	0.045	mg/Kg	1
2,4-Dimethylphenol	105-67-9	8270E	ND		0.079	0.030	mg/Kg	1
Di-n-butyl phthalate	84-74-2	8270E	ND		0.079	0.030	mg/Kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	ND		0.41	0.15	mg/Kg	1
2,4-Dinitrophenol	51-28-5	8270E	ND		0.41	0.15	mg/Kg	1
2,4-Dinitrotoluene	121-14-2	8270E	ND		0.16	0.061	mg/Kg	1
2,6-Dinitrotoluene	606-20-2	8270E	ND		0.16	0.061	mg/Kg	1
Di-n-octylphthalate	117-84-0	8270E	ND		0.079	0.030	mg/Kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	ND		0.41	0.15	mg/Kg	1
Fluoranthene	206-44-0	8270E	ND		0.016	0.0026	mg/Kg	1
Fluorene	86-73-7	8270E	ND		0.016	0.0035	mg/Kg	1
Hexachlorobenzene	118-74-1	8270E	ND		0.079	0.030	mg/Kg	1
Hexachlorobutadiene	87-68-3	8270E	ND		0.079	0.030	mg/Kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	ND		0.41	0.15	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-001**	
Description: **RI-SB-13 (2-6)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 0945**	Project Name: **TAMP**	% Solids: **81.2**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	5	07/06/2022 1831	CMF	06/28/2022 1624	46376

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Hexachloroethane	67-72-1	8270E	ND		0.079	0.030	mg/Kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	ND		0.016	0.0061	mg/Kg	1
Isophorone	78-59-1	8270E	ND		0.079	0.030	mg/Kg	1
2-Methylnaphthalene	91-57-6	8270E	ND		0.016	0.0060	mg/Kg	1
2-Methylphenol	95-48-7	8270E	ND		0.079	0.030	mg/Kg	1
3+4-Methylphenol	106-44-5	8270E	ND		0.16	0.061	mg/Kg	1
Naphthalene	91-20-3	8270E	ND		0.016	0.0059	mg/Kg	1
2-Nitroaniline	88-74-4	8270E	ND		0.16	0.061	mg/Kg	1
3-Nitroaniline	99-09-2	8270E	ND		0.16	0.061	mg/Kg	1
4-Nitroaniline	100-01-6	8270E	ND		0.16	0.061	mg/Kg	1
Nitrobenzene	98-95-3	8270E	ND		0.079	0.030	mg/Kg	1
2-Nitrophenol	88-75-5	8270E	ND		0.16	0.061	mg/Kg	1
4-Nitrophenol	100-02-7	8270E	ND		0.41	0.15	mg/Kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	ND		0.079	0.030	mg/Kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	ND		0.079	0.030	mg/Kg	1
Pentachlorophenol	87-86-5	8270E	ND		0.41	0.15	mg/Kg	1
Phenanthrene	85-01-8	8270E	ND		0.016	0.0044	mg/Kg	1
Phenol	108-95-2	8270E	ND		0.079	0.030	mg/Kg	1
Pyrene	129-00-0	8270E	ND		0.016	0.0030	mg/Kg	1
2,4,5-Trichlorophenol	95-95-4	8270E	ND		0.079	0.030	mg/Kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	ND		0.079	0.030	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		78	44-115
2-Fluorophenol		79	35-115
Nitrobenzene-d5		83	37-122
Phenol-d5		64	33-122
Terphenyl-d14		108	54-127
2,4,6-Tribromophenol		74	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-001**	
Description: **RI-SB-13 (2-6)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 0945**	Project Name: **TAMP**	% Solids: **81.2**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/05/2022 2110	BPK	06/27/2022 1617	46274

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**5.6**		**0.60**	**0.24**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**56**	**S**	**1.6**	**0.37**	**mg/kg**	**1**
Cadmium	7440-43-9	6020B	ND		0.16	0.030	mg/kg	1
Chromium	**7440-47-3**	**6020B**	**40**	**S**	**1.6**	**0.67**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**30**	**S**	**0.30**	**0.082**	**mg/kg**	**1**
Selenium	**7782-49-2**	**6020B**	**2.1**	**S**	**1.6**	**0.57**	**mg/kg**	**1**
Silver	7440-22-4	6020B	ND		0.30	0.073	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-002**	
Description: **RI-SB-14 (0-4)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1745**	Project Name: **TAMP**	% Solids: **76.5**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	1	07/06/2022 1357	CMF	06/28/2022 1624	46376

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acenaphthene	83-32-9	8270E	ND	Q	0.0034	0.0011	mg/Kg	1
Acenaphthylene	208-96-8	8270E	ND	Q	0.0034	0.0012	mg/Kg	1
Acetophenone	98-86-2	8270E	ND	Q	0.017	0.0064	mg/Kg	1
Anthracene	**120-12-7**	**8270E**	**0.0031**	**JQ**	**0.0034**	**0.00065**	**mg/Kg**	**1**
Atrazine	1912-24-9	8270E	ND	Q	0.017	0.0064	mg/Kg	1
Benzaldehyde	100-52-7	8270E	ND	Q	0.017	0.0064	mg/Kg	1
Benzo(a)anthracene	**56-55-3**	**8270E**	**0.0067**	**Q**	**0.0034**	**0.00075**	**mg/Kg**	**1**
Benzo(a)pyrene	**50-32-8**	**8270E**	**0.0056**	**Q**	**0.0034**	**0.00084**	**mg/Kg**	**1**
Benzo(b)fluoranthene	**205-99-2**	**8270E**	**0.0069**	**Q**	**0.0034**	**0.00064**	**mg/Kg**	**1**
Benzo(g,h,i)perylene	**191-24-2**	**8270E**	**0.0027**	**JQ**	**0.0034**	**0.00083**	**mg/Kg**	**1**
Benzo(k)fluoranthene	**207-08-9**	**8270E**	**0.0025**	**JQ**	**0.0034**	**0.00061**	**mg/Kg**	**1**
1,1'-Biphenyl	92-52-4	8270E	ND	Q	0.017	0.0064	mg/Kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	ND	Q	0.017	0.0064	mg/Kg	1
Butyl benzyl phthalate	85-68-7	8270E	ND	Q	0.017	0.0064	mg/Kg	1
Caprolactam	105-60-2	8270E	ND	Q	0.017	0.0064	mg/Kg	1
Carbazole	86-74-8	8270E	ND	Q	0.017	0.0064	mg/Kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	ND	Q	0.017	0.0064	mg/Kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	ND	Q	0.017	0.0064	mg/Kg	1
4-Chloroaniline	106-47-8	8270E	ND	Q	0.017	0.0064	mg/Kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	ND	Q	0.017	0.0064	mg/Kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	ND	Q	0.017	0.0064	mg/Kg	1
2-Chloronaphthalene	91-58-7	8270E	ND	Q	0.017	0.0064	mg/Kg	1
2-Chlorophenol	95-57-8	8270E	ND	Q	0.017	0.0064	mg/Kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	ND	Q	0.017	0.0064	mg/Kg	1
Chrysene	**218-01-9**	**8270E**	**0.0066**	**Q**	**0.0034**	**0.00057**	**mg/Kg**	**1**
Dibenzo(a,h)anthracene	53-70-3	8270E	ND	Q	0.0034	0.00065	mg/Kg	1
Dibenzofuran	132-64-9	8270E	ND	Q	0.017	0.0064	mg/Kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	ND	Q	0.017	0.0064	mg/Kg	1
2,4-Dichlorophenol	120-83-2	8270E	ND	Q	0.017	0.0064	mg/Kg	1
Diethylphthalate	84-66-2	8270E	ND	Q	0.017	0.0064	mg/Kg	1
Dimethyl phthalate	131-11-3	8270E	ND	Q	0.025	0.0094	mg/Kg	1
2,4-Dimethylphenol	105-67-9	8270E	ND	Q	0.017	0.0064	mg/Kg	1
Di-n-butyl phthalate	**84-74-2**	**8270E**	**0.0066**	**JQ**	**0.017**	**0.0064**	**mg/Kg**	**1**
4,6-Dinitro-2-methylphenol	534-52-1	8270E	ND	Q	0.085	0.032	mg/Kg	1
2,4-Dinitrophenol	51-28-5	8270E	ND	Q	0.085	0.032	mg/Kg	1
2,4-Dinitrotoluene	121-14-2	8270E	ND	Q	0.034	0.013	mg/Kg	1
2,6-Dinitrotoluene	606-20-2	8270E	ND	Q	0.034	0.013	mg/Kg	1
Di-n-octylphthalate	117-84-0	8270E	ND	Q	0.017	0.0064	mg/Kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	ND	Q	0.085	0.032	mg/Kg	1
Fluoranthene	**206-44-0**	**8270E**	**0.012**	**Q**	**0.0034**	**0.00053**	**mg/Kg**	**1**
Fluorene	86-73-7	8270E	ND	Q	0.0034	0.00073	mg/Kg	1
Hexachlorobenzene	118-74-1	8270E	ND	Q	0.017	0.0064	mg/Kg	1
Hexachlorobutadiene	87-68-3	8270E	ND	Q	0.017	0.0064	mg/Kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	ND	Q	0.085	0.032	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-002**	
Description: **RI-SB-14 (0-4)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1745**	Project Name: **TAMP**	% Solids: **76.5**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	1	07/06/2022 1357	CMF	06/28/2022 1624	46376

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Hexachloroethane	67-72-1	8270E	ND	Q	0.017	0.0064	mg/Kg	1
Indeno(1,2,3-c,d)pyrene	**193-39-5**	**8270E**	**0.0025**	**JQ**	**0.0034**	**0.0013**	**mg/Kg**	**1**
Isophorone	78-59-1	8270E	ND	Q	0.017	0.0064	mg/Kg	1
2-Methylnaphthalene	91-57-6	8270E	ND	Q	0.0034	0.0013	mg/Kg	1
2-Methylphenol	95-48-7	8270E	ND	Q	0.017	0.0064	mg/Kg	1
3+4-Methylphenol	106-44-5	8270E	ND	Q	0.034	0.013	mg/Kg	1
Naphthalene	**91-20-3**	**8270E**	**0.0030**	**JQ**	**0.0034**	**0.0012**	**mg/Kg**	**1**
2-Nitroaniline	88-74-4	8270E	ND	Q	0.034	0.013	mg/Kg	1
3-Nitroaniline	99-09-2	8270E	ND	Q	0.034	0.013	mg/Kg	1
4-Nitroaniline	100-01-6	8270E	ND	Q	0.034	0.013	mg/Kg	1
Nitrobenzene	98-95-3	8270E	ND	Q	0.017	0.0064	mg/Kg	1
2-Nitrophenol	88-75-5	8270E	ND	Q	0.034	0.013	mg/Kg	1
4-Nitrophenol	100-02-7	8270E	ND	Q	0.085	0.032	mg/Kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	ND	Q	0.017	0.0064	mg/Kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	ND	Q	0.017	0.0064	mg/Kg	1
Pentachlorophenol	87-86-5	8270E	ND	Q	0.085	0.032	mg/Kg	1
Phenanthrene	**85-01-8**	**8270E**	**0.013**	**Q**	**0.0034**	**0.00092**	**mg/Kg**	**1**
Phenol	108-95-2	8270E	ND	Q	0.017	0.0064	mg/Kg	1
Pyrene	**129-00-0**	**8270E**	**0.013**	**Q**	**0.0034**	**0.00064**	**mg/Kg**	**1**
2,4,5-Trichlorophenol	95-95-4	8270E	ND	Q	0.017	0.0064	mg/Kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	ND	Q	0.017	0.0064	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		93	44-115
2-Fluorophenol	N	117	35-115
Nitrobenzene-d5		64	37-122
Phenol-d5		101	33-122
Terphenyl-d14	N	130	54-127
2,4,6-Tribromophenol		84	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-002**	
Description: **RI-SB-14 (0-4)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1745**	Project Name: **TAMP**	% Solids: **76.5**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/05/2022 2148	BPK	06/27/2022 1617	46274

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**2.0**		**0.49**	**0.20**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**41**		**1.3**	**0.30**	**mg/kg**	**1**
Cadmium	7440-43-9	6020B	ND		0.13	0.025	mg/kg	1
Chromium	**7440-47-3**	**6020B**	**23**		**1.3**	**0.54**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**3.6**		**0.25**	**0.067**	**mg/kg**	**1**
Selenium	**7782-49-2**	**6020B**	**1.0**	**J**	**1.3**	**0.47**	**mg/kg**	**1**
Silver	7440-22-4	6020B	ND		0.25	0.059	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-003**	
Description: **RI-SB-15 (2-4)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1800**	Project Name: **TAMP**	% Solids: **86.8**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	1	07/06/2022 1422	CMF	06/28/2022 1624	46376

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acenaphthene	83-32-9	8270E	ND		0.0030	0.00091	mg/Kg	1
Acenaphthylene	208-96-8	8270E	ND		0.0030	0.0010	mg/Kg	1
Acetophenone	98-86-2	8270E	ND		0.014	0.0055	mg/Kg	1
Anthracene	**120-12-7**	**8270E**	**0.0041**		**0.0030**	**0.00056**	**mg/Kg**	**1**
Atrazine	1912-24-9	8270E	ND		0.014	0.0055	mg/Kg	1
Benzaldehyde	100-52-7	8270E	ND		0.014	0.0055	mg/Kg	1
Benzo(a)anthracene	**56-55-3**	**8270E**	**0.051**		**0.0030**	**0.00065**	**mg/Kg**	**1**
Benzo(a)pyrene	**50-32-8**	**8270E**	**0.047**		**0.0030**	**0.00072**	**mg/Kg**	**1**
Benzo(b)fluoranthene	**205-99-2**	**8270E**	**0.062**		**0.0030**	**0.00055**	**mg/Kg**	**1**
Benzo(g,h,i)perylene	**191-24-2**	**8270E**	**0.023**		**0.0030**	**0.00071**	**mg/Kg**	**1**
Benzo(k)fluoranthene	**207-08-9**	**8270E**	**0.025**		**0.0030**	**0.00053**	**mg/Kg**	**1**
1,1'-Biphenyl	92-52-4	8270E	ND		0.014	0.0055	mg/Kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	ND		0.014	0.0055	mg/Kg	1
Butyl benzyl phthalate	85-68-7	8270E	ND		0.014	0.0055	mg/Kg	1
Caprolactam	105-60-2	8270E	ND		0.014	0.0055	mg/Kg	1
Carbazole	86-74-8	8270E	ND		0.014	0.0055	mg/Kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	ND		0.014	0.0055	mg/Kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	ND		0.014	0.0055	mg/Kg	1
4-Chloroaniline	106-47-8	8270E	ND		0.014	0.0055	mg/Kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	ND		0.014	0.0055	mg/Kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	ND		0.014	0.0055	mg/Kg	1
2-Chloronaphthalene	91-58-7	8270E	ND		0.014	0.0055	mg/Kg	1
2-Chlorophenol	95-57-8	8270E	ND		0.014	0.0055	mg/Kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	ND		0.014	0.0055	mg/Kg	1
Chrysene	**218-01-9**	**8270E**	**0.048**		**0.0030**	**0.00049**	**mg/Kg**	**1**
Dibenzo(a,h)anthracene	53-70-3	8270E	ND		0.0030	0.00056	mg/Kg	1
Dibenzofuran	132-64-9	8270E	ND		0.014	0.0055	mg/Kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	ND		0.014	0.0055	mg/Kg	1
2,4-Dichlorophenol	120-83-2	8270E	ND		0.014	0.0055	mg/Kg	1
Diethylphthalate	84-66-2	8270E	ND		0.014	0.0055	mg/Kg	1
Dimethyl phthalate	131-11-3	8270E	ND		0.022	0.0081	mg/Kg	1
2,4-Dimethylphenol	105-67-9	8270E	ND		0.014	0.0055	mg/Kg	1
Di-n-butyl phthalate	84-74-2	8270E	ND		0.014	0.0055	mg/Kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	ND		0.073	0.027	mg/Kg	1
2,4-Dinitrophenol	51-28-5	8270E	ND		0.073	0.027	mg/Kg	1
2,4-Dinitrotoluene	121-14-2	8270E	ND		0.030	0.011	mg/Kg	1
2,6-Dinitrotoluene	606-20-2	8270E	ND		0.030	0.011	mg/Kg	1
Di-n-octylphthalate	117-84-0	8270E	ND		0.014	0.0055	mg/Kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	ND		0.073	0.027	mg/Kg	1
Fluoranthene	**206-44-0**	**8270E**	**0.061**		**0.0030**	**0.00046**	**mg/Kg**	**1**
Fluorene	86-73-7	8270E	ND		0.0030	0.00062	mg/Kg	1
Hexachlorobenzene	118-74-1	8270E	ND		0.014	0.0055	mg/Kg	1
Hexachlorobutadiene	87-68-3	8270E	ND		0.014	0.0055	mg/Kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	ND		0.073	0.027	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-003**	
Description: **RI-SB-15 (2-4)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1800**	Project Name: **TAMP**	% Solids: **86.8**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	1	07/06/2022 1422	CMF	06/28/2022 1624	46376

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Hexachloroethane	67-72-1	8270E	ND		0.014	0.0055	mg/Kg	1
Indeno(1,2,3-c,d)pyrene	**193-39-5**	**8270E**	**0.023**		**0.0030**	**0.0011**	**mg/Kg**	**1**
Isophorone	78-59-1	8270E	ND		0.014	0.0055	mg/Kg	1
2-Methylnaphthalene	91-57-6	8270E	ND		0.0030	0.0011	mg/Kg	1
2-Methylphenol	95-48-7	8270E	ND		0.014	0.0055	mg/Kg	1
3+4-Methylphenol	106-44-5	8270E	ND		0.030	0.011	mg/Kg	1
Naphthalene	**91-20-3**	**8270E**	**0.0018**	**J**	**0.0030**	**0.0011**	**mg/Kg**	**1**
2-Nitroaniline	88-74-4	8270E	ND		0.030	0.011	mg/Kg	1
3-Nitroaniline	99-09-2	8270E	ND		0.030	0.011	mg/Kg	1
4-Nitroaniline	100-01-6	8270E	ND		0.030	0.011	mg/Kg	1
Nitrobenzene	98-95-3	8270E	ND		0.014	0.0055	mg/Kg	1
2-Nitrophenol	88-75-5	8270E	ND		0.030	0.011	mg/Kg	1
4-Nitrophenol	100-02-7	8270E	ND		0.073	0.027	mg/Kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	ND		0.014	0.0055	mg/Kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	ND		0.014	0.0055	mg/Kg	1
Pentachlorophenol	87-86-5	8270E	ND		0.073	0.027	mg/Kg	1
Phenanthrene	**85-01-8**	**8270E**	**0.0077**		**0.0030**	**0.00079**	**mg/Kg**	**1**
Phenol	108-95-2	8270E	ND		0.014	0.0055	mg/Kg	1
Pyrene	**129-00-0**	**8270E**	**0.071**		**0.0030**	**0.00055**	**mg/Kg**	**1**
2,4,5-Trichlorophenol	95-95-4	8270E	ND		0.014	0.0055	mg/Kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	ND		0.014	0.0055	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		81	44-115
2-Fluorophenol		88	35-115
Nitrobenzene-d5		56	37-122
Phenol-d5		81	33-122
Terphenyl-d14		112	54-127
2,4,6-Tribromophenol		71	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-003**	
Description: **RI-SB-15 (2-4)**		Matrix: **Solid**	
Date Sampled: **06/22/2022 1800**	Project Name: **TAMP**	% Solids: **86.8**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/05/2022 2156	BPK	06/27/2022 1617	46274

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**1.8**		**0.56**	**0.22**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**44**		**1.5**	**0.35**	**mg/kg**	**1**
Cadmium	7440-43-9	6020B	ND		0.15	0.028	mg/kg	1
Chromium	**7440-47-3**	**6020B**	**16**		**1.5**	**0.62**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**3.4**		**0.28**	**0.076**	**mg/kg**	**1**
Selenium	**7782-49-2**	**6020B**	**1.0**	**J**	**1.5**	**0.53**	**mg/kg**	**1**
Silver	7440-22-4	6020B	ND		0.28	0.067	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-004**	
Description: **RI-SB-16 (0-4)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1100**	Project Name: **TAMP**	% Solids: **74.4**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	5	07/06/2022 1447	CMF	06/28/2022 1624	46376

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acenaphthene	**83-32-9**	**8270E**	**0.015**	**J**	**0.018**	**0.0055**	**mg/Kg**	**1**
Acenaphthylene	**208-96-8**	**8270E**	**0.018**		**0.018**	**0.0063**	**mg/Kg**	**1**
Acetophenone	98-86-2	8270E	ND		0.086	0.033	mg/Kg	1
Anthracene	**120-12-7**	**8270E**	**0.043**		**0.018**	**0.0034**	**mg/Kg**	**1**
Atrazine	1912-24-9	8270E	ND		0.086	0.033	mg/Kg	1
Benzaldehyde	100-52-7	8270E	ND		0.086	0.033	mg/Kg	1
Benzo(a)anthracene	**56-55-3**	**8270E**	**0.10**		**0.018**	**0.0039**	**mg/Kg**	**1**
Benzo(a)pyrene	**50-32-8**	**8270E**	**0.10**		**0.018**	**0.0044**	**mg/Kg**	**1**
Benzo(b)fluoranthene	**205-99-2**	**8270E**	**0.16**		**0.018**	**0.0033**	**mg/Kg**	**1**
Benzo(g,h,i)perylene	**191-24-2**	**8270E**	**0.067**		**0.018**	**0.0043**	**mg/Kg**	**1**
Benzo(k)fluoranthene	**207-08-9**	**8270E**	**0.059**		**0.018**	**0.0032**	**mg/Kg**	**1**
1,1'-Biphenyl	92-52-4	8270E	ND		0.086	0.033	mg/Kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	ND		0.086	0.033	mg/Kg	1
Butyl benzyl phthalate	85-68-7	8270E	ND		0.086	0.033	mg/Kg	1
Caprolactam	105-60-2	8270E	ND		0.086	0.033	mg/Kg	1
Carbazole	86-74-8	8270E	ND		0.086	0.033	mg/Kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	ND		0.086	0.033	mg/Kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	ND		0.086	0.033	mg/Kg	1
4-Chloroaniline	106-47-8	8270E	ND		0.086	0.033	mg/Kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	ND		0.086	0.033	mg/Kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	ND		0.086	0.033	mg/Kg	1
2-Chloronaphthalene	91-58-7	8270E	ND		0.086	0.033	mg/Kg	1
2-Chlorophenol	95-57-8	8270E	ND		0.086	0.033	mg/Kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	ND		0.086	0.033	mg/Kg	1
Chrysene	**218-01-9**	**8270E**	**0.11**		**0.018**	**0.0030**	**mg/Kg**	**1**
Dibenzo(a,h)anthracene	53-70-3	8270E	ND		0.018	0.0034	mg/Kg	1
Dibenzofuran	132-64-9	8270E	ND		0.086	0.033	mg/Kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	ND		0.086	0.033	mg/Kg	1
2,4-Dichlorophenol	120-83-2	8270E	ND		0.086	0.033	mg/Kg	1
Diethylphthalate	84-66-2	8270E	ND		0.086	0.033	mg/Kg	1
Dimethyl phthalate	131-11-3	8270E	ND		0.13	0.049	mg/Kg	1
2,4-Dimethylphenol	105-67-9	8270E	ND		0.086	0.033	mg/Kg	1
Di-n-butyl phthalate	84-74-2	8270E	ND		0.086	0.033	mg/Kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	ND		0.44	0.17	mg/Kg	1
2,4-Dinitrophenol	51-28-5	8270E	ND		0.44	0.17	mg/Kg	1
2,4-Dinitrotoluene	121-14-2	8270E	ND		0.18	0.066	mg/Kg	1
2,6-Dinitrotoluene	606-20-2	8270E	ND		0.18	0.066	mg/Kg	1
Di-n-octylphthalate	117-84-0	8270E	ND		0.086	0.033	mg/Kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	ND		0.44	0.17	mg/Kg	1
Fluoranthene	**206-44-0**	**8270E**	**0.19**		**0.018**	**0.0028**	**mg/Kg**	**1**
Fluorene	86-73-7	8270E	ND		0.018	0.0038	mg/Kg	1
Hexachlorobenzene	118-74-1	8270E	ND		0.086	0.033	mg/Kg	1
Hexachlorobutadiene	87-68-3	8270E	ND		0.086	0.033	mg/Kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	ND		0.44	0.17	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-004**	
Description: **RI-SB-16 (0-4)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1100**	Project Name: **TAMP**	% Solids: **74.4**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	5	07/06/2022 1447	CMF	06/28/2022 1624	46376

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Hexachloroethane	67-72-1	8270E	ND		0.086	0.033	mg/Kg	1
Indeno(1,2,3-c,d)pyrene	**193-39-5**	**8270E**	**0.059**		**0.018**	**0.0066**	**mg/Kg**	**1**
Isophorone	78-59-1	8270E	ND		0.086	0.033	mg/Kg	1
2-Methylnaphthalene	**91-57-6**	**8270E**	**0.016**	**J**	**0.018**	**0.0066**	**mg/Kg**	**1**
2-Methylphenol	95-48-7	8270E	ND		0.086	0.033	mg/Kg	1
3+4-Methylphenol	106-44-5	8270E	ND		0.18	0.066	mg/Kg	1
Naphthalene	**91-20-3**	**8270E**	**0.016**	**J**	**0.018**	**0.0064**	**mg/Kg**	**1**
2-Nitroaniline	88-74-4	8270E	ND		0.18	0.066	mg/Kg	1
3-Nitroaniline	99-09-2	8270E	ND		0.18	0.066	mg/Kg	1
4-Nitroaniline	100-01-6	8270E	ND		0.18	0.066	mg/Kg	1
Nitrobenzene	98-95-3	8270E	ND		0.086	0.033	mg/Kg	1
2-Nitrophenol	88-75-5	8270E	ND		0.18	0.066	mg/Kg	1
4-Nitrophenol	100-02-7	8270E	ND		0.44	0.17	mg/Kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	ND		0.086	0.033	mg/Kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	ND		0.086	0.033	mg/Kg	1
Pentachlorophenol	87-86-5	8270E	ND		0.44	0.17	mg/Kg	1
Phenanthrene	**85-01-8**	**8270E**	**0.19**		**0.018**	**0.0048**	**mg/Kg**	**1**
Phenol	108-95-2	8270E	ND		0.086	0.033	mg/Kg	1
Pyrene	**129-00-0**	**8270E**	**0.23**		**0.018**	**0.0033**	**mg/Kg**	**1**
2,4,5-Trichlorophenol	95-95-4	8270E	ND		0.086	0.033	mg/Kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	ND		0.086	0.033	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		84	44-115
2-Fluorophenol		75	35-115
Nitrobenzene-d5		81	37-122
Phenol-d5		68	33-122
Terphenyl-d14		96	54-127
2,4,6-Tribromophenol		122	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-004**	
Description: **RI-SB-16 (0-4)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1100**	Project Name: **TAMP**	% Solids: **74.4**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/05/2022 2203	BPK	06/27/2022 1617	46274
2	3050B	6020B	10	07/06/2022 0043	BPK	06/27/2022 1617	46274

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**1.9**		**0.64**	**0.26**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**150**		**17**	**4.0**	**mg/kg**	**2**
Cadmium	**7440-43-9**	**6020B**	**0.25**		**0.17**	**0.032**	**mg/kg**	**1**
Chromium	**7440-47-3**	**6020B**	**29**		**1.7**	**0.71**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**37**		**3.2**	**0.88**	**mg/kg**	**2**
Selenium	**7782-49-2**	**6020B**	**3.9**		**1.7**	**0.61**	**mg/kg**	**1**
Silver	**7440-22-4**	**6020B**	**0.088**	**J**	**0.32**	**0.077**	**mg/kg**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-005**	
Description: **RI-SB-17 (0-6)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1145**	Project Name: **TAMP**	% Solids: **84.6**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	10	07/06/2022 1512	CMF	06/28/2022 1624	46376

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acenaphthene	**83-32-9**	**8270E**	**0.023**	**J**	**0.031**	**0.0096**	**mg/Kg**	**1**
Acenaphthylene	**208-96-8**	**8270E**	**0.051**		**0.031**	**0.011**	**mg/Kg**	**1**
Acetophenone	98-86-2	8270E	ND		0.15	0.058	mg/Kg	1
Anthracene	**120-12-7**	**8270E**	**0.066**		**0.031**	**0.0059**	**mg/Kg**	**1**
Atrazine	1912-24-9	8270E	ND		0.15	0.058	mg/Kg	1
Benzaldehyde	100-52-7	8270E	ND		0.15	0.058	mg/Kg	1
Benzo(a)anthracene	**56-55-3**	**8270E**	**0.14**		**0.031**	**0.0068**	**mg/Kg**	**1**
Benzo(a)pyrene	**50-32-8**	**8270E**	**0.19**		**0.031**	**0.0076**	**mg/Kg**	**1**
Benzo(b)fluoranthene	**205-99-2**	**8270E**	**0.25**		**0.031**	**0.0058**	**mg/Kg**	**1**
Benzo(g,h,i)perylene	**191-24-2**	**8270E**	**0.15**		**0.031**	**0.0075**	**mg/Kg**	**1**
Benzo(k)fluoranthene	**207-08-9**	**8270E**	**0.10**		**0.031**	**0.0055**	**mg/Kg**	**1**
1,1'-Biphenyl	92-52-4	8270E	ND		0.15	0.058	mg/Kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	ND		0.15	0.058	mg/Kg	1
Butyl benzyl phthalate	85-68-7	8270E	ND		0.15	0.058	mg/Kg	1
Caprolactam	105-60-2	8270E	ND		0.15	0.058	mg/Kg	1
Carbazole	**86-74-8**	**8270E**	**0.086**	**J**	**0.15**	**0.058**	**mg/Kg**	**1**
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	ND		0.15	0.058	mg/Kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	ND		0.15	0.058	mg/Kg	1
4-Chloroaniline	106-47-8	8270E	ND		0.15	0.058	mg/Kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	ND		0.15	0.058	mg/Kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	ND		0.15	0.058	mg/Kg	1
2-Chloronaphthalene	91-58-7	8270E	ND		0.15	0.058	mg/Kg	1
2-Chlorophenol	95-57-8	8270E	ND		0.15	0.058	mg/Kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	ND		0.15	0.058	mg/Kg	1
Chrysene	**218-01-9**	**8270E**	**0.21**		**0.031**	**0.0052**	**mg/Kg**	**1**
Dibenzo(a,h)anthracene	53-70-3	8270E	ND		0.031	0.0059	mg/Kg	1
Dibenzofuran	132-64-9	8270E	ND		0.15	0.058	mg/Kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	ND		0.15	0.058	mg/Kg	1
2,4-Dichlorophenol	120-83-2	8270E	ND		0.15	0.058	mg/Kg	1
Diethylphthalate	84-66-2	8270E	ND		0.15	0.058	mg/Kg	1
Dimethyl phthalate	131-11-3	8270E	ND		0.23	0.085	mg/Kg	1
2,4-Dimethylphenol	105-67-9	8270E	ND		0.15	0.058	mg/Kg	1
Di-n-butyl phthalate	84-74-2	8270E	ND		0.15	0.058	mg/Kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	ND		0.77	0.29	mg/Kg	1
2,4-Dinitrophenol	51-28-5	8270E	ND		0.77	0.29	mg/Kg	1
2,4-Dinitrotoluene	121-14-2	8270E	ND		0.31	0.12	mg/Kg	1
2,6-Dinitrotoluene	606-20-2	8270E	ND		0.31	0.12	mg/Kg	1
Di-n-octylphthalate	117-84-0	8270E	ND		0.15	0.058	mg/Kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	ND		0.77	0.29	mg/Kg	1
Fluoranthene	**206-44-0**	**8270E**	**0.16**		**0.031**	**0.0048**	**mg/Kg**	**1**
Fluorene	**86-73-7**	**8270E**	**0.036**		**0.031**	**0.0066**	**mg/Kg**	**1**
Hexachlorobenzene	118-74-1	8270E	ND		0.15	0.058	mg/Kg	1
Hexachlorobutadiene	87-68-3	8270E	ND		0.15	0.058	mg/Kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	ND		0.77	0.29	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-005**	
Description: **RI-SB-17 (0-6)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1145**	Project Name: **TAMP**	% Solids: **84.6**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	10	07/06/2022 1512	CMF	06/28/2022 1624	46376

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Hexachloroethane	67-72-1	8270E	ND		0.15	0.058	mg/Kg	1
Indeno(1,2,3-c,d)pyrene	**193-39-5**	**8270E**	**0.12**		**0.031**	**0.012**	**mg/Kg**	**1**
Isophorone	78-59-1	8270E	ND		0.15	0.058	mg/Kg	1
2-Methylnaphthalene	**91-57-6**	**8270E**	**0.052**		**0.031**	**0.011**	**mg/Kg**	**1**
2-Methylphenol	95-48-7	8270E	ND		0.15	0.058	mg/Kg	1
3+4-Methylphenol	106-44-5	8270E	ND		0.31	0.12	mg/Kg	1
Naphthalene	**91-20-3**	**8270E**	**0.049**		**0.031**	**0.011**	**mg/Kg**	**1**
2-Nitroaniline	88-74-4	8270E	ND		0.31	0.12	mg/Kg	1
3-Nitroaniline	99-09-2	8270E	ND		0.31	0.12	mg/Kg	1
4-Nitroaniline	100-01-6	8270E	ND		0.31	0.12	mg/Kg	1
Nitrobenzene	98-95-3	8270E	ND		0.15	0.058	mg/Kg	1
2-Nitrophenol	88-75-5	8270E	ND		0.31	0.12	mg/Kg	1
4-Nitrophenol	100-02-7	8270E	ND		0.77	0.29	mg/Kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	ND		0.15	0.058	mg/Kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	ND		0.15	0.058	mg/Kg	1
Pentachlorophenol	87-86-5	8270E	ND		0.77	0.29	mg/Kg	1
Phenanthrene	**85-01-8**	**8270E**	**0.36**		**0.031**	**0.0083**	**mg/Kg**	**1**
Phenol	108-95-2	8270E	ND		0.15	0.058	mg/Kg	1
Pyrene	**129-00-0**	**8270E**	**0.22**		**0.031**	**0.0058**	**mg/Kg**	**1**
2,4,5-Trichlorophenol	95-95-4	8270E	ND		0.15	0.058	mg/Kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	ND		0.15	0.058	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		67	44-115
2-Fluorophenol		51	35-115
Nitrobenzene-d5		110	37-122
Phenol-d5		42	33-122
Terphenyl-d14		82	54-127
2,4,6-Tribromophenol		89	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-005**	
Description: **RI-SB-17 (0-6)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1145**	Project Name: **TAMP**	% Solids: **84.6**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/05/2022 2211	BPK	06/27/2022 1617	46274
2	3050B	6020B	10	07/06/2022 0051	BPK	06/27/2022 1617	46274

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**1.8**		**0.46**	**0.19**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**130**		**12**	**2.9**	**mg/kg**	**2**
Cadmium	**7440-43-9**	**6020B**	**0.23**		**0.12**	**0.023**	**mg/kg**	**1**
Chromium	**7440-47-3**	**6020B**	**63**		**1.2**	**0.51**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**48**		**2.3**	**0.63**	**mg/kg**	**2**
Selenium	**7782-49-2**	**6020B**	**2.5**		**1.2**	**0.44**	**mg/kg**	**1**
Silver	**7440-22-4**	**6020B**	**0.076**	**J**	**0.23**	**0.056**	**mg/kg**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-006**	
Description: **RI-SB-18 (0-6)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1345**	Project Name: **TAMP**	% Solids: **83.5**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	10	07/06/2022 1856	CMF	06/28/2022 1624	46376

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acenaphthene	83-32-9	8270E	ND		0.032	0.0097	mg/Kg	1
Acenaphthylene	**208-96-8**	**8270E**	**0.019**	**J**	**0.032**	**0.011**	**mg/Kg**	**1**
Acetophenone	98-86-2	8270E	ND		0.15	0.058	mg/Kg	1
Anthracene	120-12-7	8270E	ND		0.032	0.0060	mg/Kg	1
Atrazine	1912-24-9	8270E	ND		0.15	0.058	mg/Kg	1
Benzaldehyde	100-52-7	8270E	ND		0.15	0.058	mg/Kg	1
Benzo(a)anthracene	56-55-3	8270E	ND		0.032	0.0069	mg/Kg	1
Benzo(a)pyrene	50-32-8	8270E	ND		0.032	0.0077	mg/Kg	1
Benzo(b)fluoranthene	205-99-2	8270E	ND		0.032	0.0058	mg/Kg	1
Benzo(g,h,i)perylene	191-24-2	8270E	ND		0.032	0.0076	mg/Kg	1
Benzo(k)fluoranthene	207-08-9	8270E	ND		0.032	0.0056	mg/Kg	1
1,1'-Biphenyl	92-52-4	8270E	ND		0.15	0.058	mg/Kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	ND		0.15	0.058	mg/Kg	1
Butyl benzyl phthalate	85-68-7	8270E	ND		0.15	0.058	mg/Kg	1
Caprolactam	105-60-2	8270E	ND		0.15	0.058	mg/Kg	1
Carbazole	86-74-8	8270E	ND		0.15	0.058	mg/Kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	ND		0.15	0.058	mg/Kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	ND		0.15	0.058	mg/Kg	1
4-Chloroaniline	106-47-8	8270E	ND		0.15	0.058	mg/Kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	ND		0.15	0.058	mg/Kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	ND		0.15	0.058	mg/Kg	1
2-Chloronaphthalene	91-58-7	8270E	ND		0.15	0.058	mg/Kg	1
2-Chlorophenol	95-57-8	8270E	ND		0.15	0.058	mg/Kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	ND		0.15	0.058	mg/Kg	1
Chrysene	218-01-9	8270E	ND		0.032	0.0053	mg/Kg	1
Dibenzo(a,h)anthracene	53-70-3	8270E	ND		0.032	0.0060	mg/Kg	1
Dibenzofuran	132-64-9	8270E	ND		0.15	0.058	mg/Kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	ND		0.15	0.058	mg/Kg	1
2,4-Dichlorophenol	120-83-2	8270E	ND		0.15	0.058	mg/Kg	1
Diethylphthalate	84-66-2	8270E	ND		0.15	0.058	mg/Kg	1
Dimethyl phthalate	131-11-3	8270E	ND		0.23	0.086	mg/Kg	1
2,4-Dimethylphenol	105-67-9	8270E	ND		0.15	0.058	mg/Kg	1
Di-n-butyl phthalate	84-74-2	8270E	ND		0.15	0.058	mg/Kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	ND		0.78	0.29	mg/Kg	1
2,4-Dinitrophenol	51-28-5	8270E	ND		0.78	0.29	mg/Kg	1
2,4-Dinitrotoluene	121-14-2	8270E	ND		0.32	0.12	mg/Kg	1
2,6-Dinitrotoluene	606-20-2	8270E	ND		0.32	0.12	mg/Kg	1
Di-n-octylphthalate	117-84-0	8270E	ND		0.15	0.058	mg/Kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	ND		0.78	0.29	mg/Kg	1
Fluoranthene	206-44-0	8270E	ND		0.032	0.0049	mg/Kg	1
Fluorene	86-73-7	8270E	ND		0.032	0.0067	mg/Kg	1
Hexachlorobenzene	118-74-1	8270E	ND		0.15	0.058	mg/Kg	1
Hexachlorobutadiene	87-68-3	8270E	ND		0.15	0.058	mg/Kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	ND		0.78	0.29	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-006**	
Description: **RI-SB-18 (0-6)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1345**	Project Name: **TAMP**	% Solids: **83.5**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	10	07/06/2022 1856	CMF	06/28/2022 1624	46376

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Hexachloroethane	67-72-1	8270E	ND		0.15	0.058	mg/Kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	ND		0.032	0.012	mg/Kg	1
Isophorone	78-59-1	8270E	ND		0.15	0.058	mg/Kg	1
2-Methylnaphthalene	91-57-6	8270E	ND		0.032	0.012	mg/Kg	1
2-Methylphenol	95-48-7	8270E	ND		0.15	0.058	mg/Kg	1
3+4-Methylphenol	106-44-5	8270E	ND		0.32	0.12	mg/Kg	1
Naphthalene	91-20-3	8270E	ND		0.032	0.011	mg/Kg	1
2-Nitroaniline	88-74-4	8270E	ND		0.32	0.12	mg/Kg	1
3-Nitroaniline	99-09-2	8270E	ND		0.32	0.12	mg/Kg	1
4-Nitroaniline	100-01-6	8270E	ND		0.32	0.12	mg/Kg	1
Nitrobenzene	98-95-3	8270E	ND		0.15	0.058	mg/Kg	1
2-Nitrophenol	88-75-5	8270E	ND		0.32	0.12	mg/Kg	1
4-Nitrophenol	100-02-7	8270E	ND		0.78	0.29	mg/Kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	ND		0.15	0.058	mg/Kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	ND		0.15	0.058	mg/Kg	1
Pentachlorophenol	87-86-5	8270E	ND		0.78	0.29	mg/Kg	1
Phenanthrene	85-01-8	8270E	ND		0.032	0.0084	mg/Kg	1
Phenol	108-95-2	8270E	ND		0.15	0.058	mg/Kg	1
Pyrene	129-00-0	8270E	ND		0.032	0.0058	mg/Kg	1
2,4,5-Trichlorophenol	95-95-4	8270E	ND		0.15	0.058	mg/Kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	ND		0.15	0.058	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		65	44-115
2-Fluorophenol		68	35-115
Nitrobenzene-d5		112	37-122
Phenol-d5		61	33-122
Terphenyl-d14		100	54-127
2,4,6-Tribromophenol		87	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-006**	
Description: **RI-SB-18 (0-6)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1345**	Project Name: **TAMP**	% Solids: **83.5**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/05/2022 2219	BPK	06/27/2022 1617	46274
2	3050B	6020B	10	07/06/2022 0058	BPK	06/27/2022 1617	46274

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**1.5**		**0.59**	**0.24**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**130**		**15**	**3.7**	**mg/kg**	**2**
Cadmium	7440-43-9	6020B	ND		0.15	0.030	mg/kg	1
Chromium	**7440-47-3**	**6020B**	**54**		**1.5**	**0.66**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**3.2**		**3.0**	**0.81**	**mg/kg**	**2**
Selenium	**7782-49-2**	**6020B**	**3.9**		**1.5**	**0.56**	**mg/kg**	**1**
Silver	7440-22-4	6020B	ND		0.30	0.071	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-007**	
Description: **RI-SB-19 (0-4)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1445**	Project Name: **TAMP**	% Solids: **79.6**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	10	07/06/2022 1602	CMF	06/28/2022 1624	46376

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acenaphthene	83-32-9	8270E	ND		0.033	0.010	mg/Kg	1
Acenaphthylene	**208-96-8**	**8270E**	**0.068**		**0.033**	**0.012**	**mg/Kg**	**1**
Acetophenone	98-86-2	8270E	ND		0.16	0.061	mg/Kg	1
Anthracene	**120-12-7**	**8270E**	**0.044**		**0.033**	**0.0062**	**mg/Kg**	**1**
Atrazine	1912-24-9	8270E	ND		0.16	0.061	mg/Kg	1
Benzaldehyde	100-52-7	8270E	ND		0.16	0.061	mg/Kg	1
Benzo(a)anthracene	**56-55-3**	**8270E**	**0.050**		**0.033**	**0.0072**	**mg/Kg**	**1**
Benzo(a)pyrene	**50-32-8**	**8270E**	**0.065**		**0.033**	**0.0081**	**mg/Kg**	**1**
Benzo(b)fluoranthene	**205-99-2**	**8270E**	**0.078**		**0.033**	**0.0061**	**mg/Kg**	**1**
Benzo(g,h,i)perylene	**191-24-2**	**8270E**	**0.059**		**0.033**	**0.0080**	**mg/Kg**	**1**
Benzo(k)fluoranthene	**207-08-9**	**8270E**	**0.020**	**J**	**0.033**	**0.0059**	**mg/Kg**	**1**
1,1'-Biphenyl	92-52-4	8270E	ND		0.16	0.061	mg/Kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	ND		0.16	0.061	mg/Kg	1
Butyl benzyl phthalate	85-68-7	8270E	ND		0.16	0.061	mg/Kg	1
Caprolactam	105-60-2	8270E	ND		0.16	0.061	mg/Kg	1
Carbazole	86-74-8	8270E	ND		0.16	0.061	mg/Kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	ND		0.16	0.061	mg/Kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	ND		0.16	0.061	mg/Kg	1
4-Chloroaniline	106-47-8	8270E	ND		0.16	0.061	mg/Kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	ND		0.16	0.061	mg/Kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	ND		0.16	0.061	mg/Kg	1
2-Chloronaphthalene	91-58-7	8270E	ND		0.16	0.061	mg/Kg	1
2-Chlorophenol	95-57-8	8270E	ND		0.16	0.061	mg/Kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	ND		0.16	0.061	mg/Kg	1
Chrysene	**218-01-9**	**8270E**	**0.049**		**0.033**	**0.0055**	**mg/Kg**	**1**
Dibenzo(a,h)anthracene	53-70-3	8270E	ND		0.033	0.0062	mg/Kg	1
Dibenzofuran	132-64-9	8270E	ND		0.16	0.061	mg/Kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	ND		0.16	0.061	mg/Kg	1
2,4-Dichlorophenol	120-83-2	8270E	ND		0.16	0.061	mg/Kg	1
Diethylphthalate	84-66-2	8270E	ND		0.16	0.061	mg/Kg	1
Dimethyl phthalate	131-11-3	8270E	ND		0.24	0.091	mg/Kg	1
2,4-Dimethylphenol	105-67-9	8270E	ND		0.16	0.061	mg/Kg	1
Di-n-butyl phthalate	84-74-2	8270E	ND		0.16	0.061	mg/Kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	ND		0.82	0.31	mg/Kg	1
2,4-Dinitrophenol	51-28-5	8270E	ND		0.82	0.31	mg/Kg	1
2,4-Dinitrotoluene	121-14-2	8270E	ND		0.33	0.12	mg/Kg	1
2,6-Dinitrotoluene	606-20-2	8270E	ND		0.33	0.12	mg/Kg	1
Di-n-octylphthalate	117-84-0	8270E	ND		0.16	0.061	mg/Kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	ND		0.82	0.31	mg/Kg	1
Fluoranthene	**206-44-0**	**8270E**	**0.057**		**0.033**	**0.0051**	**mg/Kg**	**1**
Fluorene	**86-73-7**	**8270E**	**0.034**		**0.033**	**0.0070**	**mg/Kg**	**1**
Hexachlorobenzene	118-74-1	8270E	ND		0.16	0.061	mg/Kg	1
Hexachlorobutadiene	87-68-3	8270E	ND		0.16	0.061	mg/Kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	ND		0.82	0.31	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-007**	
Description: **RI-SB-19 (0-4)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1445**	Project Name: **TAMP**	% Solids: **79.6**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	10	07/06/2022 1602	CMF	06/28/2022 1624	46376

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Hexachloroethane	67-72-1	8270E	ND		0.16	0.061	mg/Kg	1
Indeno(1,2,3-c,d)pyrene	**193-39-5**	**8270E**	**0.040**		**0.033**	**0.012**	**mg/Kg**	**1**
Isophorone	78-59-1	8270E	ND		0.16	0.061	mg/Kg	1
2-Methylnaphthalene	**91-57-6**	**8270E**	**0.023**	**J**	**0.033**	**0.012**	**mg/Kg**	**1**
2-Methylphenol	95-48-7	8270E	ND		0.16	0.061	mg/Kg	1
3+4-Methylphenol	106-44-5	8270E	ND		0.33	0.12	mg/Kg	1
Naphthalene	91-20-3	8270E	ND		0.033	0.012	mg/Kg	1
2-Nitroaniline	88-74-4	8270E	ND		0.33	0.12	mg/Kg	1
3-Nitroaniline	99-09-2	8270E	ND		0.33	0.12	mg/Kg	1
4-Nitroaniline	100-01-6	8270E	ND		0.33	0.12	mg/Kg	1
Nitrobenzene	98-95-3	8270E	ND		0.16	0.061	mg/Kg	1
2-Nitrophenol	88-75-5	8270E	ND		0.33	0.12	mg/Kg	1
4-Nitrophenol	100-02-7	8270E	ND		0.82	0.31	mg/Kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	ND		0.16	0.061	mg/Kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	ND		0.16	0.061	mg/Kg	1
Pentachlorophenol	87-86-5	8270E	ND		0.82	0.31	mg/Kg	1
Phenanthrene	**85-01-8**	**8270E**	**0.088**		**0.033**	**0.0088**	**mg/Kg**	**1**
Phenol	108-95-2	8270E	ND		0.16	0.061	mg/Kg	1
Pyrene	**129-00-0**	**8270E**	**0.16**		**0.033**	**0.0061**	**mg/Kg**	**1**
2,4,5-Trichlorophenol	95-95-4	8270E	ND		0.16	0.061	mg/Kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	ND		0.16	0.061	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		64	44-115
2-Fluorophenol		59	35-115
Nitrobenzene-d5		110	37-122
Phenol-d5		57	33-122
Terphenyl-d14		94	54-127
2,4,6-Tribromophenol		91	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-007**	
Description: **RI-SB-19 (0-4)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1445**	Project Name: **TAMP**	% Solids: **79.6**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/05/2022 2241	BPK	06/27/2022 1617	46274
2	3050B	6020B	10	07/06/2022 0106	BPK	06/27/2022 1617	46274

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**2.6**		**0.58**	**0.23**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**74**		**15**	**3.6**	**mg/kg**	**2**
Cadmium	**7440-43-9**	**6020B**	**0.034**	**J**	**0.15**	**0.029**	**mg/kg**	**1**
Chromium	**7440-47-3**	**6020B**	**36**		**1.5**	**0.64**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**9.1**		**0.29**	**0.079**	**mg/kg**	**1**
Selenium	**7782-49-2**	**6020B**	**1.9**		**1.5**	**0.55**	**mg/kg**	**1**
Silver	7440-22-4	6020B	ND		0.29	0.070	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-008**	
Description: **RI-SB-20 (0-6)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1615**	Project Name: **TAMP**	% Solids: **78.9**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	5	07/06/2022 1627	CMF	06/28/2022 1624	46376

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acenaphthene	83-32-9	8270E	ND		0.017	0.0052	mg/Kg	1
Acenaphthylene	208-96-8	8270E	ND		0.017	0.0059	mg/Kg	1
Acetophenone	98-86-2	8270E	ND		0.081	0.031	mg/Kg	1
Anthracene	120-12-7	8270E	ND		0.017	0.0032	mg/Kg	1
Atrazine	1912-24-9	8270E	ND		0.081	0.031	mg/Kg	1
Benzaldehyde	100-52-7	8270E	ND		0.081	0.031	mg/Kg	1
Benzo(a)anthracene	**56-55-3**	**8270E**	**0.017**		**0.017**	**0.0037**	**mg/Kg**	**1**
Benzo(a)pyrene	**50-32-8**	**8270E**	**0.019**		**0.017**	**0.0041**	**mg/Kg**	**1**
Benzo(b)fluoranthene	**205-99-2**	**8270E**	**0.021**		**0.017**	**0.0031**	**mg/Kg**	**1**
Benzo(g,h,i)perylene	**191-24-2**	**8270E**	**0.013**	**J**	**0.017**	**0.0040**	**mg/Kg**	**1**
Benzo(k)fluoranthene	207-08-9	8270E	ND		0.017	0.0030	mg/Kg	1
1,1'-Biphenyl	92-52-4	8270E	ND		0.081	0.031	mg/Kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	ND		0.081	0.031	mg/Kg	1
Butyl benzyl phthalate	85-68-7	8270E	ND		0.081	0.031	mg/Kg	1
Caprolactam	105-60-2	8270E	ND		0.081	0.031	mg/Kg	1
Carbazole	86-74-8	8270E	ND		0.081	0.031	mg/Kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	ND		0.081	0.031	mg/Kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	ND		0.081	0.031	mg/Kg	1
4-Chloroaniline	106-47-8	8270E	ND		0.081	0.031	mg/Kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	ND		0.081	0.031	mg/Kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	ND		0.081	0.031	mg/Kg	1
2-Chloronaphthalene	91-58-7	8270E	ND		0.081	0.031	mg/Kg	1
2-Chlorophenol	95-57-8	8270E	ND		0.081	0.031	mg/Kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	ND		0.081	0.031	mg/Kg	1
Chrysene	**218-01-9**	**8270E**	**0.012**	**J**	**0.017**	**0.0028**	**mg/Kg**	**1**
Dibenzo(a,h)anthracene	53-70-3	8270E	ND		0.017	0.0032	mg/Kg	1
Dibenzofuran	132-64-9	8270E	ND		0.081	0.031	mg/Kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	ND		0.081	0.031	mg/Kg	1
2,4-Dichlorophenol	120-83-2	8270E	ND		0.081	0.031	mg/Kg	1
Diethylphthalate	84-66-2	8270E	ND		0.081	0.031	mg/Kg	1
Dimethyl phthalate	131-11-3	8270E	ND		0.12	0.046	mg/Kg	1
2,4-Dimethylphenol	105-67-9	8270E	ND		0.081	0.031	mg/Kg	1
Di-n-butyl phthalate	84-74-2	8270E	ND		0.081	0.031	mg/Kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	ND		0.42	0.16	mg/Kg	1
2,4-Dinitrophenol	51-28-5	8270E	ND		0.42	0.16	mg/Kg	1
2,4-Dinitrotoluene	121-14-2	8270E	ND		0.17	0.062	mg/Kg	1
2,6-Dinitrotoluene	606-20-2	8270E	ND		0.17	0.062	mg/Kg	1
Di-n-octylphthalate	117-84-0	8270E	ND		0.081	0.031	mg/Kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	ND		0.42	0.16	mg/Kg	1
Fluoranthene	**206-44-0**	**8270E**	**0.021**		**0.017**	**0.0026**	**mg/Kg**	**1**
Fluorene	86-73-7	8270E	ND		0.017	0.0035	mg/Kg	1
Hexachlorobenzene	118-74-1	8270E	ND		0.081	0.031	mg/Kg	1
Hexachlorobutadiene	87-68-3	8270E	ND		0.081	0.031	mg/Kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	ND		0.42	0.16	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-008**	
Description: **RI-SB-20 (0-6)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1615**	Project Name: **TAMP**	% Solids: **78.9**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	5	07/06/2022 1627	CMF	06/28/2022 1624	46376

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Hexachloroethane	67-72-1	8270E	ND		0.081	0.031	mg/Kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	ND		0.017	0.0062	mg/Kg	1
Isophorone	78-59-1	8270E	ND		0.081	0.031	mg/Kg	1
2-Methylnaphthalene	**91-57-6**	**8270E**	**0.010**	**J**	**0.017**	**0.0061**	**mg/Kg**	**1**
2-Methylphenol	95-48-7	8270E	ND		0.081	0.031	mg/Kg	1
3+4-Methylphenol	106-44-5	8270E	ND		0.17	0.062	mg/Kg	1
Naphthalene	91-20-3	8270E	ND		0.017	0.0060	mg/Kg	1
2-Nitroaniline	88-74-4	8270E	ND		0.17	0.062	mg/Kg	1
3-Nitroaniline	99-09-2	8270E	ND		0.17	0.062	mg/Kg	1
4-Nitroaniline	100-01-6	8270E	ND		0.17	0.062	mg/Kg	1
Nitrobenzene	98-95-3	8270E	ND		0.081	0.031	mg/Kg	1
2-Nitrophenol	88-75-5	8270E	ND		0.17	0.062	mg/Kg	1
4-Nitrophenol	100-02-7	8270E	ND		0.42	0.16	mg/Kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	ND		0.081	0.031	mg/Kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	ND		0.081	0.031	mg/Kg	1
Pentachlorophenol	87-86-5	8270E	ND		0.42	0.16	mg/Kg	1
Phenanthrene	**85-01-8**	**8270E**	**0.020**		**0.017**	**0.0045**	**mg/Kg**	**1**
Phenol	108-95-2	8270E	ND		0.081	0.031	mg/Kg	1
Pyrene	**129-00-0**	**8270E**	**0.031**		**0.017**	**0.0031**	**mg/Kg**	**1**
2,4,5-Trichlorophenol	95-95-4	8270E	ND		0.081	0.031	mg/Kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	ND		0.081	0.031	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		72	44-115
2-Fluorophenol		70	35-115
Nitrobenzene-d5		77	37-122
Phenol-d5		60	33-122
Terphenyl-d14		97	54-127
2,4,6-Tribromophenol		73	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-008**	
Description: **RI-SB-20 (0-6)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1615**	Project Name: **TAMP**	% Solids: **78.9**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/05/2022 2249	BPK	06/27/2022 1617	46274
2	3050B	6020B	10	07/06/2022 0114	BPK	06/27/2022 1617	46274

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**1.7**		**0.52**	**0.21**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**70**		**14**	**3.2**	**mg/kg**	**2**
Cadmium	7440-43-9	6020B	ND		0.14	0.026	mg/kg	1
Chromium	**7440-47-3**	**6020B**	**27**		**1.4**	**0.58**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**5.2**		**2.6**	**0.71**	**mg/kg**	**2**
Selenium	**7782-49-2**	**6020B**	**1.6**		**1.4**	**0.49**	**mg/kg**	**1**
Silver	7440-22-4	6020B	ND		0.26	0.063	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-009**	
Description: **RI-SB-21 (0-4)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1700**	Project Name: **TAMP**	% Solids: **82.7**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	10	07/06/2022 1921	CMF	06/28/2022 1624	46376

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acenaphthene	83-32-9	8270E	ND		0.032	0.0099	mg/Kg	1
Acenaphthylene	208-96-8	8270E	ND		0.032	0.011	mg/Kg	1
Acetophenone	98-86-2	8270E	ND		0.16	0.060	mg/Kg	1
Anthracene	120-12-7	8270E	ND		0.032	0.0061	mg/Kg	1
Atrazine	1912-24-9	8270E	ND		0.16	0.060	mg/Kg	1
Benzaldehyde	100-52-7	8270E	ND		0.16	0.060	mg/Kg	1
Benzo(a)anthracene	56-55-3	8270E	ND		0.032	0.0070	mg/Kg	1
Benzo(a)pyrene	50-32-8	8270E	ND		0.032	0.0079	mg/Kg	1
Benzo(b)fluoranthene	205-99-2	8270E	ND		0.032	0.0060	mg/Kg	1
Benzo(g,h,i)perylene	**191-24-2**	**8270E**	**0.017**	**J**	**0.032**	**0.0078**	**mg/Kg**	**1**
Benzo(k)fluoranthene	207-08-9	8270E	ND		0.032	0.0057	mg/Kg	1
1,1'-Biphenyl	92-52-4	8270E	ND		0.16	0.060	mg/Kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	ND		0.16	0.060	mg/Kg	1
Butyl benzyl phthalate	85-68-7	8270E	ND		0.16	0.060	mg/Kg	1
Caprolactam	105-60-2	8270E	ND		0.16	0.060	mg/Kg	1
Carbazole	86-74-8	8270E	ND		0.16	0.060	mg/Kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	ND		0.16	0.060	mg/Kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	ND		0.16	0.060	mg/Kg	1
4-Chloroaniline	106-47-8	8270E	ND		0.16	0.060	mg/Kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	ND		0.16	0.060	mg/Kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	ND		0.16	0.060	mg/Kg	1
2-Chloronaphthalene	91-58-7	8270E	ND		0.16	0.060	mg/Kg	1
2-Chlorophenol	95-57-8	8270E	ND		0.16	0.060	mg/Kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	ND		0.16	0.060	mg/Kg	1
Chrysene	218-01-9	8270E	ND		0.032	0.0054	mg/Kg	1
Dibenzo(a,h)anthracene	53-70-3	8270E	ND		0.032	0.0061	mg/Kg	1
Dibenzofuran	132-64-9	8270E	ND		0.16	0.060	mg/Kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	ND		0.16	0.060	mg/Kg	1
2,4-Dichlorophenol	120-83-2	8270E	ND		0.16	0.060	mg/Kg	1
Diethylphthalate	84-66-2	8270E	ND		0.16	0.060	mg/Kg	1
Dimethyl phthalate	131-11-3	8270E	ND		0.24	0.088	mg/Kg	1
2,4-Dimethylphenol	105-67-9	8270E	ND		0.16	0.060	mg/Kg	1
Di-n-butyl phthalate	84-74-2	8270E	ND		0.16	0.060	mg/Kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	ND		0.80	0.30	mg/Kg	1
2,4-Dinitrophenol	51-28-5	8270E	ND		0.80	0.30	mg/Kg	1
2,4-Dinitrotoluene	121-14-2	8270E	ND		0.32	0.12	mg/Kg	1
2,6-Dinitrotoluene	606-20-2	8270E	ND		0.32	0.12	mg/Kg	1
Di-n-octylphthalate	117-84-0	8270E	ND		0.16	0.060	mg/Kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	ND		0.80	0.30	mg/Kg	1
Fluoranthene	**206-44-0**	**8270E**	**0.027**	**J**	**0.032**	**0.0050**	**mg/Kg**	**1**
Fluorene	86-73-7	8270E	ND		0.032	0.0068	mg/Kg	1
Hexachlorobenzene	118-74-1	8270E	ND		0.16	0.060	mg/Kg	1
Hexachlorobutadiene	87-68-3	8270E	ND		0.16	0.060	mg/Kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	ND		0.80	0.30	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-009**	
Description: **RI-SB-21 (0-4)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1700**	Project Name: **TAMP**	% Solids: **82.7**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	10	07/06/2022 1921	CMF	06/28/2022 1624	46376

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Hexachloroethane	67-72-1	8270E	ND		0.16	0.060	mg/Kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	ND		0.032	0.012	mg/Kg	1
Isophorone	78-59-1	8270E	ND		0.16	0.060	mg/Kg	1
2-Methylnaphthalene	91-57-6	8270E	ND		0.032	0.012	mg/Kg	1
2-Methylphenol	95-48-7	8270E	ND		0.16	0.060	mg/Kg	1
3+4-Methylphenol	106-44-5	8270E	ND		0.32	0.12	mg/Kg	1
Naphthalene	91-20-3	8270E	ND		0.032	0.012	mg/Kg	1
2-Nitroaniline	88-74-4	8270E	ND		0.32	0.12	mg/Kg	1
3-Nitroaniline	99-09-2	8270E	ND		0.32	0.12	mg/Kg	1
4-Nitroaniline	100-01-6	8270E	ND		0.32	0.12	mg/Kg	1
Nitrobenzene	98-95-3	8270E	ND		0.16	0.060	mg/Kg	1
2-Nitrophenol	88-75-5	8270E	ND		0.32	0.12	mg/Kg	1
4-Nitrophenol	100-02-7	8270E	ND		0.80	0.30	mg/Kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	ND		0.16	0.060	mg/Kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	ND		0.16	0.060	mg/Kg	1
Pentachlorophenol	87-86-5	8270E	ND		0.80	0.30	mg/Kg	1
Phenanthrene	**85-01-8**	**8270E**	**0.028**	**J**	**0.032**	**0.0086**	**mg/Kg**	**1**
Phenol	108-95-2	8270E	ND		0.16	0.060	mg/Kg	1
Pyrene	**129-00-0**	**8270E**	**0.026**	**J**	**0.032**	**0.0060**	**mg/Kg**	**1**
2,4,5-Trichlorophenol	95-95-4	8270E	ND		0.16	0.060	mg/Kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	ND		0.16	0.060	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		68	44-115
2-Fluorophenol		69	35-115
Nitrobenzene-d5		115	37-122
Phenol-d5		50	33-122
Terphenyl-d14		100	54-127
2,4,6-Tribromophenol		98	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-009**	
Description: **RI-SB-21 (0-4)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1700**	Project Name: **TAMP**	% Solids: **82.7**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/05/2022 2257	BPK	06/27/2022 1617	46274
2	3050B	6020B	10	07/06/2022 0121	BPK	06/27/2022 1617	46274

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**1.5**		**0.51**	**0.20**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**78**		**13**	**3.2**	**mg/kg**	**2**
Cadmium	7440-43-9	6020B	ND		0.13	0.026	mg/kg	1
Chromium	**7440-47-3**	**6020B**	**16**		**1.3**	**0.57**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**6.0**		**0.26**	**0.070**	**mg/kg**	**1**
Selenium	**7782-49-2**	**6020B**	**1.1**	**J**	**1.3**	**0.48**	**mg/kg**	**1**
Silver	7440-22-4	6020B	ND		0.26	0.061	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-010**	
Description: **RI-SB-22 (0-8)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1750**	Project Name: **TAMP**	% Solids: **82.4**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	5	07/06/2022 1742	CMF	06/28/2022 1624	46376

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acenaphthene	83-32-9	8270E	ND		0.016	0.0048	mg/Kg	1
Acenaphthylene	208-96-8	8270E	ND		0.016	0.0055	mg/Kg	1
Acetophenone	98-86-2	8270E	ND		0.076	0.029	mg/Kg	1
Anthracene	**120-12-7**	**8270E**	**0.012**	**J**	**0.016**	**0.0030**	**mg/Kg**	**1**
Atrazine	1912-24-9	8270E	ND		0.076	0.029	mg/Kg	1
Benzaldehyde	100-52-7	8270E	ND		0.076	0.029	mg/Kg	1
Benzo(a)anthracene	**56-55-3**	**8270E**	**0.0090**	**J**	**0.016**	**0.0034**	**mg/Kg**	**1**
Benzo(a)pyrene	50-32-8	8270E	ND		0.016	0.0039	mg/Kg	1
Benzo(b)fluoranthene	**205-99-2**	**8270E**	**0.010**	**J**	**0.016**	**0.0029**	**mg/Kg**	**1**
Benzo(g,h,i)perylene	**191-24-2**	**8270E**	**0.012**	**J**	**0.016**	**0.0038**	**mg/Kg**	**1**
Benzo(k)fluoranthene	207-08-9	8270E	ND		0.016	0.0028	mg/Kg	1
1,1'-Biphenyl	92-52-4	8270E	ND		0.076	0.029	mg/Kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	ND		0.076	0.029	mg/Kg	1
Butyl benzyl phthalate	85-68-7	8270E	ND		0.076	0.029	mg/Kg	1
Caprolactam	105-60-2	8270E	ND		0.076	0.029	mg/Kg	1
Carbazole	86-74-8	8270E	ND		0.076	0.029	mg/Kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	ND		0.076	0.029	mg/Kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	ND		0.076	0.029	mg/Kg	1
4-Chloroaniline	106-47-8	8270E	ND		0.076	0.029	mg/Kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	ND		0.076	0.029	mg/Kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	ND		0.076	0.029	mg/Kg	1
2-Chloronaphthalene	91-58-7	8270E	ND		0.076	0.029	mg/Kg	1
2-Chlorophenol	95-57-8	8270E	ND		0.076	0.029	mg/Kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	ND		0.076	0.029	mg/Kg	1
Chrysene	**218-01-9**	**8270E**	**0.016**		**0.016**	**0.0026**	**mg/Kg**	**1**
Dibenzo(a,h)anthracene	53-70-3	8270E	ND		0.016	0.0030	mg/Kg	1
Dibenzofuran	132-64-9	8270E	ND		0.076	0.029	mg/Kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	ND		0.076	0.029	mg/Kg	1
2,4-Dichlorophenol	120-83-2	8270E	ND		0.076	0.029	mg/Kg	1
Diethylphthalate	84-66-2	8270E	ND		0.076	0.029	mg/Kg	1
Dimethyl phthalate	131-11-3	8270E	ND		0.12	0.043	mg/Kg	1
2,4-Dimethylphenol	105-67-9	8270E	ND		0.076	0.029	mg/Kg	1
Di-n-butyl phthalate	84-74-2	8270E	ND		0.076	0.029	mg/Kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	ND		0.39	0.15	mg/Kg	1
2,4-Dinitrophenol	51-28-5	8270E	ND		0.39	0.15	mg/Kg	1
2,4-Dinitrotoluene	121-14-2	8270E	ND		0.16	0.058	mg/Kg	1
2,6-Dinitrotoluene	606-20-2	8270E	ND		0.16	0.058	mg/Kg	1
Di-n-octylphthalate	117-84-0	8270E	ND		0.076	0.029	mg/Kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	ND		0.39	0.15	mg/Kg	1
Fluoranthene	206-44-0	8270E	ND		0.016	0.0025	mg/Kg	1
Fluorene	86-73-7	8270E	ND		0.016	0.0033	mg/Kg	1
Hexachlorobenzene	118-74-1	8270E	ND		0.076	0.029	mg/Kg	1
Hexachlorobutadiene	87-68-3	8270E	ND		0.076	0.029	mg/Kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	ND		0.39	0.15	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-010**	
Description: **RI-SB-22 (0-8)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1750**	Project Name: **TAMP**	% Solids: **82.4**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	5	07/06/2022 1742	CMF	06/28/2022 1624	46376

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Hexachloroethane	67-72-1	8270E	ND		0.076	0.029	mg/Kg	1
Indeno(1,2,3-c,d)pyrene	**193-39-5**	**8270E**	**0.0085**	**J**	**0.016**	**0.0058**	**mg/Kg**	**1**
Isophorone	78-59-1	8270E	ND		0.076	0.029	mg/Kg	1
2-Methylnaphthalene	**91-57-6**	**8270E**	**0.016**		**0.016**	**0.0058**	**mg/Kg**	**1**
2-Methylphenol	95-48-7	8270E	ND		0.076	0.029	mg/Kg	1
3+4-Methylphenol	106-44-5	8270E	ND		0.16	0.058	mg/Kg	1
Naphthalene	91-20-3	8270E	ND		0.016	0.0057	mg/Kg	1
2-Nitroaniline	88-74-4	8270E	ND		0.16	0.058	mg/Kg	1
3-Nitroaniline	99-09-2	8270E	ND		0.16	0.058	mg/Kg	1
4-Nitroaniline	100-01-6	8270E	ND		0.16	0.058	mg/Kg	1
Nitrobenzene	98-95-3	8270E	ND		0.076	0.029	mg/Kg	1
2-Nitrophenol	88-75-5	8270E	ND		0.16	0.058	mg/Kg	1
4-Nitrophenol	100-02-7	8270E	ND		0.39	0.15	mg/Kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	ND		0.076	0.029	mg/Kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	ND		0.076	0.029	mg/Kg	1
Pentachlorophenol	87-86-5	8270E	ND		0.39	0.15	mg/Kg	1
Phenanthrene	**85-01-8**	**8270E**	**0.022**		**0.016**	**0.0042**	**mg/Kg**	**1**
Phenol	108-95-2	8270E	ND		0.076	0.029	mg/Kg	1
Pyrene	**129-00-0**	**8270E**	**0.024**		**0.016**	**0.0029**	**mg/Kg**	**1**
2,4,5-Trichlorophenol	95-95-4	8270E	ND		0.076	0.029	mg/Kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	ND		0.076	0.029	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		77	44-115
2-Fluorophenol		76	35-115
Nitrobenzene-d5		78	37-122
Phenol-d5		58	33-122
Terphenyl-d14		87	54-127
2,4,6-Tribromophenol		99	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-010**	
Description: **RI-SB-22 (0-8)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1750**	Project Name: **TAMP**	% Solids: **82.4**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/05/2022 2304	BPK	06/27/2022 1617	46274

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**1.2**		**0.53**	**0.21**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**48**		**1.4**	**0.33**	**mg/kg**	**1**
Cadmium	7440-43-9	6020B	ND		0.14	0.027	mg/kg	1
Chromium	**7440-47-3**	**6020B**	**21**		**1.4**	**0.59**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**5.1**		**0.27**	**0.072**	**mg/kg**	**1**
Selenium	**7782-49-2**	**6020B**	**1.1**	**J**	**1.4**	**0.50**	**mg/kg**	**1**
Silver	7440-22-4	6020B	ND		0.27	0.064	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-011**	
Description: **RI-SB-23 (4-8)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1805**	Project Name: **TAMP**	% Solids: **83.2**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	10	07/06/2022 1807	CMF	06/28/2022 1624	46376

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acenaphthene	**83-32-9**	**8270E**	**0.11**		**0.031**	**0.0096**	**mg/Kg**	**1**
Acenaphthylene	208-96-8	8270E	ND		0.031	0.011	mg/Kg	1
Acetophenone	98-86-2	8270E	ND		0.15	0.058	mg/Kg	1
Anthracene	**120-12-7**	**8270E**	**0.31**		**0.031**	**0.0059**	**mg/Kg**	**1**
Atrazine	1912-24-9	8270E	ND		0.15	0.058	mg/Kg	1
Benzaldehyde	100-52-7	8270E	ND		0.15	0.058	mg/Kg	1
Benzo(a)anthracene	**56-55-3**	**8270E**	**2.1**		**0.031**	**0.0069**	**mg/Kg**	**1**
Benzo(a)pyrene	**50-32-8**	**8270E**	**2.5**		**0.031**	**0.0077**	**mg/Kg**	**1**
Benzo(b)fluoranthene	**205-99-2**	**8270E**	**2.8**		**0.031**	**0.0058**	**mg/Kg**	**1**
Benzo(g,h,i)perylene	**191-24-2**	**8270E**	**0.78**		**0.031**	**0.0076**	**mg/Kg**	**1**
Benzo(k)fluoranthene	**207-08-9**	**8270E**	**1.2**		**0.031**	**0.0056**	**mg/Kg**	**1**
1,1'-Biphenyl	92-52-4	8270E	ND		0.15	0.058	mg/Kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	ND		0.15	0.058	mg/Kg	1
Butyl benzyl phthalate	85-68-7	8270E	ND		0.15	0.058	mg/Kg	1
Caprolactam	105-60-2	8270E	ND		0.15	0.058	mg/Kg	1
Carbazole	**86-74-8**	**8270E**	**0.27**		**0.15**	**0.058**	**mg/Kg**	**1**
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	ND		0.15	0.058	mg/Kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	ND		0.15	0.058	mg/Kg	1
4-Chloroaniline	106-47-8	8270E	ND		0.15	0.058	mg/Kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	ND		0.15	0.058	mg/Kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	ND		0.15	0.058	mg/Kg	1
2-Chloronaphthalene	91-58-7	8270E	ND		0.15	0.058	mg/Kg	1
2-Chlorophenol	95-57-8	8270E	ND		0.15	0.058	mg/Kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	ND		0.15	0.058	mg/Kg	1
Chrysene	**218-01-9**	**8270E**	**2.0**		**0.031**	**0.0052**	**mg/Kg**	**1**
Dibenzo(a,h)anthracene	53-70-3	8270E	ND		0.031	0.0059	mg/Kg	1
Dibenzofuran	132-64-9	8270E	ND		0.15	0.058	mg/Kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	ND		0.15	0.058	mg/Kg	1
2,4-Dichlorophenol	120-83-2	8270E	ND		0.15	0.058	mg/Kg	1
Diethylphthalate	84-66-2	8270E	ND		0.15	0.058	mg/Kg	1
Dimethyl phthalate	131-11-3	8270E	ND		0.23	0.086	mg/Kg	1
2,4-Dimethylphenol	105-67-9	8270E	ND		0.15	0.058	mg/Kg	1
Di-n-butyl phthalate	84-74-2	8270E	ND		0.15	0.058	mg/Kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	ND		0.78	0.29	mg/Kg	1
2,4-Dinitrophenol	51-28-5	8270E	ND		0.78	0.29	mg/Kg	1
2,4-Dinitrotoluene	121-14-2	8270E	ND		0.31	0.12	mg/Kg	1
2,6-Dinitrotoluene	606-20-2	8270E	ND		0.31	0.12	mg/Kg	1
Di-n-octylphthalate	117-84-0	8270E	ND		0.15	0.058	mg/Kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	ND		0.78	0.29	mg/Kg	1
Fluoranthene	**206-44-0**	**8270E**	**2.3**		**0.031**	**0.0049**	**mg/Kg**	**1**
Fluorene	**86-73-7**	**8270E**	**0.046**		**0.031**	**0.0066**	**mg/Kg**	**1**
Hexachlorobenzene	118-74-1	8270E	ND		0.15	0.058	mg/Kg	1
Hexachlorobutadiene	87-68-3	8270E	ND		0.15	0.058	mg/Kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	ND		0.78	0.29	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-011**	
Description: **RI-SB-23 (4-8)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1805**	Project Name: **TAMP**	% Solids: **83.2**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	10	07/06/2022 1807	CMF	06/28/2022 1624	46376

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Hexachloroethane	67-72-1	8270E	ND		0.15	0.058	mg/Kg	1
Indeno(1,2,3-c,d)pyrene	**193-39-5**	**8270E**	**0.82**		**0.031**	**0.012**	**mg/Kg**	**1**
Isophorone	78-59-1	8270E	ND		0.15	0.058	mg/Kg	1
2-Methylnaphthalene	91-57-6	8270E	ND		0.031	0.012	mg/Kg	1
2-Methylphenol	95-48-7	8270E	ND		0.15	0.058	mg/Kg	1
3+4-Methylphenol	106-44-5	8270E	ND		0.31	0.12	mg/Kg	1
Naphthalene	**91-20-3**	**8270E**	**0.028**	**J**	**0.031**	**0.011**	**mg/Kg**	**1**
2-Nitroaniline	88-74-4	8270E	ND		0.31	0.12	mg/Kg	1
3-Nitroaniline	99-09-2	8270E	ND		0.31	0.12	mg/Kg	1
4-Nitroaniline	100-01-6	8270E	ND		0.31	0.12	mg/Kg	1
Nitrobenzene	98-95-3	8270E	ND		0.15	0.058	mg/Kg	1
2-Nitrophenol	88-75-5	8270E	ND		0.31	0.12	mg/Kg	1
4-Nitrophenol	100-02-7	8270E	ND		0.78	0.29	mg/Kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	ND		0.15	0.058	mg/Kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	ND		0.15	0.058	mg/Kg	1
Pentachlorophenol	87-86-5	8270E	ND		0.78	0.29	mg/Kg	1
Phenanthrene	**85-01-8**	**8270E**	**0.87**		**0.031**	**0.0084**	**mg/Kg**	**1**
Phenol	108-95-2	8270E	ND		0.15	0.058	mg/Kg	1
Pyrene	**129-00-0**	**8270E**	**2.8**		**0.031**	**0.0058**	**mg/Kg**	**1**
2,4,5-Trichlorophenol	95-95-4	8270E	ND		0.15	0.058	mg/Kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	ND		0.15	0.058	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		73	44-115
2-Fluorophenol		74	35-115
Nitrobenzene-d5		116	37-122
Phenol-d5		49	33-122
Terphenyl-d14		110	54-127
2,4,6-Tribromophenol		91	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-011**	
Description: **RI-SB-23 (4-8)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1805**	Project Name: **TAMP**	% Solids: **83.2**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/05/2022 2312	BPK	06/27/2022 1617	46274
2	3050B	6020B	10	07/06/2022 0152	BPK	06/27/2022 1617	46274

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**2.0**		**0.57**	**0.23**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**54**		**1.5**	**0.36**	**mg/kg**	**1**
Cadmium	7440-43-9	6020B	ND		0.15	0.029	mg/kg	1
Chromium	**7440-47-3**	**6020B**	**55**		**1.5**	**0.63**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**1.6**	**J**	**2.9**	**0.78**	**mg/kg**	**2**
Selenium	**7782-49-2**	**6020B**	**1.9**		**1.5**	**0.54**	**mg/kg**	**1**
Silver	7440-22-4	6020B	ND		0.29	0.069	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-012**	
Description: **DUP-SB-02**		Matrix: **Solid**	
Date Sampled: **06/23/2022**	Project Name: **TAMP**	% Solids: **70.8**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	10	07/09/2022 1507	CMF	07/06/2022 1500	47124

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acenaphthene	83-32-9	8270E	ND		0.037	0.011	mg/Kg	1
Acenaphthylene	208-96-8	8270E	ND		0.037	0.013	mg/Kg	1
Acetophenone	98-86-2	8270E	ND		0.18	0.068	mg/Kg	1
Anthracene	**120-12-7**	**8270E**	**0.032**	**J**	**0.037**	**0.0069**	**mg/Kg**	**1**
Atrazine	1912-24-9	8270E	ND		0.18	0.068	mg/Kg	1
Benzaldehyde	100-52-7	8270E	ND		0.18	0.068	mg/Kg	1
Benzo(a)anthracene	**56-55-3**	**8270E**	**0.072**		**0.037**	**0.0080**	**mg/Kg**	**1**
Benzo(a)pyrene	**50-32-8**	**8270E**	**0.063**		**0.037**	**0.0090**	**mg/Kg**	**1**
Benzo(b)fluoranthene	**205-99-2**	**8270E**	**0.099**		**0.037**	**0.0068**	**mg/Kg**	**1**
Benzo(g,h,i)perylene	**191-24-2**	**8270E**	**0.060**		**0.037**	**0.0088**	**mg/Kg**	**1**
Benzo(k)fluoranthene	**207-08-9**	**8270E**	**0.034**	**J**	**0.037**	**0.0065**	**mg/Kg**	**1**
1,1'-Biphenyl	92-52-4	8270E	ND		0.18	0.068	mg/Kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	ND		0.18	0.068	mg/Kg	1
Butyl benzyl phthalate	85-68-7	8270E	ND		0.18	0.068	mg/Kg	1
Caprolactam	105-60-2	8270E	ND		0.18	0.068	mg/Kg	1
Carbazole	86-74-8	8270E	ND		0.18	0.068	mg/Kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	ND		0.18	0.068	mg/Kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	ND		0.18	0.068	mg/Kg	1
4-Chloroaniline	106-47-8	8270E	ND		0.18	0.068	mg/Kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	ND		0.18	0.068	mg/Kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	ND		0.18	0.068	mg/Kg	1
2-Chloronaphthalene	91-58-7	8270E	ND		0.18	0.068	mg/Kg	1
2-Chlorophenol	95-57-8	8270E	ND		0.18	0.068	mg/Kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	ND		0.18	0.068	mg/Kg	1
Chrysene	**218-01-9**	**8270E**	**0.085**		**0.037**	**0.0061**	**mg/Kg**	**1**
Dibenzo(a,h)anthracene	53-70-3	8270E	ND		0.037	0.0069	mg/Kg	1
Dibenzofuran	132-64-9	8270E	ND		0.18	0.068	mg/Kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	ND		0.18	0.068	mg/Kg	1
2,4-Dichlorophenol	120-83-2	8270E	ND		0.18	0.068	mg/Kg	1
Diethylphthalate	84-66-2	8270E	ND		0.18	0.068	mg/Kg	1
Dimethyl phthalate	131-11-3	8270E	ND		0.27	0.10	mg/Kg	1
2,4-Dimethylphenol	105-67-9	8270E	ND		0.18	0.068	mg/Kg	1
Di-n-butyl phthalate	84-74-2	8270E	ND		0.18	0.068	mg/Kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	ND		0.91	0.34	mg/Kg	1
2,4-Dinitrophenol	51-28-5	8270E	ND		0.91	0.34	mg/Kg	1
2,4-Dinitrotoluene	121-14-2	8270E	ND		0.37	0.14	mg/Kg	1
2,6-Dinitrotoluene	606-20-2	8270E	ND		0.37	0.14	mg/Kg	1
Di-n-octylphthalate	117-84-0	8270E	ND		0.18	0.068	mg/Kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	ND		0.91	0.34	mg/Kg	1
Fluoranthene	**206-44-0**	**8270E**	**0.13**		**0.037**	**0.0057**	**mg/Kg**	**1**
Fluorene	**86-73-7**	**8270E**	**0.022**	**J**	**0.037**	**0.0077**	**mg/Kg**	**1**
Hexachlorobenzene	118-74-1	8270E	ND		0.18	0.068	mg/Kg	1
Hexachlorobutadiene	87-68-3	8270E	ND		0.18	0.068	mg/Kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	ND		0.91	0.34	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-012**	
Description: **DUP-SB-02**		Matrix: **Solid**	
Date Sampled: **06/23/2022**	Project Name: **TAMP**	% Solids: **70.8**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	10	07/09/2022 1507	CMF	07/06/2022 1500	47124

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Hexachloroethane	67-72-1	8270E	ND		0.18	0.068	mg/Kg	1
Indeno(1,2,3-c,d)pyrene	**193-39-5**	**8270E**	**0.051**		**0.037**	**0.014**	**mg/Kg**	**1**
Isophorone	78-59-1	8270E	ND		0.18	0.068	mg/Kg	1
2-Methylnaphthalene	91-57-6	8270E	ND		0.037	0.013	mg/Kg	1
2-Methylphenol	95-48-7	8270E	ND		0.18	0.068	mg/Kg	1
3+4-Methylphenol	106-44-5	8270E	ND		0.37	0.14	mg/Kg	1
Naphthalene	91-20-3	8270E	ND		0.037	0.013	mg/Kg	1
2-Nitroaniline	88-74-4	8270E	ND		0.37	0.14	mg/Kg	1
3-Nitroaniline	99-09-2	8270E	ND		0.37	0.14	mg/Kg	1
4-Nitroaniline	100-01-6	8270E	ND		0.37	0.14	mg/Kg	1
Nitrobenzene	98-95-3	8270E	ND		0.18	0.068	mg/Kg	1
2-Nitrophenol	88-75-5	8270E	ND		0.37	0.14	mg/Kg	1
4-Nitrophenol	100-02-7	8270E	ND		0.91	0.34	mg/Kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	ND		0.18	0.068	mg/Kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	ND		0.18	0.068	mg/Kg	1
Pentachlorophenol	87-86-5	8270E	ND		0.91	0.34	mg/Kg	1
Phenanthrene	**85-01-8**	**8270E**	**0.14**		**0.037**	**0.0098**	**mg/Kg**	**1**
Phenol	108-95-2	8270E	ND		0.18	0.068	mg/Kg	1
Pyrene	**129-00-0**	**8270E**	**0.19**		**0.037**	**0.0068**	**mg/Kg**	**1**
2,4,5-Trichlorophenol	95-95-4	8270E	ND		0.18	0.068	mg/Kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	ND		0.18	0.068	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		66	44-115
2-Fluorophenol		69	35-115
Nitrobenzene-d5		112	37-122
Phenol-d5		48	33-122
Terphenyl-d14		77	54-127
2,4,6-Tribromophenol		108	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-012**	
Description: **DUP-SB-02**		Matrix: **Solid**	
Date Sampled: **06/23/2022**	Project Name: **TAMP**	% Solids: **70.8**	**06/29/2022 2306**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/05/2022 2319	BPK	06/27/2022 1617	46274
2	3050B	6020B	10	07/06/2022 0159	BPK	06/27/2022 1617	46274

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**1.9**		**0.68**	**0.27**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**120**		**18**	**4.2**	**mg/kg**	**2**
Cadmium	**7440-43-9**	**6020B**	**0.12**	**J**	**0.18**	**0.034**	**mg/kg**	**1**
Chromium	**7440-47-3**	**6020B**	**25**		**1.8**	**0.75**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**30**		**3.4**	**0.93**	**mg/kg**	**2**
Selenium	**7782-49-2**	**6020B**	**3.8**		**1.8**	**0.65**	**mg/kg**	**1**
Silver	7440-22-4	6020B	ND		0.34	0.082	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-013**	
Description: **DUP-SB-03**		Matrix: **Solid**	
Date Sampled: **06/23/2022**	Project Name: **TAMP**	% Solids: **79.5**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	10	07/09/2022 1238	CMF	07/06/2022 1500	47124

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acenaphthene	83-32-9	8270E	ND		0.033	0.010	mg/Kg	1
Acenaphthylene	**208-96-8**	**8270E**	**0.029**	**J**	**0.033**	**0.012**	**mg/Kg**	**1**
Acetophenone	98-86-2	8270E	ND		0.16	0.062	mg/Kg	1
Anthracene	**120-12-7**	**8270E**	**0.018**	**J**	**0.033**	**0.0063**	**mg/Kg**	**1**
Atrazine	1912-24-9	8270E	ND		0.16	0.062	mg/Kg	1
Benzaldehyde	100-52-7	8270E	ND		0.16	0.062	mg/Kg	1
Benzo(a)anthracene	**56-55-3**	**8270E**	**0.037**		**0.033**	**0.0073**	**mg/Kg**	**1**
Benzo(a)pyrene	**50-32-8**	**8270E**	**0.037**		**0.033**	**0.0082**	**mg/Kg**	**1**
Benzo(b)fluoranthene	205-99-2	8270E	ND		0.033	0.0062	mg/Kg	1
Benzo(g,h,i)perylene	**191-24-2**	**8270E**	**0.037**		**0.033**	**0.0081**	**mg/Kg**	**1**
Benzo(k)fluoranthene	207-08-9	8270E	ND		0.033	0.0060	mg/Kg	1
1,1'-Biphenyl	92-52-4	8270E	ND		0.16	0.062	mg/Kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	ND		0.16	0.062	mg/Kg	1
Butyl benzyl phthalate	85-68-7	8270E	ND		0.16	0.062	mg/Kg	1
Caprolactam	105-60-2	8270E	ND		0.16	0.062	mg/Kg	1
Carbazole	86-74-8	8270E	ND		0.16	0.062	mg/Kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	ND		0.16	0.062	mg/Kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	ND		0.16	0.062	mg/Kg	1
4-Chloroaniline	106-47-8	8270E	ND		0.16	0.062	mg/Kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	ND		0.16	0.062	mg/Kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	ND		0.16	0.062	mg/Kg	1
2-Chloronaphthalene	91-58-7	8270E	ND		0.16	0.062	mg/Kg	1
2-Chlorophenol	95-57-8	8270E	ND		0.16	0.062	mg/Kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	ND		0.16	0.062	mg/Kg	1
Chrysene	**218-01-9**	**8270E**	**0.025**	**J**	**0.033**	**0.0056**	**mg/Kg**	**1**
Dibenzo(a,h)anthracene	53-70-3	8270E	ND		0.033	0.0063	mg/Kg	1
Dibenzofuran	132-64-9	8270E	ND		0.16	0.062	mg/Kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	ND		0.16	0.062	mg/Kg	1
2,4-Dichlorophenol	120-83-2	8270E	ND		0.16	0.062	mg/Kg	1
Diethylphthalate	84-66-2	8270E	ND		0.16	0.062	mg/Kg	1
Dimethyl phthalate	131-11-3	8270E	ND		0.25	0.092	mg/Kg	1
2,4-Dimethylphenol	105-67-9	8270E	ND		0.16	0.062	mg/Kg	1
Di-n-butyl phthalate	84-74-2	8270E	ND		0.16	0.062	mg/Kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	ND		0.83	0.31	mg/Kg	1
2,4-Dinitrophenol	51-28-5	8270E	ND		0.83	0.31	mg/Kg	1
2,4-Dinitrotoluene	121-14-2	8270E	ND		0.33	0.12	mg/Kg	1
2,6-Dinitrotoluene	606-20-2	8270E	ND		0.33	0.12	mg/Kg	1
Di-n-octylphthalate	117-84-0	8270E	ND		0.16	0.062	mg/Kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	ND		0.83	0.31	mg/Kg	1
Fluoranthene	**206-44-0**	**8270E**	**0.033**		**0.033**	**0.0052**	**mg/Kg**	**1**
Fluorene	86-73-7	8270E	ND		0.033	0.0071	mg/Kg	1
Hexachlorobenzene	118-74-1	8270E	ND		0.16	0.062	mg/Kg	1
Hexachlorobutadiene	87-68-3	8270E	ND		0.16	0.062	mg/Kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	ND		0.83	0.31	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-013**	
Description: **DUP-SB-03**		Matrix: **Solid**	
Date Sampled: **06/23/2022**	Project Name: **TAMP**	% Solids: **79.5**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	10	07/09/2022 1238	CMF	07/06/2022 1500	47124

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Hexachloroethane	67-72-1	8270E	ND		0.16	0.062	mg/Kg	1
Indeno(1,2,3-c,d)pyrene	**193-39-5**	**8270E**	**0.023**	**J**	**0.033**	**0.012**	**mg/Kg**	**1**
Isophorone	78-59-1	8270E	ND		0.16	0.062	mg/Kg	1
2-Methylnaphthalene	91-57-6	8270E	ND		0.033	0.012	mg/Kg	1
2-Methylphenol	95-48-7	8270E	ND		0.16	0.062	mg/Kg	1
3+4-Methylphenol	106-44-5	8270E	ND		0.33	0.12	mg/Kg	1
Naphthalene	91-20-3	8270E	ND		0.033	0.012	mg/Kg	1
2-Nitroaniline	88-74-4	8270E	ND		0.33	0.12	mg/Kg	1
3-Nitroaniline	99-09-2	8270E	ND		0.33	0.12	mg/Kg	1
4-Nitroaniline	100-01-6	8270E	ND		0.33	0.12	mg/Kg	1
Nitrobenzene	98-95-3	8270E	ND		0.16	0.062	mg/Kg	1
2-Nitrophenol	88-75-5	8270E	ND		0.33	0.12	mg/Kg	1
4-Nitrophenol	100-02-7	8270E	ND		0.83	0.31	mg/Kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	ND		0.16	0.062	mg/Kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	ND		0.16	0.062	mg/Kg	1
Pentachlorophenol	87-86-5	8270E	ND		0.83	0.31	mg/Kg	1
Phenanthrene	**85-01-8**	**8270E**	**0.041**		**0.033**	**0.0089**	**mg/Kg**	**1**
Phenol	108-95-2	8270E	ND		0.16	0.062	mg/Kg	1
Pyrene	**129-00-0**	**8270E**	**0.097**		**0.033**	**0.0062**	**mg/Kg**	**1**
2,4,5-Trichlorophenol	95-95-4	8270E	ND		0.16	0.062	mg/Kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	ND		0.16	0.062	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		52	44-115
2-Fluorophenol		53	35-115
Nitrobenzene-d5		107	37-122
Phenol-d5		47	33-122
Terphenyl-d14		92	54-127
2,4,6-Tribromophenol		85	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF24012-013**	
Description: **DUP-SB-03**		Matrix: **Solid**	
Date Sampled: **06/23/2022**	Project Name: **TAMP**	% Solids: **79.5**	**06/28/2022 2303**
Date Received: **06/24/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/05/2022 2327	BPK	06/27/2022 1617	46274

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**2.2**		**0.57**	**0.23**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**78**		**1.5**	**0.35**	**mg/kg**	**1**
Cadmium	**7440-43-9**	**6020B**	**0.034**	**J**	**0.15**	**0.029**	**mg/kg**	**1**
Chromium	**7440-47-3**	**6020B**	**34**		**1.5**	**0.63**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**28**		**0.29**	**0.078**	**mg/kg**	**1**
Selenium	**7782-49-2**	**6020B**	**1.3**	**J**	**1.5**	**0.54**	**mg/kg**	**1**
Silver	7440-22-4	6020B	ND		0.29	0.068	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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QC Summary

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ46376-001
Batch: 46376
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 06/28/2022 1624

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acenaphthene	ND		1	0.0027	0.00083	mg/kg	07/06/2022 1652
Acenaphthylene	ND		1	0.0027	0.00095	mg/kg	07/06/2022 1652
Acetophenone	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
Anthracene	ND		1	0.0027	0.00051	mg/kg	07/06/2022 1652
Atrazine	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
Benzaldehyde	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
Benzo(a)anthracene	ND		1	0.0027	0.00059	mg/kg	07/06/2022 1652
Benzo(a)pyrene	ND		1	0.0027	0.00066	mg/kg	07/06/2022 1652
Benzo(b)fluoranthene	ND		1	0.0027	0.00050	mg/kg	07/06/2022 1652
Benzo(g,h,i)perylene	ND		1	0.0027	0.00065	mg/kg	07/06/2022 1652
Benzo(k)fluoranthene	ND		1	0.0027	0.00048	mg/kg	07/06/2022 1652
1,1'-Biphenyl	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
4-Bromophenyl phenyl ether	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
Butyl benzyl phthalate	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
Caprolactam	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
Carbazole	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
bis (2-Chloro-1-methylethyl) ether	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
4-Chloro-3-methyl phenol	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
4-Chloroaniline	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
bis(2-Chloroethoxy)methane	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
bis(2-Chloroethyl)ether	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
2-Chloronaphthalene	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
2-Chlorophenol	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
4-Chlorophenyl phenyl ether	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
Chrysene	ND		1	0.0027	0.00045	mg/kg	07/06/2022 1652
Dibenzo(a,h)anthracene	ND		1	0.0027	0.00051	mg/kg	07/06/2022 1652
Dibenzofuran	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
3,3'-Dichlorobenzidine	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
2,4-Dichlorophenol	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
Diethylphthalate	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
Dimethyl phthalate	ND		1	0.020	0.0074	mg/kg	07/06/2022 1652
2,4-Dimethylphenol	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
Di-n-butyl phthalate	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
4,6-Dinitro-2-methylphenol	ND		1	0.067	0.025	mg/kg	07/06/2022 1652
2,4-Dinitrophenol	ND		1	0.067	0.025	mg/kg	07/06/2022 1652
2,4-Dinitrotoluene	ND		1	0.027	0.010	mg/kg	07/06/2022 1652
2,6-Dinitrotoluene	ND		1	0.027	0.010	mg/kg	07/06/2022 1652
Di-n-octylphthalate	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
bis(2-Ethylhexyl)phthalate	ND		1	0.067	0.025	mg/kg	07/06/2022 1652
Fluoranthene	ND		1	0.0027	0.00042	mg/kg	07/06/2022 1652
Fluorene	ND		1	0.0027	0.00057	mg/kg	07/06/2022 1652
Hexachlorobenzene	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
Hexachlorobutadiene	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
Hexachlorocyclopentadiene	ND		1	0.067	0.025	mg/kg	07/06/2022 1652

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ46376-001
Batch: 46376
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 06/28/2022 1624

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Hexachloroethane	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
Indeno(1,2,3-c,d)pyrene	ND		1	0.0027	0.0010	mg/kg	07/06/2022 1652
Isophorone	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
2-Methylnaphthalene	ND		1	0.0027	0.00099	mg/kg	07/06/2022 1652
2-Methylphenol	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
3+4-Methylphenol	ND		1	0.027	0.010	mg/kg	07/06/2022 1652
Naphthalene	ND		1	0.0027	0.00097	mg/kg	07/06/2022 1652
2-Nitroaniline	ND		1	0.027	0.010	mg/kg	07/06/2022 1652
3-Nitroaniline	ND		1	0.027	0.010	mg/kg	07/06/2022 1652
4-Nitroaniline	ND		1	0.027	0.010	mg/kg	07/06/2022 1652
Nitrobenzene	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
2-Nitrophenol	ND		1	0.027	0.010	mg/kg	07/06/2022 1652
4-Nitrophenol	ND		1	0.067	0.025	mg/kg	07/06/2022 1652
N-Nitrosodi-n-propylamine	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
N-Nitrosodiphenylamine (Diphenylamine)	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
Pentachlorophenol	ND		1	0.067	0.025	mg/kg	07/06/2022 1652
Phenanthrene	ND		1	0.0027	0.00072	mg/kg	07/06/2022 1652
Phenol	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
Pyrene	ND		1	0.0027	0.00050	mg/kg	07/06/2022 1652
2,4,5-Trichlorophenol	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652
2,4,6-Trichlorophenol	ND		1	0.013	0.0050	mg/kg	07/06/2022 1652

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		75	44-115
2-Fluorophenol		85	35-115
Nitrobenzene-d5		51	37-122
Phenol-d5		73	33-122
Terphenyl-d14		112	54-127
2,4,6-Tribromophenol		65	39-132

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46376-002
Batch: 46376
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 06/28/2022 1624

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acenaphthene	0.13	0.11		1	86	40-123	07/06/2022 1218
Acenaphthylene	0.13	0.12		1	87	32-132	07/06/2022 1218
Acetophenone	0.13	0.11		1	82	33-115	07/06/2022 1218
Anthracene	0.13	0.12		1	94	47-123	07/06/2022 1218
Atrazine	0.13	0.13		1	98	47-127	07/06/2022 1218
Benzaldehyde	0.13	0.11		1	85	10-110	07/06/2022 1218
Benzo(a)anthracene	0.13	0.12		1	93	49-126	07/06/2022 1218
Benzo(a)pyrene	0.13	0.13		1	96	45-129	07/06/2022 1218
Benzo(b)fluoranthene	0.13	0.13		1	96	45-132	07/06/2022 1218
Benzo(g,h,i)perylene	0.13	0.13		1	99	43-134	07/06/2022 1218
Benzo(k)fluoranthene	0.13	0.12		1	92	47-132	07/06/2022 1218
1,1'-Biphenyl	0.13	0.11		1	81	40-117	07/06/2022 1218
4-Bromophenyl phenyl ether	0.13	0.12		1	89	46-124	07/06/2022 1218
Butyl benzyl phthalate	0.13	0.15		1	109	48-132	07/06/2022 1218
Caprolactam	0.13	0.14		1	104	46-117	07/06/2022 1218
Carbazole	0.13	0.12		1	93	50-123	07/06/2022 1218
bis (2-Chloro-1-methylethyl) ether	0.13	0.10		1	79	33-131	07/06/2022 1218
4-Chloro-3-methyl phenol	0.13	0.12		1	94	45-122	07/06/2022 1218
4-Chloroaniline	0.13	0.046		1	34	17-106	07/06/2022 1218
bis(2-Chloroethoxy)methane	0.13	0.11		1	82	36-121	07/06/2022 1218
bis(2-Chloroethyl)ether	0.13	0.095		1	72	31-120	07/06/2022 1218
2-Chloronaphthalene	0.13	0.11		1	80	41-114	07/06/2022 1218
2-Chlorophenol	0.13	0.11		1	84	34-121	07/06/2022 1218
4-Chlorophenyl phenyl ether	0.13	0.11		1	84	45-121	07/06/2022 1218
Chrysene	0.13	0.13		1	95	50-124	07/06/2022 1218
Dibenzo(a,h)anthracene	0.13	0.13		1	97	45-134	07/06/2022 1218
Dibenzofuran	0.13	0.10		1	79	44-120	07/06/2022 1218
3,3'-Dichlorobenzidine	0.13	0.12		1	90	22-121	07/06/2022 1218
2,4-Dichlorophenol	0.13	0.10		1	76	40-122	07/06/2022 1218
Diethylphthalate	0.13	0.13		1	95	50-124	07/06/2022 1218
Dimethyl phthalate	0.13	0.13		1	94	48-124	07/06/2022 1218
2,4-Dimethylphenol	0.13	0.11		1	82	30-127	07/06/2022 1218
Di-n-butyl phthalate	0.13	0.13		1	98	51-128	07/06/2022 1218
4,6-Dinitro-2-methylphenol	0.13	0.098		1	74	29-132	07/06/2022 1218
2,4-Dinitrophenol	0.27	0.12		1	47	10-113	07/06/2022 1218
2,4-Dinitrotoluene	0.13	0.11		1	84	48-126	07/06/2022 1218
2,6-Dinitrotoluene	0.13	0.11		1	84	46-124	07/06/2022 1218
Di-n-octylphthalate	0.13	0.15		1	111	45-140	07/06/2022 1218
bis(2-Ethylhexyl)phthalate	0.13	0.16		1	119	51-133	07/06/2022 1218
Fluoranthene	0.13	0.12		1	89	50-127	07/06/2022 1218
Fluorene	0.13	0.12		1	88	43-125	07/06/2022 1218
Hexachlorobenzene	0.13	0.11		1	83	45-122	07/06/2022 1218
Hexachlorobutadiene	0.13	0.088		1	66	32-123	07/06/2022 1218
Hexachlorocyclopentadiene	0.67	0.44		1	66	18-121	07/06/2022 1218

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46376-002
Batch: 46376
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 06/28/2022 1624

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Hexachloroethane	0.13	0.11		1	85	28-117	07/06/2022 1218
Indeno(1,2,3-c,d)pyrene	0.13	0.13		1	97	45-133	07/06/2022 1218
Isophorone	0.13	0.092		1	69	30-122	07/06/2022 1218
2-Methylnaphthalene	0.13	0.10		1	79	38-122	07/06/2022 1218
2-Methylphenol	0.13	0.14		1	103	32-122	07/06/2022 1218
3+4-Methylphenol	0.13	0.13		1	101	34-119	07/06/2022 1218
Naphthalene	0.13	0.10		1	79	35-123	07/06/2022 1218
2-Nitroaniline	0.13	0.13		1	101	44-127	07/06/2022 1218
3-Nitroaniline	0.13	0.098		1	73	33-119	07/06/2022 1218
4-Nitroaniline	0.13	0.13		1	96	50-150	07/06/2022 1218
Nitrobenzene	0.13	0.077		1	58	34-122	07/06/2022 1218
2-Nitrophenol	0.13	0.098		1	73	36-123	07/06/2022 1218
4-Nitrophenol	0.27	0.19		1	72	30-132	07/06/2022 1218
N-Nitrosodi-n-propylamine	0.13	0.11		1	86	36-120	07/06/2022 1218
N-Nitrosodiphenylamine (Diphenylamine)	0.13	0.13		1	97	38-127	07/06/2022 1218
Pentachlorophenol	0.27	0.17		1	64	25-133	07/06/2022 1218
Phenanthrene	0.13	0.13		1	95	50-121	07/06/2022 1218
Phenol	0.13	0.12		1	92	34-121	07/06/2022 1218
Pyrene	0.13	0.13		1	100	47-127	07/06/2022 1218
2,4,5-Trichlorophenol	0.13	0.12		1	91	41-124	07/06/2022 1218
2,4,6-Trichlorophenol	0.13	0.11		1	81	39-126	07/06/2022 1218

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		73	44-115
2-Fluorophenol		80	35-115
Nitrobenzene-d5		52	37-122
Phenol-d5		76	33-122
Terphenyl-d14		98	54-127
2,4,6-Tribromophenol		74	39-132

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ47124-001
Batch: 47124
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 07/06/2022 1500

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acenaphthene	ND		1	0.0027	0.00083	mg/kg	07/09/2022 1035
Acenaphthylene	ND		1	0.0027	0.00095	mg/kg	07/09/2022 1035
Acetophenone	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
Anthracene	ND		1	0.0027	0.00051	mg/kg	07/09/2022 1035
Atrazine	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
Benzaldehyde	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
Benzo(a)anthracene	ND		1	0.0027	0.00059	mg/kg	07/09/2022 1035
Benzo(a)pyrene	ND		1	0.0027	0.00066	mg/kg	07/09/2022 1035
Benzo(b)fluoranthene	ND		1	0.0027	0.00050	mg/kg	07/09/2022 1035
Benzo(g,h,i)perylene	ND		1	0.0027	0.00065	mg/kg	07/09/2022 1035
Benzo(k)fluoranthene	ND		1	0.0027	0.00048	mg/kg	07/09/2022 1035
1,1'-Biphenyl	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
4-Bromophenyl phenyl ether	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
Butyl benzyl phthalate	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
Caprolactam	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
Carbazole	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
bis (2-Chloro-1-methylethyl) ether	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
4-Chloro-3-methyl phenol	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
4-Chloroaniline	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
bis(2-Chloroethoxy)methane	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
bis(2-Chloroethyl)ether	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
2-Chloronaphthalene	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
2-Chlorophenol	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
4-Chlorophenyl phenyl ether	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
Chrysene	ND		1	0.0027	0.00045	mg/kg	07/09/2022 1035
Dibenzo(a,h)anthracene	ND		1	0.0027	0.00051	mg/kg	07/09/2022 1035
Dibenzofuran	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
3,3'-Dichlorobenzidine	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
2,4-Dichlorophenol	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
Diethylphthalate	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
Dimethyl phthalate	ND		1	0.020	0.0074	mg/kg	07/09/2022 1035
2,4-Dimethylphenol	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
Di-n-butyl phthalate	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
4,6-Dinitro-2-methylphenol	ND		1	0.067	0.025	mg/kg	07/09/2022 1035
2,4-Dinitrophenol	ND		1	0.067	0.025	mg/kg	07/09/2022 1035
2,4-Dinitrotoluene	ND		1	0.027	0.010	mg/kg	07/09/2022 1035
2,6-Dinitrotoluene	ND		1	0.027	0.010	mg/kg	07/09/2022 1035
Di-n-octylphthalate	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
bis(2-Ethylhexyl)phthalate	ND		1	0.067	0.025	mg/kg	07/09/2022 1035
Fluoranthene	ND		1	0.0027	0.00042	mg/kg	07/09/2022 1035
Fluorene	ND		1	0.0027	0.00057	mg/kg	07/09/2022 1035
Hexachlorobenzene	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
Hexachlorobutadiene	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
Hexachlorocyclopentadiene	ND		1	0.067	0.025	mg/kg	07/09/2022 1035

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ47124-001
Batch: 47124
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 07/06/2022 1500

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Hexachloroethane	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
Indeno(1,2,3-c,d)pyrene	ND		1	0.0027	0.0010	mg/kg	07/09/2022 1035
Isophorone	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
2-Methylnaphthalene	ND		1	0.0027	0.00099	mg/kg	07/09/2022 1035
2-Methylphenol	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
3+4-Methylphenol	ND		1	0.027	0.010	mg/kg	07/09/2022 1035
Naphthalene	ND		1	0.0027	0.00097	mg/kg	07/09/2022 1035
2-Nitroaniline	ND		1	0.027	0.010	mg/kg	07/09/2022 1035
3-Nitroaniline	ND		1	0.027	0.010	mg/kg	07/09/2022 1035
4-Nitroaniline	ND		1	0.027	0.010	mg/kg	07/09/2022 1035
Nitrobenzene	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
2-Nitrophenol	ND		1	0.027	0.010	mg/kg	07/09/2022 1035
4-Nitrophenol	ND		1	0.067	0.025	mg/kg	07/09/2022 1035
N-Nitrosodi-n-propylamine	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
N-Nitrosodiphenylamine (Diphenylamine)	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
Pentachlorophenol	ND		1	0.067	0.025	mg/kg	07/09/2022 1035
Phenanthrene	ND		1	0.0027	0.00072	mg/kg	07/09/2022 1035
Phenol	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
Pyrene	ND		1	0.0027	0.00050	mg/kg	07/09/2022 1035
2,4,5-Trichlorophenol	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035
2,4,6-Trichlorophenol	ND		1	0.013	0.0050	mg/kg	07/09/2022 1035

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		74	44-115
2-Fluorophenol		97	35-115
Nitrobenzene-d5		56	37-122
Phenol-d5		83	33-122
Terphenyl-d14		112	54-127
2,4,6-Tribromophenol		60	39-132

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ47124-002
Batch: 47124
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 07/06/2022 1500

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acenaphthene	0.13	0.10		1	79	40-123	07/09/2022 1100
Acenaphthylene	0.13	0.11		1	79	32-132	07/09/2022 1100
Acetophenone	0.13	0.11		1	80	33-115	07/09/2022 1100
Anthracene	0.13	0.12		1	90	47-123	07/09/2022 1100
Atrazine	0.13	0.11		1	85	47-127	07/09/2022 1100
Benzaldehyde	0.13	0.096		1	72	10-110	07/09/2022 1100
Benzo(a)anthracene	0.13	0.12		1	88	49-126	07/09/2022 1100
Benzo(a)pyrene	0.13	0.12		1	91	45-129	07/09/2022 1100
Benzo(b)fluoranthene	0.13	0.12		1	91	45-132	07/09/2022 1100
Benzo(g,h,i)perylene	0.13	0.12		1	93	43-134	07/09/2022 1100
Benzo(k)fluoranthene	0.13	0.12		1	90	47-132	07/09/2022 1100
1,1'-Biphenyl	0.13	0.099		1	74	40-117	07/09/2022 1100
4-Bromophenyl phenyl ether	0.13	0.11		1	81	46-124	07/09/2022 1100
Butyl benzyl phthalate	0.13	0.16		1	121	48-132	07/09/2022 1100
Caprolactam	0.13	0.14		1	104	46-117	07/09/2022 1100
Carbazole	0.13	0.12		1	89	50-123	07/09/2022 1100
bis (2-Chloro-1-methylethyl) ether	0.13	0.094		1	71	33-131	07/09/2022 1100
4-Chloro-3-methyl phenol	0.13	0.13		1	100	45-122	07/09/2022 1100
4-Chloroaniline	0.13	0.025		1	19	17-106	07/09/2022 1100
bis(2-Chloroethoxy)methane	0.13	0.10		1	77	36-121	07/09/2022 1100
bis(2-Chloroethyl)ether	0.13	0.086		1	64	31-120	07/09/2022 1100
2-Chloronaphthalene	0.13	0.097		1	73	41-114	07/09/2022 1100
2-Chlorophenol	0.13	0.10		1	77	34-121	07/09/2022 1100
4-Chlorophenyl phenyl ether	0.13	0.10		1	75	45-121	07/09/2022 1100
Chrysene	0.13	0.12		1	90	50-124	07/09/2022 1100
Dibenzo(a,h)anthracene	0.13	0.12		1	91	45-134	07/09/2022 1100
Dibenzofuran	0.13	0.095		1	72	44-120	07/09/2022 1100
3,3'-Dichlorobenzidine	0.13	0.097		1	73	22-121	07/09/2022 1100
2,4-Dichlorophenol	0.13	0.096		1	72	40-122	07/09/2022 1100
Diethylphthalate	0.13	0.12		1	89	50-124	07/09/2022 1100
Dimethyl phthalate	0.13	0.12		1	87	48-124	07/09/2022 1100
2,4-Dimethylphenol	0.13	0.13		1	95	30-127	07/09/2022 1100
Di-n-butyl phthalate	0.13	0.13		1	95	51-128	07/09/2022 1100
4,6-Dinitro-2-methylphenol	0.13	0.10		1	77	29-132	07/09/2022 1100
2,4-Dinitrophenol	0.27	0.17		1	63	10-113	07/09/2022 1100
2,4-Dinitrotoluene	0.13	0.10		1	78	48-126	07/09/2022 1100
2,6-Dinitrotoluene	0.13	0.11		1	80	46-124	07/09/2022 1100
Di-n-octylphthalate	0.13	0.15		1	116	45-140	07/09/2022 1100
bis(2-Ethylhexyl)phthalate	0.13	0.16		1	118	51-133	07/09/2022 1100
Fluoranthene	0.13	0.11		1	81	50-127	07/09/2022 1100
Fluorene	0.13	0.11		1	80	43-125	07/09/2022 1100
Hexachlorobenzene	0.13	0.098		1	73	45-122	07/09/2022 1100
Hexachlorobutadiene	0.13	0.081		1	61	32-123	07/09/2022 1100
Hexachlorocyclopentadiene	0.67	0.35		1	53	18-121	07/09/2022 1100

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ47124-002
Batch: 47124
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 07/06/2022 1500

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Hexachloroethane	0.13	0.12		1	87	28-117	07/09/2022 1100
Indeno(1,2,3-c,d)pyrene	0.13	0.12		1	91	45-133	07/09/2022 1100
Isophorone	0.13	0.087		1	65	30-122	07/09/2022 1100
2-Methylnaphthalene	0.13	0.096		1	72	38-122	07/09/2022 1100
2-Methylphenol	0.13	0.14		1	107	32-122	07/09/2022 1100
3+4-Methylphenol	0.13	0.13		1	100	34-119	07/09/2022 1100
Naphthalene	0.13	0.094		1	71	35-123	07/09/2022 1100
2-Nitroaniline	0.13	0.12		1	90	44-127	07/09/2022 1100
3-Nitroaniline	0.13	0.074		1	56	33-119	07/09/2022 1100
4-Nitroaniline	0.13	0.091		1	68	50-150	07/09/2022 1100
Nitrobenzene	0.13	0.068		1	51	34-122	07/09/2022 1100
2-Nitrophenol	0.13	0.088		1	66	36-123	07/09/2022 1100
4-Nitrophenol	0.27	0.20		1	74	30-132	07/09/2022 1100
N-Nitrosodi-n-propylamine	0.13	0.097		1	73	36-120	07/09/2022 1100
N-Nitrosodiphenylamine (Diphenylamine)	0.13	0.12		1	92	38-127	07/09/2022 1100
Pentachlorophenol	0.27	0.19		1	71	25-133	07/09/2022 1100
Phenanthrene	0.13	0.12		1	90	50-121	07/09/2022 1100
Phenol	0.13	0.12		1	91	34-121	07/09/2022 1100
Pyrene	0.13	0.13		1	97	47-127	07/09/2022 1100
2,4,5-Trichlorophenol	0.13	0.11		1	82	41-124	07/09/2022 1100
2,4,6-Trichlorophenol	0.13	0.10		1	76	39-126	07/09/2022 1100

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		71	44-115
2-Fluorophenol		87	35-115
Nitrobenzene-d5		53	37-122
Phenol-d5		78	33-122
Terphenyl-d14		89	54-127
2,4,6-Tribromophenol		65	39-132

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - MB

Sample ID: XQ46274-001
Batch: 46274
Analytical Method: 6020B

Matrix: Solid
Prep Method: 3050B
Prep Date: 06/27/2022 1617

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Arsenic	ND		1	0.50	0.20	mg/kg	07/05/2022 2032
Barium	ND		1	1.3	0.31	mg/kg	07/05/2022 2032
Cadmium	ND		1	0.13	0.025	mg/kg	07/05/2022 2032
Chromium	ND		1	1.3	0.55	mg/kg	07/05/2022 2032
Lead	ND		1	0.25	0.068	mg/kg	07/05/2022 2032
Selenium	ND		1	1.3	0.47	mg/kg	07/05/2022 2032
Silver	ND		1	0.25	0.060	mg/kg	07/05/2022 2032

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - LCS

Sample ID: XQ46274-002
Batch: 46274
Analytical Method: 6020B

Matrix: Solid
Prep Method: 3050B
Prep Date: 06/27/2022 1617

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Arsenic	50	51		1	101	82-118	07/05/2022 2040
Barium	50	52		1	104	86-116	07/05/2022 2040
Cadmium	50	52		1	105	84-116	07/05/2022 2040
Chromium	50	54		1	108	83-119	07/05/2022 2040
Lead	50	55		1	109	84-118	07/05/2022 2040
Selenium	50	44		1	88	80-119	07/05/2022 2040
Silver	50	56		2	112	83-118	07/05/2022 2047

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - MS

Sample ID: XF24012-001MS
Batch: 46274
Analytical Method: 6020B

Matrix: Solid
Prep Method: 3050B
Prep Date: 06/27/2022 1617

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Arsenic	5.6	57	53		1	83	82-118	07/05/2022 2118
Barium	56	57	110		1	96	86-116	07/05/2022 2118
Cadmium	ND	57	55		1	96	84-116	07/05/2022 2118
Chromium	40	57	86	N	1	81	83-119	07/05/2022 2118
Lead	30	57	56	N	1	46	84-118	07/05/2022 2118
Selenium	2.1	57	46	N	1	78	80-119	07/05/2022 2118
Silver	ND	57	60		1	105	83-118	07/05/2022 2118

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - MSD

Sample ID: XF24012-001MD
Batch: 46274
Analytical Method: 6020B

Matrix: Solid
Prep Method: 3050B
Prep Date: 06/27/2022 1617

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Arsenic	5.6	61	62		1	92	16	82-118	20	07/05/2022 2125
Barium	56	61	150	N,+	1	154	31	86-116	20	07/05/2022 2125
Cadmium	ND	61	60		1	98	9.0	84-116	20	07/05/2022 2125
Chromium	40	61	110	+	1	110	22	83-119	20	07/05/2022 2125
Lead	30	61	70	N,+	1	65	22	84-118	20	07/05/2022 2125
Selenium	2.1	61	53		1	83	14	80-119	20	07/05/2022 2125
Silver	ND	61	67		1	109	11	83-118	20	07/05/2022 2125

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Chain of Custody
and
Miscellaneous Documents

Pace Analytical®

PACE ANALYTICAL SERVICES, LLC
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.pacelabs.com

Number 134598

Client: Terracon Consultants Inc.
Address: 249 Brentwood Rd
City: Raleigh State: NC Zip Code: 27604
Project Name: T.A.M.P.
Project No.: 7021 P145
P.O. No.:

Report to Contact: Ethan Dinwiddie
Sampler's Signature: [signature]
Printed Name: Ethan Dinwiddie

Telephone No. / E-mail: (828)-550-5502 / ethan.dinwiddie@terracon.com
Quote No.: 25322
Analysis (Attach list if more space is needed)
Page 1 of 2

XF24012
CBD

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	Collection Code	Matrix: Aqueous	Solid	Non-Aqueous	No of Containers by Preservative Type: Unpres.	H2SO4	HNO3	HCl	NaOH	5035 NF	Field Filtered	SVOCs 8270	RCRA 8 Mdl								Remarks / Cooler I.D.
RI-SB-13 (2-6)	6/23	945	C		X		2							X	X								
RI-SB-14 (0-4)	6/22	1745	C		X		2							X	X								
RI-SB-15 (2-4)	6/22	1800	C		X		2							X	X								
RI-SB-16 (0-4)	6/23	1100	C		X		2							X	X								
RI-SB-17 (0-6)	↓	1145	C		X		2							X	X								
RI-SB-18 (0-6)		1345	C		X		2							X	X								
RI-SB-19 (0-4)		1445	C		X		2							X	X								
RI-SB-20 (0-6)		1615	C		X		2							X	X								
RI-SB-21 (0-4)		1700	C		X		2							X	X								
RI-SB-22 (0-8)	↓	1750	C		X		2							X	X								

Turn Around Time Required (Prior lab approval required for expedited TAT.) ☒ Standard ☐ Rush (Specify)
Sample Disposal ☐ Return to Client ☐ Disposal by Lab
Possible Hazard Identification ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown
QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by [signature]	6/23	1700	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by FedEx	6-24-22	0940	4. Laboratory received by [signature]	6-24-22	0940

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Circle) Yes No Ice Pack
Receipt Temp. 3.7 °C
Temp Blank ☒ Y ☐ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME503N2-01

Pace Analytical

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www.pacelabs.com

Number 134597

Client: Terracon Consultants Inc.
Address: 2401 Brentwood Rd.
City: Raleigh | State: NC | Zip Code: 27604
Project Name: T.A.M.P.
Project No.: 702IP145
P.O. No.:
Report to Contact: Ethan Dinwiddie
Sampler's Signature: X
Printed Name: Ethan Dinwiddie
Telephone No. / E-mail: (828)-550-5502/ethan.dinwiddie@terracon.com
Analysis (Attach list if more space is needed)
Quote No.: 25322
Page 2 of 2
XF24012
CSD

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	G=Grab C=Composite	Matrix: Aqueous	Solid	Non-Aqueous	No of Containers by Preservative Type: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc NaOH	Field Filtered	SVOCs 8270	RCRA 8 Metals	Remarks / Cooler I.D.
RI-SB-23 (4-8)	6/23	1805	C		X		2							X	X	
DUP-SB-02	6/23	—	C		X		2							X	X	
DUP-SB-03	6/23	—	C		X		2							X	X	

Turn Around Time Required (Prior lab approval required for expedited TAT.): ☒ Standard ☐ Rush (Specify)
Sample Disposal: ☐ Return to Client ☒ Disposal by Lab
Possible Hazard Identification: ☐ Non Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☒ Unknown
QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by	6/23	1700	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by FedEx	6-24-22	0900	4. Laboratory Received by	6-24-22	0900

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on ice (Circle) Yes / No Ice Pack
Receipt Temp. 3.7 °C
Temp Blank ☐ Y ☐ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: MF003N2-01

Pace Analytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: TERRACON Cooler Inspected by/date: TEC / 06/24/2022 Lot #: XF24012

Means of receipt: ☐ Pace ☐ Client ☐ UPS ☑ FedEx ☐ Other: _____

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: 22-1253

3.7 / 3.7 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 6 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☑ Yes	☐ No	☐ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? _____
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☐ No	☑ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote # _____

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA _____ were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA _____ were received with bubbles >6 mm in diameter.

Samples(s) NA _____ were received with TRC > 0.5 mg/L (If #19 is ***no***) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: TEC Date: 06/24/2022

Comments:

Report of Analysis

Terracon Consultants, Inc.
2401 Brentwood Road
Suite 107 I
Raleigh, NC 27604
Attention: Ethan Dinwiddie

Project Name: TAMP

Project Number: 7021P145

Lot Number:**XF25020**

Date Completed:07/14/2022

07/15/2022 5:59 PM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.
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Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
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Case Narrative
Terracon Consultants, Inc.
Lot Number: XF25020

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Additionally, the DoD QSM version 5.3 has been followed for these samples. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs, the DoD QSM, or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

Where applicable, all soil sample results (including LOQ and DL if requested) are corrected for dry weight unless flagged with a "W" qualifier.

VOA 8260D

The continuing calibration verification (CCV) associated with batch 46673 and samples XF25020-013 (RI-SB-24 (0-4)) and XF25020-014 (RI-SB-24 (8-10)) for analyte(s): Dichlorodifluoromethane (51%), Chloromethane (42%), Bromomethane (24%), and Chloroethane (23%) recovered above the upper control limit. The samples associated with this CCV were non-detect for the affected analytes; therefore, the data has been reported.

The continuing calibration verification (CCV) and laboratory control sample (LCS) associated with batch 46673 and samples XF25020-013 (RI-SB-24 (0-4)) and XF25020-014 (RI-SB-24 (8-10)) for Vinyl Chloride (43% and 143%) recovered above the upper control limit. The samples associated with this CCV and LCS were non-detect for the affected analyte; therefore, the data has been reported.

The laboratory control sample (LCS) for analytical batch 46673 exceeded acceptance criteria for the following analytes: Dichlorodifluoromethane (151%), Chloromethane (142%) and Vinyl chloride. These analytes were biased high and were not detected in the associated samples: XF25020-013 (RI-SB-24 (0-4)) and XF25020-014 (RI-SB-24 (8-10)).

The initial calibration verification (ICV) associated with batch 46673 and samples XF25020-013 (RI-SB-24 (0-4)) and XF25020-014 (RI-SB-24 (8-10)) exceeded control criteria for Dichlorodifluoromethane (128%). The data has been reported.

The closing continuing calibration verification (CCV) associated with batch 46673 and sample XF25020-013 (RI-SB-24 (0-4)) and XF25020-014 (RI-SB-24 (8-10)) recovered above the upper control limit for Chloromethane (53%). The samples associated with this closing CCV were non-detect for the affected analyte; therefore, the data has been reported.

Reanalysis of the following samples was performed outside of the analytical holding time due to the closing CCV being analyzed out of tune time during unital analysis: XF25020-001 (RI-GW-01) and XF25020-002 (RI-GW-02). Re-analysis was performed at 1x, with concurring results. Report both sets of data.

The continuing calibration verification (CCV) associated with batch 47149 and samples XF25020-001 (RI-GW-01) and XF25020-002 (RI-GW-02) for analytes: Chloromethane, Vinyl Chloride, Bromomethane, Acetone, Methyl Acetate, Cyclohexane recovered above the upper control limit. The samples associated with this CCV were non-detect for the affected analytes; therefore, the data has been reported.

The continuing calibration verification (CCV) associated with batch 47368 and samples XF25020-001 (RI-GW-01), XF25020-002 (RI-GW-02), XF25020-009 (TB-06), XF25020-010 (FB-02) for analyte(s): 1,2-dibromo-3-chloropropane (DBCP) recovered above the upper control limit. The samples associated with this CCV were non-detect for the affected analytes; therefore, the data has been reported.

The matrix spike (MS) associated with batch XQ47368 recovered marginally above criteria for surrogate bromofluorobenzene (115%). The associated MSD and LCS passed all surrogate recovery criteria. The data has been reported.

The continuing calibration verification (CCV) associated with batch 47149 and samples XF25020-003 (RI-GW-04) and XF25020-008 (DUP-GW-01) for analytes: Chloromethane, Vinyl Chloride, Bromomethane, Acetone, Methyl Acetate, Cyclohexane recovered above the upper control limit. The samples associated with this CCV were non-detect for the affected analytes; therefore, the data has been reported.

Reanalysis of the following samples was performed outside of the analytical holding time due to the closing CCV being analyzed out of tune time during unital analysis: XF25020-003 (RI-GW-04) (Run 2) and XF25020-008 (DUP-GW-01). Re-analysis was performed at a 1x with concurring results. Report both sets of data.

The continuing calibration verification (CCV) associated with batch 47363 and samples (Run 2) XF25020-003(RI-GW-04), XF25020-004 (RI-GW-05), XF25020-005 (RI-GW-06), XF25020-006 (RI-GW-07), XF25020-007 (RI-GW-08), and XF25020-008 (DUP-GW-01) for analyte(s): 2-Butanone (26%) and 1,2,4-Trichlorobenzene (23%) recovered above the upper control limit. The samples associated with this CCV were non-detect for the affected analytes; therefore, the data has been reported.

The initial calibration verification (ICV) associated with batch 47363 and samples (Run 2) XF25020-003(RI-GW-04), XF25020-004 (RI-GW-05), XF25020-005 (RI-GW-06), XF25020-006 (RI-GW-07), XF25020-007 (RI-GW-08), and XF25020-008 (DUP-GW-01) exceeded control criteria for analytes: Chloroethane (124%), Acetone (130%) and 2-butanone (130%). The data has been reported.

Sample XF25020-004 (RI-GW-05) required a dilution for cis-1,2-dichloroethene, which was performed outside of the analytical holding time. The Run 3 for this dilution analysis was analyzed from a previously run vial with head space.

The closing continuing calibration verification (CCV) for batch 47711 was out of tune time by 1 hour and 33 minutes during initial analysis due to instrument error. The samples affected: XF25020-011 (FB-03) (Run 3) and XF25020-012 (EB-03) (Run 3). An attempt was made to rerun within hold time, but due to

foam error the closing CCV did not run. Reanalysis of samples XF25020-011 (FB-03) and XF25020-012 (EB-03) were performed for a third time outside of the analytical holding time, with concurring results. The data has been reported from the initial analysis since results were confirmed.

The MS for batch 47149 and parent sample XF25020-002 (RI-GW-02), recovered outside the upper control limit for chloromethane, cyclcohexane and vinyl chloride. The associated MSD recovered outside the upper control limit for only vinyl chloride. The associated LCS passed acceptance criteria.

The MS for batch 47368 had Bromofluorobenznen surrogate marginally outside the upper control limit. The associated LCS and MSD met all surrogate recovery criteria.

Metals 6020B
The MS for batch 46576 and parent sample XF25020-017 (RI-GW-01D(11-13)), recovered outside the upper control limit for Barium. The associated LCS and MSD passed acceptance criteria.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Sample Summary

Terracon Consultants, Inc.

Lot Number: XF25020

Project Name: TAMP

Project Number: 7021P145

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	RI-GW-01	Aqueous	06/23/2022 1250	06/25/2022
002	RI-GW-02	Aqueous	06/23/2022 1300	06/25/2022
003	RI-GW-04	Aqueous	06/23/2022 1610	06/25/2022
004	RI-GW-05	Aqueous	06/24/2022 0940	06/25/2022
005	RI-GW-06	Aqueous	06/24/2022 1440	06/25/2022
006	RI-GW-07	Aqueous	06/24/2022 1500	06/25/2022
007	RI-GW-08	Aqueous	06/24/2022 1530	06/25/2022
008	DUP-GW-01	Aqueous	06/23/2022	06/25/2022
009	TB-06	Aqueous	06/23/2022	06/25/2022
010	FB-02	Aqueous	06/23/2022 1115	06/25/2022
011	FB-03	Aqueous	06/24/2022 0935	06/25/2022
012	EB-03	Aqueous	06/24/2022 0930	06/25/2022
013	RI-SB-24 (0-4)	Solid	06/24/2022 1025	06/25/2022
014	RI-SB-24 (8-10)	Solid	06/24/2022 1030	06/25/2022
015	RI-GW-01a (0-4)	Solid	06/23/2022 1100	06/25/2022
016	RI-GW-01D (0-4)	Solid	06/23/2022 1040	06/25/2022
017	RI-GW-01D (11-13)	Solid	06/23/2022 1045	06/25/2022

(17 samples)

Detection Summary
Terracon Consultants, Inc.
Lot Number: XF25020
Project Name: TAMP
Project Number: 7021P145

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	RI-GW-01	Aqueous	Acetone	8260D	68	H	ug/L	10
001	RI-GW-01	Aqueous	2-Butanone (MEK)	8260D	4.0	HJ	ug/L	10
001	RI-GW-01	Aqueous	1,1-Dichloroethane	8260D	0.52	HJ	ug/L	10
001	RI-GW-01	Aqueous	1,2-Dichloroethane	8260D	1.1	H	ug/L	10
001	RI-GW-01	Aqueous	1,1-Dichloroethene	8260D	0.41	HJ	ug/L	10
001	RI-GW-01	Aqueous	4-Methyl-2-pentanone	8260D	2.0	HJ	ug/L	10
002	RI-GW-02	Aqueous	Chloroform	8260D	1.7	H	ug/L	14
002	RI-GW-02	Aqueous	1,1-Dichloroethane	8260D	13	H	ug/L	14
002	RI-GW-02	Aqueous	1,2-Dichloroethane	8260D	3.2	H	ug/L	14
002	RI-GW-02	Aqueous	1,1-Dichloroethene	8260D	32	H	ug/L	14
002	RI-GW-02	Aqueous	1,1,2-Trichloro-1,2,2-	8260D	20	H	ug/L	14
002	RI-GW-02	Aqueous	1,1,1-Trichloroethane	8260D	2.4	H	ug/L	14
002	RI-GW-02	Aqueous	Trichloroethene	8260D	1.8	H	ug/L	15
002	RI-GW-02	Aqueous	Trichlorofluoromethane	8260D	0.80	HJ	ug/L	15
003	RI-GW-04	Aqueous	cis-1,2-Dichloroethene	8260D	1.0	H	ug/L	18
003	RI-GW-04	Aqueous	Tetrachloroethene	8260D	2.5	H	ug/L	18
003	RI-GW-04	Aqueous	Trichloroethene	8260D	21	H	ug/L	19
004	RI-GW-05	Aqueous	1,1-Dichloroethane	8260D	1.9		ug/L	20
004	RI-GW-05	Aqueous	1,1-Dichloroethene	8260D	1.6		ug/L	20
004	RI-GW-05	Aqueous	cis-1,2-Dichloroethene	8260D	180	H	ug/L	20
004	RI-GW-05	Aqueous	trans-1,2-Dichloroethene	8260D	2.4		ug/L	20
004	RI-GW-05	Aqueous	Methyl tertiary butyl ether	8260D	0.78	J	ug/L	20
004	RI-GW-05	Aqueous	Tetrachloroethene	8260D	65		ug/L	20
004	RI-GW-05	Aqueous	Trichloroethene	8260D	180		ug/L	21
004	RI-GW-05	Aqueous	Vinyl chloride	8260D	5.9		ug/L	21
005	RI-GW-06	Aqueous	Acetone	8260D	13	J	ug/L	22
005	RI-GW-06	Aqueous	Chloroform	8260D	0.73	J	ug/L	22
005	RI-GW-06	Aqueous	1,1-Dichloroethane	8260D	1.4		ug/L	22
005	RI-GW-06	Aqueous	cis-1,2-Dichloroethene	8260D	59		ug/L	22
005	RI-GW-06	Aqueous	trans-1,2-Dichloroethene	8260D	0.81	J	ug/L	22
005	RI-GW-06	Aqueous	Methyl tertiary butyl ether	8260D	0.46	J	ug/L	22
005	RI-GW-06	Aqueous	Tetrachloroethene	8260D	28		ug/L	22
005	RI-GW-06	Aqueous	Trichloroethene	8260D	110		ug/L	23
005	RI-GW-06	Aqueous	Vinyl chloride	8260D	0.41	J	ug/L	23
005	RI-GW-06	Aqueous	Xylenes (total)	8260D	4.9		ug/L	23
006	RI-GW-07	Aqueous	Acetone	8260D	13	J	ug/L	24
006	RI-GW-07	Aqueous	cis-1,2-Dichloroethene	8260D	1.4		ug/L	24
006	RI-GW-07	Aqueous	Tetrachloroethene	8260D	3.9		ug/L	24
006	RI-GW-07	Aqueous	Trichloroethene	8260D	4.8		ug/L	25
007	RI-GW-08	Aqueous	Acetone	8260D	15	J	ug/L	26
007	RI-GW-08	Aqueous	cis-1,2-Dichloroethene	8260D	0.52	J	ug/L	26
007	RI-GW-08	Aqueous	4-Methyl-2-pentanone	8260D	2.6	J	ug/L	26
007	RI-GW-08	Aqueous	Tetrachloroethene	8260D	2.3		ug/L	26

Detection Summary (Continued)

Lot Number: XF25020

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
007	RI-GW-08	Aqueous	Trichloroethene	8260D	3.0		ug/L	27
008	DUP-GW-01	Aqueous	Chloroform	8260D	1.9	H	ug/L	30
008	DUP-GW-01	Aqueous	1,1-Dichloroethane	8260D	14	H	ug/L	30
008	DUP-GW-01	Aqueous	1,2-Dichloroethane	8260D	3.2	H	ug/L	30
008	DUP-GW-01	Aqueous	1,1-Dichloroethene	8260D	33	H	ug/L	30
008	DUP-GW-01	Aqueous	1,1,2-Trichloro-1,2,2-	8260D	20	H	ug/L	30
008	DUP-GW-01	Aqueous	1,1,1-Trichloroethane	8260D	2.6	H	ug/L	30
008	DUP-GW-01	Aqueous	Trichloroethene	8260D	1.9	H	ug/L	31
008	DUP-GW-01	Aqueous	Trichlorofluoromethane	8260D	0.82	HJ	ug/L	31
010	FB-02	Aqueous	Acetone	8260D	15	J	ug/L	34
010	FB-02	Aqueous	Methylene chloride	8260D	0.80	J	ug/L	34
011	FB-03	Aqueous	Acetone	8260D	9.9	J	ug/L	36
011	FB-03	Aqueous	Methylene chloride	8260D	2.1		ug/L	36
012	EB-03	Aqueous	Acetone	8260D	12	J	ug/L	38
012	EB-03	Aqueous	Methylene chloride	8260D	2.0		ug/L	38
013	RI-SB-24 (0-4)	Solid	Acetone	8260D	44		ug/kg	40
013	RI-SB-24 (0-4)	Solid	cis-1,2-Dichloroethene	8260D	40		ug/kg	40
013	RI-SB-24 (0-4)	Solid	Tetrachloroethene	8260D	19		ug/kg	40
013	RI-SB-24 (0-4)	Solid	Trichloroethene	8260D	110		ug/kg	41
014	RI-SB-24 (8-10)	Solid	cis-1,2-Dichloroethene	8260D	43		ug/kg	42
014	RI-SB-24 (8-10)	Solid	trans-1,2-Dichloroethene	8260D	4.6	J	ug/kg	42
014	RI-SB-24 (8-10)	Solid	Trichloroethene	8260D	4.7	J	ug/kg	43
015	RI-GW-01a (0-4)	Solid	Arsenic	6020B	0.35	J	mg/kg	44
015	RI-GW-01a (0-4)	Solid	Barium	6020B	69		mg/kg	44
015	RI-GW-01a (0-4)	Solid	Chromium	6020B	7.5	J	mg/kg	44
015	RI-GW-01a (0-4)	Solid	Lead	6020B	2.9		mg/kg	44
015	RI-GW-01a (0-4)	Solid	Selenium	6020B	0.52	J	mg/kg	44
016	RI-GW-01D (0-4)	Solid	Arsenic	6020B	0.40	J	mg/kg	45
016	RI-GW-01D (0-4)	Solid	Barium	6020B	41		mg/kg	45
016	RI-GW-01D (0-4)	Solid	Chromium	6020B	13		mg/kg	45
016	RI-GW-01D (0-4)	Solid	Lead	6020B	3.2		mg/kg	45
016	RI-GW-01D (0-4)	Solid	Selenium	6020B	1.3		mg/kg	45
017	RI-GW-01D (11-13)	Solid	Arsenic	6020B	0.73		mg/kg	46
017	RI-GW-01D (11-13)	Solid	Barium	6020B	180	S	mg/kg	46
017	RI-GW-01D (11-13)	Solid	Cadmium	6020B	0.066	J	mg/kg	46
017	RI-GW-01D (11-13)	Solid	Chromium	6020B	17		mg/kg	46
017	RI-GW-01D (11-13)	Solid	Lead	6020B	0.76	J	mg/kg	46
017	RI-GW-01D (11-13)	Solid	Selenium	6020B	1.5		mg/kg	46

(81 detections)

Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XF25020-001**

Description: **RI-GW-01** Matrix: **Aqueous**

Date Sampled: **06/23/2022 1250** Project Name: **TAMP**

Date Received: **06/25/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	07/06/2022 1249	BBW		47149
2	5030B	8260D	1	07/08/2022 0105	SDC		47368

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**52**		**20**	10	**5.0**	**ug/L**	**1**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	**78-93-3**	**8260D**	**5.9**	**J**	**10**	4.0	**2.0**	**ug/L**	**1**
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	**75-34-3**	**8260D**	**0.63**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
1,2-Dichloroethane	**107-06-2**	**8260D**	**1.2**		**1.0**	0.80	**0.40**	**ug/L**	**1**
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	**108-10-1**	**8260D**	**2.7**	**J**	**10**	4.0	**2.0**	**ug/L**	**1**
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25020-001**	
Description: **RI-GW-01**		Matrix: **Aqueous**	
Date Sampled: **06/23/2022 1250**	Project Name: **TAMP**		
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	07/06/2022 1249	BBW		47149
2	5030B	8260D	1	07/08/2022 0105	SDC		47368

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		98	81-118	H	103	81-118
Bromofluorobenzene		95	85-114	H	111	85-114
Toluene-d8		99	89-112	H	105	89-112
Dibromofluoromethane		105	80-119	H	103	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XF25020-001**

Description: **RI-GW-01** Matrix: **Aqueous**

Date Sampled: **06/23/2022 1250** Project Name: **TAMP**

Date Received: **06/25/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	07/06/2022 1249	BBW		47149
2	5030B	8260D	1	07/08/2022 0105	SDC		47368

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**68**	**H**	**20**	10	**5.0**	**ug/L**	**2**
Benzene	71-43-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromoform	75-25-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
2-Butanone (MEK)	**78-93-3**	**8260D**	**4.0**	**HJ**	**10**	4.0	**2.0**	**ug/L**	**2**
Carbon disulfide	75-15-0	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chloroethane	75-00-3	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
Chloroform	67-66-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	UH	2.0	1.0	0.50	ug/L	2
Cyclohexane	110-82-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	1.2	UH	2.0	1.2	0.60	ug/L	2
1,1-Dichloroethane	**75-34-3**	**8260D**	**0.52**	**HJ**	**1.0**	0.80	**0.40**	**ug/L**	**2**
1,2-Dichloroethane	**107-06-2**	**8260D**	**1.1**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**
1,1-Dichloroethene	**75-35-4**	**8260D**	**0.41**	**HJ**	**1.0**	0.80	**0.40**	**ug/L**	**2**
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
4-Methyl-2-pentanone	**108-10-1**	**8260D**	**2.0**	**HJ**	**10**	4.0	**2.0**	**ug/L**	**2**
Methylcyclohexane	108-87-2	8260D	0.80	UH	5.0	0.80	0.40	ug/L	2
Methylene chloride	75-09-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Styrene	100-42-5	8260D	0.82	UH	1.0	0.82	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Tetrachloroethene	127-18-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Toluene	108-88-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	UH	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25020-001**	
Description: **RI-GW-01**		Matrix: **Aqueous**	
Date Sampled: **06/23/2022 1250**	Project Name: **TAMP**		
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	07/06/2022 1249	BBW		47149
2	5030B	8260D	1	07/08/2022 0105	SDC		47368

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Trichloroethene	79-01-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Trichlorofluoromethane	75-69-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Vinyl chloride	75-01-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		98	81-118	H	103	81-118
Bromofluorobenzene		95	85-114	H	111	85-114
Toluene-d8		99	89-112	H	105	89-112
Dibromofluoromethane		105	80-119	H	103	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XF25020-002**

Description: **RI-GW-02** Matrix: **Aqueous**

Date Sampled: **06/23/2022 1300** Project Name: **TAMP**

Date Received: **06/25/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	07/06/2022 1314	BBW		47149
2	5030B	8260D	1	07/08/2022 0129	SDC		47368

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	**67-66-3**	**8260D**	**2.0**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	US	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	US	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	**75-34-3**	**8260D**	**15**		**1.0**	0.80	**0.40**	**ug/L**	**1**
1,2-Dichloroethane	**107-06-2**	**8260D**	**3.4**		**1.0**	0.80	**0.40**	**ug/L**	**1**
1,1-Dichloroethene	**75-35-4**	**8260D**	**33**		**1.0**	0.80	**0.40**	**ug/L**	**1**
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**20**		**1.0**	0.84	**0.42**	**ug/L**	**1**
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	**71-55-6**	**8260D**	**2.4**		**1.0**	0.80	**0.40**	**ug/L**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25020-002**	
Description: **RI-GW-02**		Matrix: **Aqueous**	
Date Sampled: **06/23/2022 1300**	Project Name: **TAMP**		
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	07/06/2022 1314	BBW		47149
2	5030B	8260D	1	07/08/2022 0129	SDC		47368

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**1.6**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	**75-69-4**	**8260D**	**0.77**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
Vinyl chloride	75-01-4	8260D	0.80	US	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		98	81-118	H	103	81-118
Bromofluorobenzene		94	85-114	H	109	85-114
Toluene-d8		97	89-112	H	106	89-112
Dibromofluoromethane		103	80-119	H	103	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XF25020-002**

Description: **RI-GW-02** Matrix: **Aqueous**

Date Sampled: **06/23/2022 1300** Project Name: **TAMP**

Date Received: **06/25/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	07/06/2022 1314	BBW		47149
2	5030B	8260D	1	07/08/2022 0129	SDC		47368

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	UH	20	10	5.0	ug/L	2
Benzene	71-43-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromoform	75-25-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chloroethane	75-00-3	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
Chloroform	**67-66-3**	**8260D**	**1.7**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	UH	2.0	1.0	0.50	ug/L	2
Cyclohexane	110-82-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	1.2	UH	2.0	1.2	0.60	ug/L	2
1,1-Dichloroethane	**75-34-3**	**8260D**	**13**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**
1,2-Dichloroethane	**107-06-2**	**8260D**	**3.2**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**
1,1-Dichloroethene	**75-35-4**	**8260D**	**32**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Methylcyclohexane	108-87-2	8260D	0.80	UH	5.0	0.80	0.40	ug/L	2
Methylene chloride	75-09-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Styrene	100-42-5	8260D	0.82	UH	1.0	0.82	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Tetrachloroethene	127-18-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Toluene	108-88-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**20**	**H**	**1.0**	0.84	**0.42**	**ug/L**	**2**
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,1-Trichloroethane	**71-55-6**	**8260D**	**2.4**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25020-002**	
Description: **RI-GW-02**		Matrix: **Aqueous**	
Date Sampled: **06/23/2022 1300**	Project Name: **TAMP**		
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	07/06/2022 1314	BBW		47149
2	5030B	8260D	1	07/08/2022 0129	SDC		47368

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Trichloroethene	**79-01-6**	**8260D**	**1.8**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Trichlorofluoromethane	**75-69-4**	**8260D**	**0.80**	**HJ**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Vinyl chloride	75-01-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		98	81-118	H	103	81-118
Bromofluorobenzene		94	85-114	H	109	85-114
Toluene-d8		97	89-112	H	106	89-112
Dibromofluoromethane		103	80-119	H	103	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25020-003**	
Description: **RI-GW-04**		Matrix: **Aqueous**	
Date Sampled: **06/23/2022 1610**	Project Name: **TAMP**		
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	07/06/2022 1338	BBW		47149
2	5030B	8260D	1	07/08/2022 0200	SDC		47363

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**1.1**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**2.4**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25020-003**	
Description: **RI-GW-04**		Matrix: **Aqueous**	
Date Sampled: **06/23/2022 1610**	Project Name: **TAMP**		
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	07/06/2022 1338	BBW		47149
2	5030B	8260D	1	07/08/2022 0200	SDC		47363

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**19**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		95	81-118	H	88	81-118
Bromofluorobenzene		91	85-114	H	92	85-114
Toluene-d8		95	89-112	H	95	89-112
Dibromofluoromethane		104	80-119	H	98	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25020-003**	
Description: **RI-GW-04**		Matrix: **Aqueous**	
Date Sampled: **06/23/2022 1610**	Project Name: **TAMP**		
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	07/06/2022 1338	BBW		47149
2	5030B	8260D	1	07/08/2022 0200	SDC		47363

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	UH	20	10	5.0	ug/L	2
Benzene	71-43-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromoform	75-25-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chloroethane	75-00-3	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
Chloroform	67-66-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	UH	2.0	1.0	0.50	ug/L	2
Cyclohexane	110-82-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	1.2	UH	2.0	1.2	0.60	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**1.0**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Methylcyclohexane	108-87-2	8260D	0.80	UH	5.0	0.80	0.40	ug/L	2
Methylene chloride	75-09-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Styrene	100-42-5	8260D	0.82	UH	1.0	0.82	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Tetrachloroethene	**127-18-4**	**8260D**	**2.5**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Toluene	108-88-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	UH	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25020-003**	
Description: **RI-GW-04**		Matrix: **Aqueous**	
Date Sampled: **06/23/2022 1610**	Project Name: **TAMP**		
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	07/06/2022 1338	BBW		47149
2	5030B	8260D	1	07/08/2022 0200	SDC		47363

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Trichloroethene	**79-01-6**	**8260D**	**21**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Trichlorofluoromethane	75-69-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Vinyl chloride	75-01-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		95	81-118	H	88	81-118
Bromofluorobenzene		91	85-114	H	92	85-114
Toluene-d8		95	89-112	H	95	89-112
Dibromofluoromethane		104	80-119	H	98	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XF25020-004**

Description: **RI-GW-05** Matrix: **Aqueous**

Date Sampled: **06/24/2022 0940** Project Name: **TAMP**

Date Received: **06/25/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	1	07/08/2022 0224	SDC		47363
3	5030B	8260D	5	07/09/2022 1818	BBW		47500

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	2
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	2
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	2
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	2
1,1-Dichloroethane	**75-34-3**	**8260D**	**1.9**		**1.0**	0.80	**0.40**	**ug/L**	**2**
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1-Dichloroethene	**75-35-4**	**8260D**	**1.6**		**1.0**	0.80	**0.40**	**ug/L**	**2**
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**180**	**H**	**5.0**	4.0	**2.0**	**ug/L**	**3**
trans-1,2-Dichloroethene	**156-60-5**	**8260D**	**2.4**		**1.0**	0.80	**0.40**	**ug/L**	**2**
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260D**	**0.78**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**2**
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	2
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	2
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Tetrachloroethene	**127-18-4**	**8260D**	**65**		**1.0**	0.80	**0.40**	**ug/L**	**2**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	2

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25020-004**	
Description: **RI-GW-05**		Matrix: **Aqueous**	
Date Sampled: **06/24/2022 0940**	Project Name: **TAMP**		
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	1	07/08/2022 0224	SDC		47363
3	5030B	8260D	5	07/09/2022 1818	BBW		47500

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Trichloroethene	**79-01-6**	**8260D**	**180**		**1.0**	0.80	**0.40**	**ug/L**	**2**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Vinyl chloride	**75-01-4**	**8260D**	**5.9**		**1.0**	0.80	**0.40**	**ug/L**	**2**
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits	Q	Run 3 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		87	81-118	H	105	81-118
Bromofluorobenzene		92	85-114	H	114	85-114
Toluene-d8		94	89-112	H	107	89-112
Dibromofluoromethane		96	80-119	H	105	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XF25020-005**
Description: **RI-GW-06** Matrix: **Aqueous**
Date Sampled: **06/24/2022 1440** Project Name: **TAMP**
Date Received: **06/25/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	1	07/08/2022 0247	SDC		47363

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**13**	**J**	**20**	10	**5.0**	**ug/L**	**2**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	2
Chloroform	**67-66-3**	**8260D**	**0.73**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	2
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	2
1,1-Dichloroethane	**75-34-3**	**8260D**	**1.4**		**1.0**	0.80	**0.40**	**ug/L**	**2**
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**59**		**1.0**	0.80	**0.40**	**ug/L**	**2**
trans-1,2-Dichloroethene	**156-60-5**	**8260D**	**0.81**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**2**
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260D**	**0.46**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**2**
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	2
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	2
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Tetrachloroethene	**127-18-4**	**8260D**	**28**		**1.0**	0.80	**0.40**	**ug/L**	**2**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25020-005**	
Description: **RI-GW-06**		Matrix: **Aqueous**	
Date Sampled: **06/24/2022 1440**	Project Name: **TAMP**		
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	1	07/08/2022 0247	SDC		47363

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**110**		**1.0**	0.80	**0.40**	**ug/L**	**2**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Vinyl chloride	**75-01-4**	**8260D**	**0.41**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Xylenes (total)	**1330-20-7**	**8260D**	**4.9**		**1.0**	0.80	**0.40**	**ug/L**	**2**

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		87	81-118
Bromofluorobenzene		93	85-114
Toluene-d8		93	89-112
Dibromofluoromethane		97	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XF25020-006**
Description: **RI-GW-07** Matrix: **Aqueous**
Date Sampled: **06/24/2022 1500** Project Name: **TAMP**
Date Received: **06/25/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	1	07/08/2022 0310	SDC		47363

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**13**	**J**	**20**	10	**5.0**	**ug/L**	**2**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	2
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	2
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**1.4**		**1.0**	0.80	**0.40**	**ug/L**	**2**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	2
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	2
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Tetrachloroethene	**127-18-4**	**8260D**	**3.9**		**1.0**	0.80	**0.40**	**ug/L**	**2**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25020-006**	
Description: **RI-GW-07**		Matrix: **Aqueous**	
Date Sampled: **06/24/2022 1500**	Project Name: **TAMP**		
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	1	07/08/2022 0310	SDC		47363

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**4.8**		**1.0**	0.80	**0.40**	**ug/L**	**2**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		91	81-118
Bromofluorobenzene		94	85-114
Toluene-d8		92	89-112
Dibromofluoromethane		98	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XF25020-007**
Description: **RI-GW-08** Matrix: **Aqueous**
Date Sampled: **06/24/2022 1530** Project Name: **TAMP**
Date Received: **06/25/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	1	07/08/2022 0334	SDC		47363

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**15**	**J**	**20**	10	**5.0**	**ug/L**	**2**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	2
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	2
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**0.52**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**2**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
4-Methyl-2-pentanone	**108-10-1**	**8260D**	**2.6**	**J**	**10**	4.0	**2.0**	**ug/L**	**2**
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	2
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Tetrachloroethene	**127-18-4**	**8260D**	**2.3**		**1.0**	0.80	**0.40**	**ug/L**	**2**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25020-007**	
Description: **RI-GW-08**		Matrix: **Aqueous**	
Date Sampled: **06/24/2022 1530**	Project Name: **TAMP**		
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	1	07/08/2022 0334	SDC		47363

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**3.0**		**1.0**	0.80	**0.40**	**ug/L**	**2**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		87	81-118
Bromofluorobenzene		93	85-114
Toluene-d8		96	89-112
Dibromofluoromethane		97	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25020-008**	
Description: **DUP-GW-01**		Matrix: **Aqueous**	
Date Sampled: **06/23/2022**	Project Name: **TAMP**		
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	07/06/2022 1541	BBW		47149
2	5030B	8260D	1	07/08/2022 0357	SDC		47363

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	**67-66-3**	**8260D**	**1.9**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	**75-34-3**	**8260D**	**16**		**1.0**	0.80	**0.40**	**ug/L**	**1**
1,2-Dichloroethane	**107-06-2**	**8260D**	**3.3**		**1.0**	0.80	**0.40**	**ug/L**	**1**
1,1-Dichloroethene	**75-35-4**	**8260D**	**34**		**1.0**	0.80	**0.40**	**ug/L**	**1**
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**21**		**1.0**	0.84	**0.42**	**ug/L**	**1**
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	**71-55-6**	**8260D**	**2.6**		**1.0**	0.80	**0.40**	**ug/L**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25020-008**	
Description: **DUP-GW-01**		Matrix: **Aqueous**	
Date Sampled: **06/23/2022**	Project Name: **TAMP**		
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	07/06/2022 1541	BBW		47149
2	5030B	8260D	1	07/08/2022 0357	SDC		47363

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**1.7**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	**75-69-4**	**8260D**	**0.84**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		91	81-118	H	92	81-118
Bromofluorobenzene		86	85-114	H	91	85-114
Toluene-d8		91	89-112	H	93	89-112
Dibromofluoromethane		98	80-119	H	100	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25020-008**	
Description: **DUP-GW-01**		Matrix: **Aqueous**	
Date Sampled: **06/23/2022**	Project Name: **TAMP**		
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	07/06/2022 1541	BBW		47149
2	5030B	8260D	1	07/08/2022 0357	SDC		47363

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	UH	20	10	5.0	ug/L	2
Benzene	71-43-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromoform	75-25-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chloroethane	75-00-3	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
Chloroform	**67-66-3**	**8260D**	**1.9**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	UH	2.0	1.0	0.50	ug/L	2
Cyclohexane	110-82-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	1.2	UH	2.0	1.2	0.60	ug/L	2
1,1-Dichloroethane	**75-34-3**	**8260D**	**14**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**
1,2-Dichloroethane	**107-06-2**	**8260D**	**3.2**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**
1,1-Dichloroethene	**75-35-4**	**8260D**	**33**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Methylcyclohexane	108-87-2	8260D	0.80	UH	5.0	0.80	0.40	ug/L	2
Methylene chloride	75-09-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Styrene	100-42-5	8260D	0.82	UH	1.0	0.82	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Tetrachloroethene	127-18-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Toluene	108-88-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**20**	**H**	**1.0**	0.84	**0.42**	**ug/L**	**2**
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,1-Trichloroethane	**71-55-6**	**8260D**	**2.6**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25020-008**	
Description: **DUP-GW-01**		Matrix: **Aqueous**	
Date Sampled: **06/23/2022**	Project Name: **TAMP**		
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	07/06/2022 1541	BBW		47149
2	5030B	8260D	1	07/08/2022 0357	SDC		47363

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Trichloroethene	**79-01-6**	**8260D**	**1.9**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Trichlorofluoromethane	**75-69-4**	**8260D**	**0.82**	**HJ**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Vinyl chloride	75-01-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		91	81-118	H	92	81-118
Bromofluorobenzene		86	85-114	H	91	85-114
Toluene-d8		91	89-112	H	93	89-112
Dibromofluoromethane		98	80-119	H	100	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25020-009**	
Description: **TB-06**		Matrix: **Aqueous**	
Date Sampled: **06/23/2022**	Project Name: **TAMP**		
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	1	07/07/2022 2330	SDC		47368

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	2
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	2
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	2
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	2
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	2
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25020-009**	
Description: **TB-06**		Matrix: **Aqueous**	
Date Sampled: **06/23/2022**	Project Name: **TAMP**		
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	1	07/07/2022 2330	SDC		47368

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		105	81-118
Bromofluorobenzene		110	85-114
Toluene-d8		108	89-112
Dibromofluoromethane		108	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XF25020-010**
Description: **FB-02** Matrix: **Aqueous**
Date Sampled: **06/23/2022 1115** Project Name: **TAMP**
Date Received: **06/25/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	1	07/07/2022 2353	SDC		47368

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**15**	**J**	**20**	10	**5.0**	**ug/L**	**2**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	2
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	2
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	2
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	2
Methylene chloride	**75-09-2**	**8260D**	**0.80**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25020-010**	
Description: **FB-02**		Matrix: **Aqueous**	
Date Sampled: **06/23/2022 1115**	Project Name: **TAMP**		
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	1	07/07/2022 2353	SDC		47368

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		102	81-118
Bromofluorobenzene		109	85-114
Toluene-d8		103	89-112
Dibromofluoromethane		103	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XF25020-011**

Description: **FB-03** Matrix: **Aqueous**

Date Sampled: **06/24/2022 0935** Project Name: **TAMP**

Date Received: **06/25/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	07/06/2022 1200	BBW		47149

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**9.9**	**J**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	**75-09-2**	**8260D**	**2.1**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25020-011**	
Description: **FB-03**		Matrix: **Aqueous**	
Date Sampled: **06/24/2022 0935**	Project Name: **TAMP**		
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	07/06/2022 1200	BBW		47149

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		96	81-118
Bromofluorobenzene		89	85-114
Toluene-d8		94	89-112
Dibromofluoromethane		103	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XF25020-012**

Description: **EB-03** Matrix: **Aqueous**

Date Sampled: **06/24/2022 0930** Project Name: **TAMP**

Date Received: **06/25/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	07/06/2022 1225	BBW		47149

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**12**	**J**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	**75-09-2**	**8260D**	**2.0**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25020-012**	
Description: **EB-03**		Matrix: **Aqueous**	
Date Sampled: **06/24/2022 0930**	Project Name: **TAMP**		
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	07/06/2022 1225	BBW		47149

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		90	81-118
Bromofluorobenzene		89	85-114
Toluene-d8		92	89-112
Dibromofluoromethane		97	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25020-013**	
Description: **RI-SB-24 (0-4)**		Matrix: **Solid**	
Date Sampled: **06/24/2022 1025**	Project Name: **TAMP**	% Solids: **86.0**	**06/29/2022 2306**
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1832	JM1		46673

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**44**		**19**	15	**7.5**	**ug/kg**	**1**
Benzene	71-43-2	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Bromodichloromethane	75-27-4	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Bromoform	75-25-2	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	5.6	U	9.4	5.6	2.8	ug/kg	1
2-Butanone (MEK)	78-93-3	8260D	7.6	U	19	7.6	3.7	ug/kg	1
Carbon disulfide	75-15-0	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Carbon tetrachloride	56-23-5	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Chlorobenzene	108-90-7	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Chloroethane	75-00-3	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Chloroform	67-66-3	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	5.6	UL	9.4	5.6	2.8	ug/kg	1
Cyclohexane	110-82-7	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Dibromochloromethane	124-48-1	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260D	5.6	UL	9.4	5.6	2.8	ug/kg	1
1,1-Dichloroethane	75-34-3	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,2-Dichloroethane	107-06-2	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,1-Dichloroethene	75-35-4	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**40**		**4.7**	3.8	**1.9**	**ug/kg**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,2-Dichloropropane	78-87-5	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Ethylbenzene	100-41-4	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
2-Hexanone	591-78-6	8260D	7.5	U	9.4	7.5	3.7	ug/kg	1
Isopropylbenzene	98-82-8	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Methyl acetate	79-20-9	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260D	7.5	U	9.4	7.5	3.7	ug/kg	1
Methylcyclohexane	108-87-2	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Methylene chloride	75-09-2	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Styrene	100-42-5	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Tetrachloroethene	**127-18-4**	**8260D**	**19**		**4.7**	3.8	**1.9**	**ug/kg**	**1**
Toluene	108-88-3	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25020-013**	
Description: **RI-SB-24 (0-4)**		Matrix: **Solid**	
Date Sampled: **06/24/2022 1025**	Project Name: **TAMP**	% Solids: **86.0**	**06/29/2022 2306**
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1832	JM1		46673

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**110**		**4.7**	3.8	**1.9**	**ug/kg**	**1**
Trichlorofluoromethane	75-69-4	8260D	3.8	U	4.7	3.8	1.9	ug/kg	1
Vinyl chloride	75-01-4	8260D	5.6	UL	9.4	5.6	2.8	ug/kg	1
Xylenes (total)	1330-20-7	8260D	7.5	U	9.4	7.5	3.7	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		92	79-119
Dibromofluoromethane		102	78-119
1,2-Dichloroethane-d4		104	71-136
Toluene-d8		107	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25020-014**	
Description: **RI-SB-24 (8-10)**		Matrix: **Solid**	
Date Sampled: **06/24/2022 1030**	Project Name: **TAMP**	% Solids: **76.1**	**06/29/2022 2306**
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1855	JM1		46673

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	18	U	22	18	9.0	ug/kg	1
Benzene	71-43-2	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Bromodichloromethane	75-27-4	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Bromoform	75-25-2	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	6.6	U	11	6.6	3.4	ug/kg	1
2-Butanone (MEK)	78-93-3	8260D	8.8	U	22	8.8	4.5	ug/kg	1
Carbon disulfide	75-15-0	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Carbon tetrachloride	56-23-5	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Chlorobenzene	108-90-7	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Chloroethane	75-00-3	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Chloroform	67-66-3	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	6.6	UL	11	6.6	3.4	ug/kg	1
Cyclohexane	110-82-7	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Dibromochloromethane	124-48-1	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260D	6.6	UL	11	6.6	3.4	ug/kg	1
1,1-Dichloroethane	75-34-3	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,2-Dichloroethane	107-06-2	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,1-Dichloroethene	75-35-4	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**43**		**5.6**	4.5	**2.2**	**ug/kg**	**1**
trans-1,2-Dichloroethene	**156-60-5**	**8260D**	**4.6**	**J**	**5.6**	4.5	**2.2**	**ug/kg**	**1**
1,2-Dichloropropane	78-87-5	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Ethylbenzene	100-41-4	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
2-Hexanone	591-78-6	8260D	8.8	U	11	8.8	4.5	ug/kg	1
Isopropylbenzene	98-82-8	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Methyl acetate	79-20-9	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260D	8.8	U	11	8.8	4.5	ug/kg	1
Methylcyclohexane	108-87-2	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Methylene chloride	75-09-2	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Styrene	100-42-5	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Tetrachloroethene	127-18-4	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Toluene	108-88-3	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25020-014**	
Description: **RI-SB-24 (8-10)**		Matrix: **Solid**	
Date Sampled: **06/24/2022 1030**	Project Name: **TAMP**	% Solids: **76.1**	**06/29/2022 2306**
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	06/30/2022 1855	JM1		46673

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**4.7**	**J**	**5.6**	4.5	**2.2**	**ug/kg**	**1**
Trichlorofluoromethane	75-69-4	8260D	4.5	U	5.6	4.5	2.2	ug/kg	1
Vinyl chloride	75-01-4	8260D	6.6	UL	11	6.6	3.4	ug/kg	1
Xylenes (total)	1330-20-7	8260D	8.8	U	11	8.8	4.5	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		102	79-119
Dibromofluoromethane		98	78-119
1,2-Dichloroethane-d4		102	71-136
Toluene-d8		107	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25020-015**	
Description: **RI-GW-01a (0-4)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1100**	Project Name: **TAMP**	% Solids: **83.8**	**06/29/2022 2306**
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/06/2022 0431	BPK	06/30/2022 1927	46576
2	3050B	6020B	10	07/06/2022 1822	BPK	06/30/2022 1927	46576

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**0.35**	**J**	**0.46**	0.37	**0.19**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**69**		**1.2**	0.58	**0.29**	**mg/kg**	**1**
Cadmium	7440-43-9	6020B	0.058	U	0.12	0.058	0.023	mg/kg	1
Chromium	**7440-47-3**	**6020B**	**7.5**	**J**	**12**	10	**5.1**	**mg/kg**	**2**
Lead	**7439-92-1**	**6020B**	**2.9**		**2.3**	1.3	**0.63**	**mg/kg**	**2**
Selenium	**7782-49-2**	**6020B**	**0.52**	**J**	**1.2**	0.87	**0.44**	**mg/kg**	**1**
Silver	7440-22-4	6020B	0.12	U	0.23	0.12	0.056	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25020-016**	
Description: **RI-GW-01D (0-4)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1040**	Project Name: **TAMP**	% Solids: **82.4**	**06/29/2022 2306**
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/06/2022 0439	BPK	06/30/2022 1927	46576
2	3050B	6020B	10	07/06/2022 1830	BPK	06/30/2022 1927	46576

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**0.40**	**J**	**0.42**	0.34	**0.17**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**41**		**1.1**	0.53	**0.26**	**mg/kg**	**1**
Cadmium	7440-43-9	6020B	0.053	U	0.11	0.053	0.021	mg/kg	1
Chromium	**7440-47-3**	**6020B**	**13**		**11**	9.4	**4.6**	**mg/kg**	**2**
Lead	**7439-92-1**	**6020B**	**3.2**		**2.1**	1.1	**0.57**	**mg/kg**	**2**
Selenium	**7782-49-2**	**6020B**	**1.3**		**1.1**	0.80	**0.39**	**mg/kg**	**1**
Silver	7440-22-4	6020B	0.11	U	0.21	0.11	0.050	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25020-017**	
Description: **RI-GW-01D (11-13)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1045**	Project Name: **TAMP**	% Solids: **86.1**	**06/29/2022 2306**
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/06/2022 0447	BPK	06/30/2022 1927	46576
2	3050B	6020B	10	07/06/2022 1837	BPK	06/30/2022 1927	46576

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**0.73**		**0.43**	0.34	**0.17**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**180**	**S**	**11**	5.3	**2.7**	**mg/kg**	**2**
Cadmium	**7440-43-9**	**6020B**	**0.066**	**J**	**0.11**	0.053	**0.022**	**mg/kg**	**1**
Chromium	**7440-47-3**	**6020B**	**17**		**11**	9.4	**4.8**	**mg/kg**	**2**
Lead	**7439-92-1**	**6020B**	**0.76**	**J**	**2.2**	1.2	**0.59**	**mg/kg**	**2**
Selenium	**7782-49-2**	**6020B**	**1.5**		**1.1**	0.80	**0.41**	**mg/kg**	**1**
Silver	7440-22-4	6020B	0.11	U	0.22	0.11	0.052	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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QC Summary

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46673-001
Batch: 46673
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	16	U	1	20	16	8.0	ug/kg	06/30/2022 0959
Benzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Bromodichloromethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Bromoform	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Bromomethane (Methyl bromide)	6.0	U	1	10	6.0	3.0	ug/kg	06/30/2022 0959
2-Butanone (MEK)	8.0	U	1	20	8.0	4.0	ug/kg	06/30/2022 0959
Carbon disulfide	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Carbon tetrachloride	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Chlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Chloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Chloroform	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Chloromethane (Methyl chloride)	6.0	U	1	10	6.0	3.0	ug/kg	06/30/2022 0959
Cyclohexane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,2-Dibromo-3-chloropropane (DBCP)	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Dibromochloromethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,2-Dibromoethane (EDB)	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,2-Dichlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,3-Dichlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,4-Dichlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Dichlorodifluoromethane	6.0	U	1	10	6.0	3.0	ug/kg	06/30/2022 0959
1,1-Dichloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,2-Dichloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,1-Dichloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
cis-1,2-Dichloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
trans-1,2-Dichloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,2-Dichloropropane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
cis-1,3-Dichloropropene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
trans-1,3-Dichloropropene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Ethylbenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
2-Hexanone	8.0	U	1	10	8.0	4.0	ug/kg	06/30/2022 0959
Isopropylbenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Methyl acetate	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Methyl tertiary butyl ether (MTBE)	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
4-Methyl-2-pentanone	8.0	U	1	10	8.0	4.0	ug/kg	06/30/2022 0959
Methylcyclohexane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Methylene chloride	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Styrene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,1,2,2-Tetrachloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Tetrachloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Toluene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,1,2-Trichloro-1,2,2-Trifluoroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,2,4-Trichlorobenzene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,1,1-Trichloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
1,1,2-Trichloroethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ46673-001
Batch: 46673
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Trichlorofluoromethane	4.0	U	1	5.0	4.0	2.0	ug/kg	06/30/2022 0959
Vinyl chloride	6.0	U	1	10	6.0	3.0	ug/kg	06/30/2022 0959
Xylenes (total)	8.0	U	1	10	8.0	4.0	ug/kg	06/30/2022 0959

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		108	79-119
Dibromofluoromethane		102	78-119
1,2-Dichloroethane-d4		107	71-136
Toluene-d8		105	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46673-002
Batch: 46673
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	110		1	109	36-164	06/30/2022 0936
Benzene	50	51		1	102	77-121	06/30/2022 0936
Bromodichloromethane	50	51		1	101	75-127	06/30/2022 0936
Bromoform	50	51		1	102	67-132	06/30/2022 0936
Bromomethane (Methyl bromide)	50	62		1	124	53-143	06/30/2022 0936
2-Butanone (MEK)	100	110		1	109	51-148	06/30/2022 0936
Carbon disulfide	50	51		1	102	63-132	06/30/2022 0936
Carbon tetrachloride	50	49		1	98	70-135	06/30/2022 0936
Chlorobenzene	50	50		1	100	79-120	06/30/2022 0936
Chloroethane	50	61		1	123	59-139	06/30/2022 0936
Chloroform	50	49		1	99	78-123	06/30/2022 0936
Chloromethane (Methyl chloride)	50	71	N	1	142	50-136	06/30/2022 0936
Cyclohexane	50	44		1	87	67-131	06/30/2022 0936
1,2-Dibromo-3-chloropropane (DBCP)	50	47		1	93	61-132	06/30/2022 0936
Dibromochloromethane	50	49		1	97	75-127	06/30/2022 0936
1,2-Dibromoethane (EDB)	50	50		1	100	78-122	06/30/2022 0936
1,2-Dichlorobenzene	50	47		1	95	78-121	06/30/2022 0936
1,3-Dichlorobenzene	50	50		1	99	77-121	06/30/2022 0936
1,4-Dichlorobenzene	50	50		1	99	75-120	06/30/2022 0936
Dichlorodifluoromethane	50	75	N	1	150	29-149	06/30/2022 0936
1,1-Dichloroethane	50	51		1	101	76-125	06/30/2022 0936
1,2-Dichloroethane	50	52		1	105	73-128	06/30/2022 0936
1,1-Dichloroethene	50	50		1	100	70-131	06/30/2022 0936
cis-1,2-Dichloroethene	50	49		1	99	77-123	06/30/2022 0936
trans-1,2-Dichloroethene	50	49		1	98	74-125	06/30/2022 0936
1,2-Dichloropropane	50	52		1	104	76-123	06/30/2022 0936
cis-1,3-Dichloropropene	50	51		1	103	74-126	06/30/2022 0936
trans-1,3-Dichloropropene	50	50		1	100	71-130	06/30/2022 0936
Ethylbenzene	50	51		1	101	76-122	06/30/2022 0936
2-Hexanone	100	100		1	100	53-145	06/30/2022 0936
Isopropylbenzene	50	48		1	97	68-134	06/30/2022 0936
Methyl acetate	50	47		1	94	53-144	06/30/2022 0936
Methyl tertiary butyl ether (MTBE)	50	47		1	93	73-125	06/30/2022 0936
4-Methyl-2-pentanone	100	100		1	100	65-135	06/30/2022 0936
Methylcyclohexane	50	51		1	101	66-133	06/30/2022 0936
Methylene chloride	50	51		1	102	70-128	06/30/2022 0936
Styrene	50	52		1	105	76-124	06/30/2022 0936
1,1,2,2-Tetrachloroethane	50	49		1	99	70-124	06/30/2022 0936
Tetrachloroethene	50	46		1	93	73-128	06/30/2022 0936
Toluene	50	46		1	91	77-121	06/30/2022 0936
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	49		1	99	66-136	06/30/2022 0936
1,2,4-Trichlorobenzene	50	46		1	93	67-129	06/30/2022 0936
1,1,1-Trichloroethane	50	49		1	98	73-130	06/30/2022 0936
1,1,2-Trichloroethane	50	49		1	98	78-121	06/30/2022 0936

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ46673-002
Batch: 46673
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	49		1	99	77-123	06/30/2022 0936
Trichlorofluoromethane	50	54		1	107	62-140	06/30/2022 0936
Vinyl chloride	50	72	N	1	143	56-135	06/30/2022 0936
Xylenes (total)	100	99		1	99	78-124	06/30/2022 0936

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		96	79-119
Dibromofluoromethane		96	78-119
1,2-Dichloroethane-d4		103	71-136
Toluene-d8		92	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ47149-001
Batch: 47149
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	07/06/2022 1020
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	07/06/2022 1020
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	07/06/2022 1020
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	07/06/2022 1020
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	07/06/2022 1020
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	07/06/2022 1020
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	07/06/2022 1020
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	07/06/2022 1020
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	07/06/2022 1020
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	07/06/2022 1020
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	07/06/2022 1020
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ47149-001
Batch: 47149
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	07/06/2022 1020

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		100	81-118
Bromofluorobenzene		91	85-114
Toluene-d8		95	89-112
Dibromofluoromethane		107	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ47149-002
Batch: 47149
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	120		1	124	39-160	07/06/2022 0916
Benzene	50	51		1	101	79-120	07/06/2022 0916
Bromodichloromethane	50	50		1	100	79-125	07/06/2022 0916
Bromoform	50	46		1	93	66-130	07/06/2022 0916
Bromomethane (Methyl bromide)	50	62		1	125	53-141	07/06/2022 0916
2-Butanone (MEK)	100	110		1	110	56-143	07/06/2022 0916
Carbon disulfide	50	55		1	110	64-133	07/06/2022 0916
Carbon tetrachloride	50	50		1	101	72-136	07/06/2022 0916
Chlorobenzene	50	47		1	94	82-118	07/06/2022 0916
Chloroethane	50	58		1	116	60-138	07/06/2022 0916
Chloroform	50	53		1	107	79-124	07/06/2022 0916
Chloromethane (Methyl chloride)	50	61		1	121	50-139	07/06/2022 0916
Cyclohexane	50	60		1	121	71-130	07/06/2022 0916
1,2-Dibromo-3-chloropropane (DBCP)	50	53		1	106	62-128	07/06/2022 0916
Dibromochloromethane	50	48		1	96	74-126	07/06/2022 0916
1,2-Dibromoethane (EDB)	50	49		1	97	77-121	07/06/2022 0916
1,2-Dichlorobenzene	50	49		1	99	80-119	07/06/2022 0916
1,3-Dichlorobenzene	50	46		1	92	80-119	07/06/2022 0916
1,4-Dichlorobenzene	50	46		1	92	79-118	07/06/2022 0916
Dichlorodifluoromethane	50	54		1	107	32-152	07/06/2022 0916
1,1-Dichloroethane	50	56		1	113	77-125	07/06/2022 0916
1,2-Dichloroethane	50	53		1	105	73-128	07/06/2022 0916
1,1-Dichloroethene	50	54		1	108	71-131	07/06/2022 0916
cis-1,2-Dichloroethene	50	52		1	105	78-123	07/06/2022 0916
trans-1,2-Dichloroethene	50	53		1	105	75-124	07/06/2022 0916
1,2-Dichloropropane	50	52		1	103	78-122	07/06/2022 0916
cis-1,3-Dichloropropene	50	53		1	106	75-124	07/06/2022 0916
trans-1,3-Dichloropropene	50	53		1	107	73-127	07/06/2022 0916
Ethylbenzene	50	48		1	96	79-121	07/06/2022 0916
2-Hexanone	100	100		1	104	57-139	07/06/2022 0916
Isopropylbenzene	50	51		1	102	72-131	07/06/2022 0916
Methyl acetate	50	63		1	126	56-136	07/06/2022 0916
Methyl tertiary butyl ether (MTBE)	50	57		1	113	71-124	07/06/2022 0916
4-Methyl-2-pentanone	100	110		1	111	67-130	07/06/2022 0916
Methylcyclohexane	50	50		1	100	72-132	07/06/2022 0916
Methylene chloride	50	56		1	112	74-124	07/06/2022 0916
Styrene	50	51		1	101	78-123	07/06/2022 0916
1,1,2,2-Tetrachloroethane	50	54		1	108	71-121	07/06/2022 0916
Tetrachloroethene	50	45		1	91	74-129	07/06/2022 0916
Toluene	50	50		1	101	80-121	07/06/2022 0916
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	52		1	104	70-136	07/06/2022 0916
1,2,4-Trichlorobenzene	50	47		1	93	69-130	07/06/2022 0916
1,1,1-Trichloroethane	50	50		1	101	74-131	07/06/2022 0916
1,1,2-Trichloroethane	50	49		1	99	80-119	07/06/2022 0916

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ47149-002
Batch: 47149
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	44		1	88	79-123	07/06/2022 0916
Trichlorofluoromethane	50	53		1	106	65-141	07/06/2022 0916
Vinyl chloride	50	62		1	125	58-137	07/06/2022 0916
Xylenes (total)	100	98		1	98	79-121	07/06/2022 0916

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		103	81-118
Bromofluorobenzene		97	85-114
Toluene-d8		97	89-112
Dibromofluoromethane		108	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MS

Sample ID: XF25020-002MS
Batch: 47149
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	ND	100	120		1	119	39-160	07/06/2022 2200
Benzene	ND	50	55		1	110	79-120	07/06/2022 2200
Bromodichloromethane	ND	50	52		1	104	79-125	07/06/2022 2200
Bromoform	ND	50	45		1	89	66-130	07/06/2022 2200
Bromomethane (Methyl bromide)	ND	50	70		1	139	53-141	07/06/2022 2200
2-Butanone (MEK)	ND	100	110		1	106	56-143	07/06/2022 2200
Carbon disulfide	ND	50	56		1	112	64-133	07/06/2022 2200
Carbon tetrachloride	ND	50	54		1	109	72-136	07/06/2022 2200
Chlorobenzene	ND	50	50		1	100	82-118	07/06/2022 2200
Chloroethane	ND	50	68		1	137	60-138	07/06/2022 2200
Chloroform	2.0	50	58		1	113	79-124	07/06/2022 2200
Chloromethane (Methyl chloride)	ND	50	71	N	1	143	50-139	07/06/2022 2200
Cyclohexane	ND	50	67	N	1	133	71-130	07/06/2022 2200
1,2-Dibromo-3-chloropropane (DBCP)	ND	50	50		1	100	62-128	07/06/2022 2200
Dibromochloromethane	ND	50	49		1	98	74-126	07/06/2022 2200
1,2-Dibromoethane (EDB)	ND	50	51		1	102	77-121	07/06/2022 2200
1,2-Dichlorobenzene	ND	50	49		1	99	80-119	07/06/2022 2200
1,3-Dichlorobenzene	ND	50	47		1	94	80-119	07/06/2022 2200
1,4-Dichlorobenzene	ND	50	47		1	94	79-118	07/06/2022 2200
Dichlorodifluoromethane	ND	50	58		1	116	32-152	07/06/2022 2200
1,1-Dichloroethane	15	50	76		1	122	77-125	07/06/2022 2200
1,2-Dichloroethane	3.4	50	57		1	106	73-128	07/06/2022 2200
1,1-Dichloroethene	33	50	89		1	113	71-131	07/06/2022 2200
cis-1,2-Dichloroethene	ND	50	55		1	109	78-123	07/06/2022 2200
trans-1,2-Dichloroethene	ND	50	56		1	113	75-124	07/06/2022 2200
1,2-Dichloropropane	ND	50	56		1	112	78-122	07/06/2022 2200
cis-1,3-Dichloropropene	ND	50	51		1	103	75-124	07/06/2022 2200
trans-1,3-Dichloropropene	ND	50	52		1	103	73-127	07/06/2022 2200
Ethylbenzene	ND	50	52		1	103	79-121	07/06/2022 2200
2-Hexanone	ND	100	110		1	109	57-139	07/06/2022 2200
Isopropylbenzene	ND	50	53		1	107	72-131	07/06/2022 2200
Methyl acetate	ND	50	49		1	98	56-136	07/06/2022 2200
Methyl tertiary butyl ether (MTBE)	ND	50	52		1	104	71-124	07/06/2022 2200
4-Methyl-2-pentanone	ND	100	110		1	108	67-130	07/06/2022 2200
Methylcyclohexane	ND	50	54		1	108	72-132	07/06/2022 2200
Methylene chloride	ND	50	55		1	111	74-124	07/06/2022 2200
Styrene	ND	50	53		1	107	78-123	07/06/2022 2200
1,1,2,2-Tetrachloroethane	ND	50	54		1	109	71-121	07/06/2022 2200
Tetrachloroethene	ND	50	48		1	95	74-129	07/06/2022 2200
Toluene	ND	50	55		1	109	80-121	07/06/2022 2200
1,1,2-Trichloro-1,2,2-Trifluoroethane	20	50	75		1	110	70-136	07/06/2022 2200
1,2,4-Trichlorobenzene	ND	50	43		1	87	69-130	07/06/2022 2200
1,1,1-Trichloroethane	2.4	50	58		1	111	74-131	07/06/2022 2200
1,1,2-Trichloroethane	ND	50	52		1	104	80-119	07/06/2022 2200

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LOD = Limit of Detection

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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

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P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MS

Sample ID: XF25020-002MS
Batch: 47149
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	1.6	50	49		1	94	79-123	07/06/2022 2200
Trichlorofluoromethane	0.77	50	60		1	119	65-141	07/06/2022 2200
Vinyl chloride	ND	50	76	N	1	153	58-137	07/06/2022 2200
Xylenes (total)	ND	100	100		1	104	79-121	07/06/2022 2200

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		103	81-118
Bromofluorobenzene		102	85-114
Toluene-d8		106	89-112
Dibromofluoromethane		112	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XF25020-002MD
Batch: 47149
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acetone	ND	100	110		1	110	8.2	39-160	20	07/06/2022 2224
Benzene	ND	50	55		1	109	0.47	79-120	20	07/06/2022 2224
Bromodichloromethane	ND	50	51		1	103	1.4	79-125	20	07/06/2022 2224
Bromoform	ND	50	44		1	89	0.94	66-130	20	07/06/2022 2224
Bromomethane (Methyl bromide)	ND	50	67		1	135	3.3	53-141	20	07/06/2022 2224
2-Butanone (MEK)	ND	100	110		1	106	0.040	56-143	20	07/06/2022 2224
Carbon disulfide	ND	50	55		1	110	1.0	64-133	20	07/06/2022 2224
Carbon tetrachloride	ND	50	54		1	107	1.2	72-136	20	07/06/2022 2224
Chlorobenzene	ND	50	50		1	100	0.83	82-118	20	07/06/2022 2224
Chloroethane	ND	50	66		1	132	3.3	60-138	20	07/06/2022 2224
Chloroform	2.0	50	57		1	110	2.5	79-124	20	07/06/2022 2224
Chloromethane (Methyl chloride)	ND	50	69		1	138	3.7	50-139	20	07/06/2022 2224
Cyclohexane	ND	50	65		1	130	2.0	71-130	20	07/06/2022 2224
1,2-Dibromo-3-chloropropane (DBCP)	ND	50	49		1	99	1.3	62-128	20	07/06/2022 2224
Dibromochloromethane	ND	50	49		1	97	0.26	74-126	20	07/06/2022 2224
1,2-Dibromoethane (EDB)	ND	50	50		1	101	0.85	77-121	20	07/06/2022 2224
1,2-Dichlorobenzene	ND	50	50		1	99	0.42	80-119	20	07/06/2022 2224
1,3-Dichlorobenzene	ND	50	47		1	95	0.98	80-119	20	07/06/2022 2224
1,4-Dichlorobenzene	ND	50	47		1	95	1.4	79-118	20	07/06/2022 2224
Dichlorodifluoromethane	ND	50	60		1	119	2.4	32-152	20	07/06/2022 2224
1,1-Dichloroethane	15	50	73		1	116	3.6	77-125	20	07/06/2022 2224
1,2-Dichloroethane	3.4	50	54		1	102	4.1	73-128	20	07/06/2022 2224
1,1-Dichloroethene	33	50	88		1	112	0.87	71-131	20	07/06/2022 2224
cis-1,2-Dichloroethene	ND	50	53		1	106	2.5	78-123	20	07/06/2022 2224
trans-1,2-Dichloroethene	ND	50	56		1	111	1.7	75-124	20	07/06/2022 2224
1,2-Dichloropropane	ND	50	55		1	110	2.4	78-122	20	07/06/2022 2224
cis-1,3-Dichloropropene	ND	50	51		1	102	1.2	75-124	20	07/06/2022 2224
trans-1,3-Dichloropropene	ND	50	52		1	104	1.1	73-127	20	07/06/2022 2224
Ethylbenzene	ND	50	52		1	103	0.14	79-121	20	07/06/2022 2224
2-Hexanone	ND	100	110		1	110	0.13	57-139	20	07/06/2022 2224
Isopropylbenzene	ND	50	54		1	107	0.39	72-131	20	07/06/2022 2224
Methyl acetate	ND	50	47		1	93	4.8	56-136	20	07/06/2022 2224
Methyl tertiary butyl ether (MTBE)	ND	50	52		1	104	0.12	71-124	20	07/06/2022 2224
4-Methyl-2-pentanone	ND	100	110		1	107	1.4	67-130	20	07/06/2022 2224
Methylcyclohexane	ND	50	54		1	108	0.57	72-132	20	07/06/2022 2224
Methylene chloride	ND	50	54		1	109	1.6	74-124	20	07/06/2022 2224
Styrene	ND	50	54		1	108	1.1	78-123	20	07/06/2022 2224
1,1,2,2-Tetrachloroethane	ND	50	54		1	109	0.23	71-121	20	07/06/2022 2224
Tetrachloroethene	ND	50	48		1	96	1.0	74-129	20	07/06/2022 2224
Toluene	ND	50	55		1	110	0.81	80-121	20	07/06/2022 2224
1,1,2-Trichloro-1,2,2-Trifluoroethane	20	50	77		1	114	2.1	70-136	20	07/06/2022 2224
1,2,4-Trichlorobenzene	ND	50	45		1	90	3.5	69-130	20	07/06/2022 2224
1,1,1-Trichloroethane	2.4	50	56		1	107	3.5	74-131	20	07/06/2022 2224
1,1,2-Trichloroethane	ND	50	52		1	104	0.64	80-119	20	07/06/2022 2224

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XF25020-002MD
Batch: 47149
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Trichloroethene	1.6	50	48		1	93	1.2	79-123	20	07/06/2022 2224
Trichlorofluoromethane	0.77	50	60		1	119	0.32	65-141	20	07/06/2022 2224
Vinyl chloride	ND	50	75	N	1	149	2.2	58-137	20	07/06/2022 2224
Xylenes (total)	ND	100	100		1	104	0.71	79-121	20	07/06/2022 2224

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		102	81-118
Bromofluorobenzene		102	85-114
Toluene-d8		106	89-112
Dibromofluoromethane		109	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ47363-001
Batch: 47363
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	07/07/2022 2227
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	07/07/2022 2227
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	07/07/2022 2227
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	07/07/2022 2227
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	07/07/2022 2227
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	07/07/2022 2227
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	07/07/2022 2227
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	07/07/2022 2227
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	07/07/2022 2227
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	07/07/2022 2227
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	07/07/2022 2227
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ47363-001
Batch: 47363
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2227

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		87	81-118
Bromofluorobenzene		92	85-114
Toluene-d8		92	89-112
Dibromofluoromethane		96	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ47363-002
Batch: 47363
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	94		1	94	39-160	07/07/2022 2011
Benzene	50	54		1	108	79-120	07/07/2022 2011
Bromodichloromethane	50	54		1	109	79-125	07/07/2022 2011
Bromoform	50	58		1	115	66-130	07/07/2022 2011
Bromomethane (Methyl bromide)	50	53		1	107	53-141	07/07/2022 2011
2-Butanone (MEK)	100	130		1	126	56-143	07/07/2022 2011
Carbon disulfide	50	49		1	97	64-133	07/07/2022 2011
Carbon tetrachloride	50	54		1	108	72-136	07/07/2022 2011
Chlorobenzene	50	57		1	114	82-118	07/07/2022 2011
Chloroethane	50	54		1	107	60-138	07/07/2022 2011
Chloroform	50	53		1	106	79-124	07/07/2022 2011
Chloromethane (Methyl chloride)	50	42		1	85	50-139	07/07/2022 2011
Cyclohexane	50	40		1	80	71-130	07/07/2022 2011
1,2-Dibromo-3-chloropropane (DBCP)	50	49		1	99	62-128	07/07/2022 2011
Dibromochloromethane	50	57		1	115	74-126	07/07/2022 2011
1,2-Dibromoethane (EDB)	50	57		1	114	77-121	07/07/2022 2011
1,2-Dichlorobenzene	50	58		1	115	80-119	07/07/2022 2011
1,3-Dichlorobenzene	50	58		1	116	80-119	07/07/2022 2011
1,4-Dichlorobenzene	50	57		1	115	79-118	07/07/2022 2011
Dichlorodifluoromethane	50	43		1	86	32-152	07/07/2022 2011
1,1-Dichloroethane	50	50		1	99	77-125	07/07/2022 2011
1,2-Dichloroethane	50	52		1	104	73-128	07/07/2022 2011
1,1-Dichloroethene	50	51		1	102	71-131	07/07/2022 2011
cis-1,2-Dichloroethene	50	55		1	110	78-123	07/07/2022 2011
trans-1,2-Dichloroethene	50	55		1	110	75-124	07/07/2022 2011
1,2-Dichloropropane	50	53		1	106	78-122	07/07/2022 2011
cis-1,3-Dichloropropene	50	55		1	111	75-124	07/07/2022 2011
trans-1,3-Dichloropropene	50	55		1	109	73-127	07/07/2022 2011
Ethylbenzene	50	58		1	116	79-121	07/07/2022 2011
2-Hexanone	100	98		1	98	57-139	07/07/2022 2011
Isopropylbenzene	50	59		1	118	72-131	07/07/2022 2011
Methyl acetate	50	52		1	105	56-136	07/07/2022 2011
Methyl tertiary butyl ether (MTBE)	50	52		1	104	71-124	07/07/2022 2011
4-Methyl-2-pentanone	100	99		1	99	67-130	07/07/2022 2011
Methylcyclohexane	50	54		1	108	72-132	07/07/2022 2011
Methylene chloride	50	49		1	99	74-124	07/07/2022 2011
Styrene	50	58		1	116	78-123	07/07/2022 2011
1,1,2,2-Tetrachloroethane	50	55		1	110	71-121	07/07/2022 2011
Tetrachloroethene	50	60		1	120	74-129	07/07/2022 2011
Toluene	50	55		1	111	80-121	07/07/2022 2011
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	49		1	99	70-136	07/07/2022 2011
1,2,4-Trichlorobenzene	50	61		1	123	69-130	07/07/2022 2011
1,1,1-Trichloroethane	50	54		1	108	74-131	07/07/2022 2011
1,1,2-Trichloroethane	50	56		1	113	80-119	07/07/2022 2011

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ47363-002
Batch: 47363
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	58		1	115	79-123	07/07/2022 2011
Trichlorofluoromethane	50	51		1	102	65-141	07/07/2022 2011
Vinyl chloride	50	52		1	104	58-137	07/07/2022 2011
Xylenes (total)	100	110		1	115	79-121	07/07/2022 2011

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		106	81-118
Bromofluorobenzene		106	85-114
Toluene-d8		111	89-112
Dibromofluoromethane		113	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ47368-001
Batch: 47368
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	07/07/2022 2243
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	07/07/2022 2243
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	07/07/2022 2243
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	07/07/2022 2243
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	07/07/2022 2243
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	07/07/2022 2243
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	07/07/2022 2243
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	07/07/2022 2243
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	07/07/2022 2243
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	07/07/2022 2243
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	07/07/2022 2243
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ47368-001
Batch: 47368
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	07/07/2022 2243

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		102	81-118
Bromofluorobenzene		106	85-114
Toluene-d8		104	89-112
Dibromofluoromethane		106	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ47368-002
Batch: 47368
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	94		1	94	39-160	07/07/2022 1940
Benzene	50	48		1	95	79-120	07/07/2022 1940
Bromodichloromethane	50	50		1	101	79-125	07/07/2022 1940
Bromoform	50	54		1	108	66-130	07/07/2022 1940
Bromomethane (Methyl bromide)	50	48		1	97	53-141	07/07/2022 1940
2-Butanone (MEK)	100	100		1	103	56-143	07/07/2022 1940
Carbon disulfide	50	51		1	101	64-133	07/07/2022 1940
Carbon tetrachloride	50	54		1	107	72-136	07/07/2022 1940
Chlorobenzene	50	46		1	92	82-118	07/07/2022 1940
Chloroethane	50	47		1	93	60-138	07/07/2022 1940
Chloroform	50	47		1	94	79-124	07/07/2022 1940
Chloromethane (Methyl chloride)	50	48		1	95	50-139	07/07/2022 1940
Cyclohexane	50	46		1	93	71-130	07/07/2022 1940
1,2-Dibromo-3-chloropropane (DBCP)	50	63		1	126	62-128	07/07/2022 1940
Dibromochloromethane	50	45		1	90	74-126	07/07/2022 1940
1,2-Dibromoethane (EDB)	50	50		1	100	77-121	07/07/2022 1940
1,2-Dichlorobenzene	50	48		1	96	80-119	07/07/2022 1940
1,3-Dichlorobenzene	50	48		1	97	80-119	07/07/2022 1940
1,4-Dichlorobenzene	50	45		1	91	79-118	07/07/2022 1940
Dichlorodifluoromethane	50	50		1	100	32-152	07/07/2022 1940
1,1-Dichloroethane	50	48		1	95	77-125	07/07/2022 1940
1,2-Dichloroethane	50	49		1	98	73-128	07/07/2022 1940
1,1-Dichloroethene	50	50		1	100	71-131	07/07/2022 1940
cis-1,2-Dichloroethene	50	48		1	97	78-123	07/07/2022 1940
trans-1,2-Dichloroethene	50	48		1	95	75-124	07/07/2022 1940
1,2-Dichloropropane	50	47		1	94	78-122	07/07/2022 1940
cis-1,3-Dichloropropene	50	47		1	94	75-124	07/07/2022 1940
trans-1,3-Dichloropropene	50	46		1	91	73-127	07/07/2022 1940
Ethylbenzene	50	48		1	95	79-121	07/07/2022 1940
2-Hexanone	100	87		1	87	57-139	07/07/2022 1940
Isopropylbenzene	50	49		1	99	72-131	07/07/2022 1940
Methyl acetate	50	47		1	94	56-136	07/07/2022 1940
Methyl tertiary butyl ether (MTBE)	50	49		1	97	71-124	07/07/2022 1940
4-Methyl-2-pentanone	100	98		1	98	67-130	07/07/2022 1940
Methylcyclohexane	50	50		1	99	72-132	07/07/2022 1940
Methylene chloride	50	46		1	93	74-124	07/07/2022 1940
Styrene	50	51		1	101	78-123	07/07/2022 1940
1,1,2,2-Tetrachloroethane	50	49		1	97	71-121	07/07/2022 1940
Tetrachloroethene	50	47		1	95	74-129	07/07/2022 1940
Toluene	50	48		1	95	80-121	07/07/2022 1940
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	51		1	102	70-136	07/07/2022 1940
1,2,4-Trichlorobenzene	50	51		1	102	69-130	07/07/2022 1940
1,1,1-Trichloroethane	50	48		1	97	74-131	07/07/2022 1940
1,1,2-Trichloroethane	50	48		1	95	80-119	07/07/2022 1940

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ47368-002
Batch: 47368
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	49		1	99	79-123	07/07/2022 1940
Trichlorofluoromethane	50	51		1	102	65-141	07/07/2022 1940
Vinyl chloride	50	50		1	100	58-137	07/07/2022 1940
Xylenes (total)	100	97		1	97	79-121	07/07/2022 1940

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		89	81-118
Bromofluorobenzene		93	85-114
Toluene-d8		90	89-112
Dibromofluoromethane		92	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MS

Sample ID: XF25020-002MS
Batch: 47368
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	ND	100	94		1	94	39-160	07/08/2022 0547
Benzene	ND	50	53		1	107	79-120	07/08/2022 0547
Bromodichloromethane	ND	50	51		1	101	79-125	07/08/2022 0547
Bromoform	ND	50	44		1	89	66-130	07/08/2022 0547
Bromomethane (Methyl bromide)	ND	50	51		1	103	53-141	07/08/2022 0547
2-Butanone (MEK)	ND	100	97		1	97	56-143	07/08/2022 0547
Carbon disulfide	ND	50	53		1	106	64-133	07/08/2022 0547
Carbon tetrachloride	ND	50	55		1	110	72-136	07/08/2022 0547
Chlorobenzene	ND	50	51		1	102	82-118	07/08/2022 0547
Chloroethane	ND	50	52		1	105	60-138	07/08/2022 0547
Chloroform	1.7	50	53		1	102	79-124	07/08/2022 0547
Chloromethane (Methyl chloride)	ND	50	54		1	109	50-139	07/08/2022 0547
Cyclohexane	ND	50	52		1	104	71-130	07/08/2022 0547
1,2-Dibromo-3-chloropropane (DBCP)	ND	50	52		1	104	62-128	07/08/2022 0547
Dibromochloromethane	ND	50	41		1	83	74-126	07/08/2022 0547
1,2-Dibromoethane (EDB)	ND	50	53		1	105	77-121	07/08/2022 0547
1,2-Dichlorobenzene	ND	50	51		1	101	80-119	07/08/2022 0547
1,3-Dichlorobenzene	ND	50	52		1	104	80-119	07/08/2022 0547
1,4-Dichlorobenzene	ND	50	48		1	97	79-118	07/08/2022 0547
Dichlorodifluoromethane	ND	50	54		1	107	32-152	07/08/2022 0547
1,1-Dichloroethane	13	50	65		1	104	77-125	07/08/2022 0547
1,2-Dichloroethane	3.2	50	55		1	104	73-128	07/08/2022 0547
1,1-Dichloroethene	32	50	87		1	110	71-131	07/08/2022 0547
cis-1,2-Dichloroethene	ND	50	54		1	108	78-123	07/08/2022 0547
trans-1,2-Dichloroethene	ND	50	53		1	106	75-124	07/08/2022 0547
1,2-Dichloropropane	ND	50	51		1	103	78-122	07/08/2022 0547
cis-1,3-Dichloropropene	ND	50	47		1	95	75-124	07/08/2022 0547
trans-1,3-Dichloropropene	ND	50	44		1	88	73-127	07/08/2022 0547
Ethylbenzene	ND	50	54		1	109	79-121	07/08/2022 0547
2-Hexanone	ND	100	94		1	94	57-139	07/08/2022 0547
Isopropylbenzene	ND	50	56		1	112	72-131	07/08/2022 0547
Methyl acetate	ND	50	41		1	81	56-136	07/08/2022 0547
Methyl tertiary butyl ether (MTBE)	ND	50	49		1	98	71-124	07/08/2022 0547
4-Methyl-2-pentanone	ND	100	100		1	102	67-130	07/08/2022 0547
Methylcyclohexane	ND	50	57		1	113	72-132	07/08/2022 0547
Methylene chloride	ND	50	50		1	101	74-124	07/08/2022 0547
Styrene	ND	50	52		1	105	78-123	07/08/2022 0547
1,1,2,2-Tetrachloroethane	ND	50	50		1	100	71-121	07/08/2022 0547
Tetrachloroethene	ND	50	53		1	107	74-129	07/08/2022 0547
Toluene	ND	50	53		1	107	80-121	07/08/2022 0547
1,1,2-Trichloro-1,2,2-Trifluoroethane	20	50	76		1	113	70-136	07/08/2022 0547
1,2,4-Trichlorobenzene	ND	50	50		1	101	69-130	07/08/2022 0547
1,1,1-Trichloroethane	2.4	50	56		1	107	74-131	07/08/2022 0547
1,1,2-Trichloroethane	ND	50	51		1	103	80-119	07/08/2022 0547

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MS

Sample ID: XF25020-002MS
Batch: 47368
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	1.8	50	57		1	111	79-123	07/08/2022 0547
Trichlorofluoromethane	0.80	50	60		1	118	65-141	07/08/2022 0547
Vinyl chloride	ND	50	56		1	111	58-137	07/08/2022 0547
Xylenes (total)	ND	100	110		1	108	79-121	07/08/2022 0547

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		103	81-118
Bromofluorobenzene	N	115	85-114
Toluene-d8		110	89-112
Dibromofluoromethane		107	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XF25020-002MD
Batch: 47368
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acetone	ND	100	91		1	91	2.6	39-160	20	07/08/2022 0611
Benzene	ND	50	55		1	110	3.0	79-120	20	07/08/2022 0611
Bromodichloromethane	ND	50	54		1	108	6.6	79-125	20	07/08/2022 0611
Bromoform	ND	50	50		1	99	11	66-130	20	07/08/2022 0611
Bromomethane (Methyl bromide)	ND	50	55		1	109	6.1	53-141	20	07/08/2022 0611
2-Butanone (MEK)	ND	100	100		1	102	5.3	56-143	20	07/08/2022 0611
Carbon disulfide	ND	50	57		1	114	6.7	64-133	20	07/08/2022 0611
Carbon tetrachloride	ND	50	61		1	122	11	72-136	20	07/08/2022 0611
Chlorobenzene	ND	50	53		1	106	3.6	82-118	20	07/08/2022 0611
Chloroethane	ND	50	54		1	108	3.0	60-138	20	07/08/2022 0611
Chloroform	1.7	50	55		1	107	4.4	79-124	20	07/08/2022 0611
Chloromethane (Methyl chloride)	ND	50	55		1	111	1.4	50-139	20	07/08/2022 0611
Cyclohexane	ND	50	54		1	108	3.8	71-130	20	07/08/2022 0611
1,2-Dibromo-3-chloropropane (DBCP)	ND	50	58		1	115	11	62-128	20	07/08/2022 0611
Dibromochloromethane	ND	50	45		1	91	9.0	74-126	20	07/08/2022 0611
1,2-Dibromoethane (EDB)	ND	50	55		1	110	4.6	77-121	20	07/08/2022 0611
1,2-Dichlorobenzene	ND	50	53		1	106	4.7	80-119	20	07/08/2022 0611
1,3-Dichlorobenzene	ND	50	55		1	109	4.3	80-119	20	07/08/2022 0611
1,4-Dichlorobenzene	ND	50	51		1	102	5.8	79-118	20	07/08/2022 0611
Dichlorodifluoromethane	ND	50	59		1	118	9.1	32-152	20	07/08/2022 0611
1,1-Dichloroethane	13	50	68		1	108	3.3	77-125	20	07/08/2022 0611
1,2-Dichloroethane	3.2	50	56		1	106	2.2	73-128	20	07/08/2022 0611
1,1-Dichloroethene	32	50	90		1	116	3.1	71-131	20	07/08/2022 0611
cis-1,2-Dichloroethene	ND	50	56		1	112	3.7	78-123	20	07/08/2022 0611
trans-1,2-Dichloroethene	ND	50	55		1	111	4.6	75-124	20	07/08/2022 0611
1,2-Dichloropropane	ND	50	53		1	106	2.8	78-122	20	07/08/2022 0611
cis-1,3-Dichloropropene	ND	50	49		1	99	4.4	75-124	20	07/08/2022 0611
trans-1,3-Dichloropropene	ND	50	46		1	93	5.9	73-127	20	07/08/2022 0611
Ethylbenzene	ND	50	57		1	113	4.0	79-121	20	07/08/2022 0611
2-Hexanone	ND	100	97		1	97	3.0	57-139	20	07/08/2022 0611
Isopropylbenzene	ND	50	58		1	116	3.9	72-131	20	07/08/2022 0611
Methyl acetate	ND	50	41		1	82	1.2	56-136	20	07/08/2022 0611
Methyl tertiary butyl ether (MTBE)	ND	50	52		1	103	5.6	71-124	20	07/08/2022 0611
4-Methyl-2-pentanone	ND	100	100		1	103	1.2	67-130	20	07/08/2022 0611
Methylcyclohexane	ND	50	58		1	117	2.8	72-132	20	07/08/2022 0611
Methylene chloride	ND	50	53		1	106	4.8	74-124	20	07/08/2022 0611
Styrene	ND	50	54		1	108	3.0	78-123	20	07/08/2022 0611
1,1,2,2-Tetrachloroethane	ND	50	53		1	106	5.7	71-121	20	07/08/2022 0611
Tetrachloroethene	ND	50	56		1	112	4.5	74-129	20	07/08/2022 0611
Toluene	ND	50	56		1	112	4.5	80-121	20	07/08/2022 0611
1,1,2-Trichloro-1,2,2-Trifluoroethane	20	50	79		1	118	3.1	70-136	20	07/08/2022 0611
1,2,4-Trichlorobenzene	ND	50	53		1	107	5.8	69-130	20	07/08/2022 0611
1,1,1-Trichloroethane	2.4	50	60		1	114	6.7	74-131	20	07/08/2022 0611
1,1,2-Trichloroethane	ND	50	53		1	107	3.8	80-119	20	07/08/2022 0611

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XF25020-002MD
Batch: 47368
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Trichloroethene	1.8	50	59		1	113	2.5	79-123	20	07/08/2022 0611
Trichlorofluoromethane	0.80	50	62		1	123	4.7	65-141	20	07/08/2022 0611
Vinyl chloride	ND	50	58		1	115	3.4	58-137	20	07/08/2022 0611
Xylenes (total)	ND	100	110		1	112	4.4	79-121	20	07/08/2022 0611

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		100	81-118
Bromofluorobenzene		111	85-114
Toluene-d8		108	89-112
Dibromofluoromethane		107	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ47500-001
Batch: 47500
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	07/09/2022 1508

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		106	81-118
Bromofluorobenzene		107	85-114
Toluene-d8		104	89-112
Dibromofluoromethane		105	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ47500-002
Batch: 47500
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
cis-1,2-Dichloroethene	50	54		1	109	78-123	07/09/2022 1404

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		93	81-118
Bromofluorobenzene		101	85-114
Toluene-d8		92	89-112
Dibromofluoromethane		96	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - MB

Sample ID: XQ46576-001
Batch: 46576
Analytical Method: 6020B

Matrix: Solid
Prep Method: 3050B
Prep Date: 06/30/2022 1927

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Arsenic	0.40	U	1	0.50	0.40	0.20	mg/kg	07/06/2022 0230
Barium	0.63	U	1	1.3	0.63	0.31	mg/kg	07/06/2022 0230
Cadmium	0.063	U	1	0.13	0.063	0.025	mg/kg	07/06/2022 0230
Chromium	1.1	U	1	1.3	1.1	0.55	mg/kg	07/06/2022 0230
Lead	0.14	U	1	0.25	0.14	0.068	mg/kg	07/06/2022 0230
Selenium	0.95	U	1	1.3	0.95	0.47	mg/kg	07/06/2022 0230
Silver	0.13	U	1	0.25	0.13	0.060	mg/kg	07/06/2022 0230

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - LCS

Sample ID: XQ46576-002
Batch: 46576
Analytical Method: 6020B

Matrix: Solid
Prep Method: 3050B
Prep Date: 06/30/2022 1927

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Arsenic	50	49		1	98	82-118	07/06/2022 0237
Barium	50	52		1	104	86-116	07/06/2022 0237
Cadmium	50	52		1	104	84-116	07/06/2022 0237
Chromium	50	55		1	109	83-119	07/06/2022 0237
Lead	50	55		1	111	84-118	07/06/2022 0237
Selenium	50	42		1	85	80-119	07/06/2022 0237
Silver	50	55		2	111	83-118	07/06/2022 0245

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - MS

Sample ID: XF25020-017MS
Batch: 46576
Analytical Method: 6020B

Matrix: Solid
Prep Method: 3050B
Prep Date: 06/30/2022 1927

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Arsenic	0.73	58	58		1	99	82-118	07/06/2022 0454
Barium	180	58	240		10	103	86-116	07/06/2022 1900
Cadmium	0.066	58	59		1	101	84-116	07/06/2022 0454
Chromium	17	58	77		10	103	83-119	07/06/2022 1900
Lead	0.76	58	59		10	101	84-118	07/06/2022 1900
Selenium	1.5	58	51		1	85	80-119	07/06/2022 0454
Silver	ND	58	62		1	108	83-118	07/06/2022 0454

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - MSD

Sample ID: XF25020-017MD
Batch: 46576
Analytical Method: 6020B

Matrix: Solid
Prep Method: 3050B
Prep Date: 06/30/2022 1927

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Arsenic	0.73	53	55		1	102	5.3	82-118	20	07/06/2022 0502
Barium	180	53	260	N	10	152	8.5	86-116	20	07/06/2022 1908
Cadmium	0.066	53	55		1	103	6.8	84-116	20	07/06/2022 0502
Chromium	17	53	69		10	97	11	83-119	20	07/06/2022 1908
Lead	0.76	53	52		10	97	13	84-118	20	07/06/2022 1908
Selenium	1.5	53	47		1	87	6.6	80-119	20	07/06/2022 0502
Silver	ND	53	58		1	110	6.8	83-118	20	07/06/2022 0502

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Chain of Custody
and
Miscellaneous Documents

Pace Analytical®

PACE ANALYTICAL SERVICES, LLC
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.pacelabs.com

Number 119721

Client: Terrasan Consultants	Report to Contact: Ethan.Dinwiddie@Terrasan.com	Telephone No. / E-mail:	Quote No.: 25322
Address: 2401 Brentwood Rd, Suite 107	Sampler's Signature: X [signature]	Analysis (Attach list if more space is needed)	Page 1 of 2
City: Raleigh State: NC Zip Code: 27604	Printed Name: Ethan Dinwiddie		XF25020
Project Name: TAMP			CSD
Project No.: 7021P145 P.O. No.:			

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	Grab/Composite	Matrix: Aqueous	Solid	Non-Aqueous	No of Containers by Preservative Type: Unpres.	H2SO4	HNO3	HCl	NaOH	5035 Kit	Acid Filtered	VOCs 8260	Remarks / Cooler I.D.
RI-GW-01	6/23	1250	G	X						3				X	
* RI-GW-02	↓	1300	G	X						3				X	
RI-GW-04	↓	1610	G	X						3				X	
RI-GW-05	6/24	940	G	X						3				X	
RI-GW-06	↓	1440	G	X						3				X	
RI-GW-07	↓	1500	G	X						3				X	
RI-GW-08	↓	1530	G	X						3				X	
DUP-GW-01	6/23	—	G	X						3				X	
MS/MSD-GW-01	6/23	1255	G	X						6				X	Parent is RI-GW-02
TB-06	6/23	—	G	X						2				X	

Turn Around Time Required (Prior lab approval required for expedited MT.): ☒ Standard ☐ Rush (Specify)

Sample Disposal: ☐ Return to Client ☒ Disposal by Lab

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☒ Unknown

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished by: [signature]	6/24	2000	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by: FedEx	6-25-22	0845	4. Laboratory received by: [signature]	6-25-22	0845

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on ice (Circle) ☒ Yes No ice Pack
Receipt Temp. 4.4 °C
Temp Blank ☒ Y ☐ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME603N2-01

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www.pacelabs.com

Number 133757

Client: Terracon
Address: 2401 Brentwood Rd, Suite 107
City: Raleigh | State: NC | Zip Code: 27604
Project Name: TAMP
Project No.: 7021P145
P.O. No.:

Report to Contact: Ethan.Dinwiddie@Terracon.com
Sampler's Signature: X [signature]
Printed Name: Ethan Dinwiddie

Telephone No. / E-mail: ←
Analysis (Attach list if more space is needed)

Quote No.: 25322
Page 2 of 2
XF25020
CSD

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	Grab/Comp	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	No of Containers by Preservative Type: Liquid	HCl	NaOH	5035 Kit	Field Filtered	VOCs 8260	RCRA 3 Metals	TOC Walkley Black	Remarks / Cooler I.D.
FB-02	6/23	1115	G	X					3			X			
FB-03	6/24	935	G	X					3			X			
EB-03	6/24	930	G	X					3			X			
RI-SB-24 (0-4)	6/24	1025	G		X		1			1		X		SVOA/RCRA MTL MS/MSD	
RI-SB-24 (8-10)	6/24	1030	G		X		1			1		X			
RI-GW-01a (0-4)	6/23	1100	C		X		1						X		
RI-GW-01D (0-4)	6/23	1040	C		X		1						X		
TOC MS/MSD RI-GW-01D (11-13)	6/23	1045	C		X		1							X	MS/MSD
MS/MSD-SB-04	6/23	1050	C		X		4						X	X	

Turn Around Time Required (Prior lab approval required for expedited TAT.): ☒ Standard ☐ Rush (Specify)

Sample Disposal: ☐ Return to Client ☒ Disposal by Lab

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☒ Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by [signature]	6/24	2000	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by FedEx	6-25-22	0845	4. Laboratory Received by [signature]	6-25-22	0845

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Circle) Yes No Ice Pack
Receipt Temp. 4.4 °C
Temp Blank ☒ Y ☐ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME003N2-01

PaceAnalytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WC01

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: TERRACON Cooler Inspected by/date: TEC / 06/25/2022 Lot #: XF25020

Means of receipt: ☐ Pace ☐ Client ☐ UPS ☑ FedEx ☐ Other: _____

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: 22-1253

4.4 / 4.4 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 6 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☑ Yes	☐ No	☐ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? _____
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☑ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote # _____

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA _____ were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA _____ were received with bubbles >6 mm in diameter.

Samples(s) NA _____ were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: TEC Date: 06/25/2022

Comments:

Report of Analysis

Terracon Consultants, Inc.
2401 Brentwood Road
Suite 107 I
Raleigh, NC 27604
Attention: Ethan Dinwiddie

Project Name: TAMP

Project Number: 7021P145

Lot Number:**XF25016**

Date Completed:07/20/2022

07/25/2022 11:08 PM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.
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Case Narrative
Terracon Consultants, Inc.
Lot Number: XF25016

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Additionally, the DoD QSM version 5.3 has been followed for these samples. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs, the DoD QSM, or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

Where applicable, all soil sample results (including LOQ and DL if requested) are corrected for dry weight unless flagged with a "W" qualifier.

SVOA 8270E
The initial calibration verification (ICV) associated with sample XF25016-012 (RI-GW-24 (0-4)) exceeded DOD control criteria of 80-120 for analytes: Caprolactam (122%), 4-Chloroaniline (123%), 2-Nitroaniline (121%). The data has been reported.

The following sample XF25016-012 (RI-GW-24 (0-4)) was diluted due to the nature of the sample matrix. The LOQ has been elevated to reflect the dilution.

The MS/MSD for batch 47328 and parent sample XF25016-012 (RI-GW-24 (0-4)), recovered outside control limits for multiple analytes. The associated LCS passed acceptance criteria.

Metals 6020B
The MS/MSD for batch 46576 and parent sample XF25016-012 (RI-GW-24 (0-4)), recovered outside control limits for Barium. The associated LCS passed acceptance criteria.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Sample Summary

Terracon Consultants, Inc.

Lot Number: XF25016

Project Name: TAMP

Project Number: 7021P145

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	RI-GW-02 (0-4)	Solid	06/23/2022 1235	06/25/2022
002	RI-GW-02 (14-16)	Solid	06/23/2022 1240	06/25/2022
003	RI-GW-03 (0-6)	Solid	06/23/2022 1405	06/25/2022
004	RI-GW-04 (0-6)	Solid	06/23/2022 1530	06/25/2022
005	RI-GW-04 (12-15)	Solid	06/23/2022 1600	06/25/2022
006	RI-GW-05 (0-4)	Solid	06/23/2022 1715	06/25/2022
007	RI-GW-05 (8-12)	Solid	06/23/2022 1715	06/25/2022
008	RI-GW-06 (0-6)	Solid	06/24/2022 1050	06/25/2022
009	RI-GW-06 (6-8)	Solid	06/24/2022 1050	06/25/2022
010	RI-GW-07 (0-4)	Solid	06/24/2022 1225	06/25/2022
011	RI-GW-07 (14-16)	Solid	06/24/2022 1235	06/25/2022
012	RI-GW-24 (0-4)	Solid	06/24/2022 1035	06/25/2022

(12 samples)

Detection Summary
Terracon Consultants, Inc.
Lot Number: XF25016
Project Name: TAMP
Project Number: 7021P145

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	RI-GW-02 (0-4)	Solid	Arsenic	6020B	2.0		mg/kg	6
001	RI-GW-02 (0-4)	Solid	Barium	6020B	10		mg/kg	6
001	RI-GW-02 (0-4)	Solid	Cadmium	6020B	0.028	J	mg/kg	6
001	RI-GW-02 (0-4)	Solid	Chromium	6020B	27		mg/kg	6
001	RI-GW-02 (0-4)	Solid	Lead	6020B	11		mg/kg	6
001	RI-GW-02 (0-4)	Solid	Selenium	6020B	0.50	J	mg/kg	6
003	RI-GW-03 (0-6)	Solid	Arsenic	6020B	1.2		mg/kg	8
003	RI-GW-03 (0-6)	Solid	Barium	6020B	100		mg/kg	8
003	RI-GW-03 (0-6)	Solid	Chromium	6020B	7.8		mg/kg	8
003	RI-GW-03 (0-6)	Solid	Lead	6020B	4.2		mg/kg	8
003	RI-GW-03 (0-6)	Solid	Selenium	6020B	2.7		mg/kg	8
004	RI-GW-04 (0-6)	Solid	Arsenic	6020B	2.0		mg/kg	9
004	RI-GW-04 (0-6)	Solid	Barium	6020B	45		mg/kg	9
004	RI-GW-04 (0-6)	Solid	Chromium	6020B	22		mg/kg	9
004	RI-GW-04 (0-6)	Solid	Lead	6020B	7.0		mg/kg	9
004	RI-GW-04 (0-6)	Solid	Selenium	6020B	0.79	J	mg/kg	9
005	RI-GW-04 (12-15)	Solid	TOC	Walkley-Black	360		mg/kg	10
006	RI-GW-05 (0-4)	Solid	Arsenic	6020B	1.4		mg/kg	11
006	RI-GW-05 (0-4)	Solid	Barium	6020B	83		mg/kg	11
006	RI-GW-05 (0-4)	Solid	Chromium	6020B	35		mg/kg	11
006	RI-GW-05 (0-4)	Solid	Lead	6020B	5.4		mg/kg	11
006	RI-GW-05 (0-4)	Solid	Selenium	6020B	0.92	J	mg/kg	11
007	RI-GW-05 (8-12)	Solid	TOC	Walkley-Black	3000		mg/kg	12
008	RI-GW-06 (0-6)	Solid	Arsenic	6020B	2.7		mg/kg	13
008	RI-GW-06 (0-6)	Solid	Barium	6020B	64		mg/kg	13
008	RI-GW-06 (0-6)	Solid	Cadmium	6020B	0.12		mg/kg	13
008	RI-GW-06 (0-6)	Solid	Chromium	6020B	20		mg/kg	13
008	RI-GW-06 (0-6)	Solid	Lead	6020B	10		mg/kg	13
008	RI-GW-06 (0-6)	Solid	Selenium	6020B	1.1		mg/kg	13
009	RI-GW-06 (6-8)	Solid	TOC	Walkley-Black	2000		mg/kg	14
010	RI-GW-07 (0-4)	Solid	Arsenic	6020B	1.3		mg/kg	15
010	RI-GW-07 (0-4)	Solid	Barium	6020B	58		mg/kg	15
010	RI-GW-07 (0-4)	Solid	Cadmium	6020B	0.051	J	mg/kg	15
010	RI-GW-07 (0-4)	Solid	Chromium	6020B	38		mg/kg	15
010	RI-GW-07 (0-4)	Solid	Lead	6020B	7.6		mg/kg	15
010	RI-GW-07 (0-4)	Solid	Selenium	6020B	0.74	J	mg/kg	15
011	RI-GW-07 (14-16)	Solid	TOC	Walkley-Black	510		mg/kg	16
012	RI-GW-24 (0-4)	Solid	Benzo(b)fluoranthene	8270E	0.02	J	mg/kg	17
012	RI-GW-24 (0-4)	Solid	Benzo(g,h,i)perylene	8270E	0.017	JS	mg/kg	17
012	RI-GW-24 (0-4)	Solid	Phenanthrene	8270E	0.021	J	mg/kg	18
012	RI-GW-24 (0-4)	Solid	Arsenic	6020B	0.97		mg/kg	19
012	RI-GW-24 (0-4)	Solid	Barium	6020B	160	S	mg/kg	19
012	RI-GW-24 (0-4)	Solid	Cadmium	6020B	0.096	J	mg/kg	19

Detection Summary (Continued)

Lot Number: XF25016

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
012	RI-GW-24 (0-4)	Solid	Chromium	6020B	13		mg/kg	19
012	RI-GW-24 (0-4)	Solid	Lead	6020B	4.2		mg/kg	19
012	RI-GW-24 (0-4)	Solid	Selenium	6020B	1.3		mg/kg	19

(46 detections)

ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25016-001**	
Description: **RI-GW-02 (0-4)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1235**	Project Name: **TAMP**	% Solids: **88.7**	**06/28/2022 2303**
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/06/2022 0252	BPK	06/30/2022 1927	46576

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**2.0**		**0.53**	0.42	**0.21**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**10**		**1.4**	0.67	**0.33**	**mg/kg**	**1**
Cadmium	**7440-43-9**	**6020B**	**0.028**	**J**	**0.14**	0.067	**0.026**	**mg/kg**	**1**
Chromium	**7440-47-3**	**6020B**	**27**		**1.4**	1.2	**0.59**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**11**		**0.26**	0.14	**0.072**	**mg/kg**	**1**
Selenium	**7782-49-2**	**6020B**	**0.50**	**J**	**1.4**	1.0	**0.50**	**mg/kg**	**1**
Silver	7440-22-4	6020B	0.13	U	0.26	0.13	0.063	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

Inorganic non-metals

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25016-002**	
Description: **RI-GW-02 (14-16)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1240**	Project Name: **TAMP**	% Solids: **71.8**	**06/28/2022 2303**
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(TOC) Walkley-Black	1	07/11/2022 1900	DMA		47616

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
TOC		Walkley-Black	100	U	200	100	100	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25016-003**	
Description: **RI-GW-03 (0-6)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1405**	Project Name: **TAMP**	% Solids: **82.1**	**06/28/2022 2303**
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/06/2022 0300	BPK	06/30/2022 1927	46576
2	3050B	6020B	10	07/06/2022 1729	BPK	06/30/2022 1927	46576
3	3050B	6020B	5	07/18/2022 1543	BNW	06/30/2022 1927	46576

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**1.2**		**0.49**	0.39	**0.19**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**100**		**13**	6.3	**3.0**	**mg/kg**	**2**
Cadmium	7440-43-9	6020B	0.063	U	0.13	0.063	0.024	mg/kg	1
Chromium	**7440-47-3**	**6020B**	**7.8**		**1.3**	1.1	**0.54**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**4.2**		**1.2**	0.65	**0.33**	**mg/kg**	**3**
Selenium	**7782-49-2**	**6020B**	**2.7**		**1.3**	0.95	**0.46**	**mg/kg**	**1**
Silver	7440-22-4	6020B	0.12	U	0.24	0.12	0.058	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25016-004**	
Description: **RI-GW-04 (0-6)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1530**	Project Name: **TAMP**	% Solids: **76.8**	**06/28/2022 2303**
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/06/2022 0308	BPK	06/30/2022 1927	46576

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**2.0**		**0.59**	0.47	**0.24**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**45**		**1.5**	0.72	**0.37**	**mg/kg**	**1**
Cadmium	7440-43-9	6020B	0.072	U	0.15	0.072	0.030	mg/kg	1
Chromium	**7440-47-3**	**6020B**	**22**		**1.5**	1.3	**0.66**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**7.0**		**0.30**	0.16	**0.081**	**mg/kg**	**1**
Selenium	**7782-49-2**	**6020B**	**0.79**	**J**	**1.5**	1.1	**0.56**	**mg/kg**	**1**
Silver	7440-22-4	6020B	0.15	U	0.30	0.15	0.071	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Inorganic non-metals

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25016-005**	
Description: **RI-GW-04 (12-15)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1600**	Project Name: **TAMP**	% Solids: **74.1**	**06/28/2022 2303**
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(TOC) Walkley-Black	1	07/11/2022 1900	DMA		47616

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
TOC		**Walkley-Black**	**360**		**200**	100	**100**	**mg/kg**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25016-006**	
Description: **RI-GW-05 (0-4)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1715**	Project Name: **TAMP**	% Solids: **89.3**	**06/28/2022 2303**
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/06/2022 0315	BPK	06/30/2022 1927	46576
2	3050B	6020B	10	07/06/2022 1737	BPK	06/30/2022 1927	46576

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**1.4**		**0.49**	0.39	**0.20**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**83**		**13**	6.3	**3.0**	**mg/kg**	**2**
Cadmium	7440-43-9	6020B	0.063	U	0.13	0.063	0.025	mg/kg	1
Chromium	**7440-47-3**	**6020B**	**35**		**1.3**	1.1	**0.54**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**5.4**		**0.25**	0.14	**0.067**	**mg/kg**	**1**
Selenium	**7782-49-2**	**6020B**	**0.92**	**J**	**1.3**	0.95	**0.46**	**mg/kg**	**1**
Silver	7440-22-4	6020B	0.13	U	0.25	0.13	0.059	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Inorganic non-metals

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25016-007**	
Description: **RI-GW-05 (8-12)**		Matrix: **Solid**	
Date Sampled: **06/23/2022 1715**	Project Name: **TAMP**	% Solids: **82.8**	**06/28/2022 2303**
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(TOC) Walkley-Black	1	07/11/2022 1900	DMA		47616

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
TOC		**Walkley-Black**	**3000**		**200**	100	**99**	**mg/kg**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25016-008**	
Description: **RI-GW-06 (0-6)**		Matrix: **Solid**	
Date Sampled: **06/24/2022 1050**	Project Name: **TAMP**	% Solids: **80.8**	**06/29/2022 2306**
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/06/2022 0323	BPK	06/30/2022 1927	46576

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**2.7**		**0.43**	0.34	**0.17**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**64**		**1.1**	0.53	**0.27**	**mg/kg**	**1**
Cadmium	**7440-43-9**	**6020B**	**0.12**		**0.11**	0.053	**0.022**	**mg/kg**	**1**
Chromium	**7440-47-3**	**6020B**	**20**		**1.1**	0.94	**0.48**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**10**		**0.22**	0.12	**0.059**	**mg/kg**	**1**
Selenium	**7782-49-2**	**6020B**	**1.1**		**1.1**	0.80	**0.41**	**mg/kg**	**1**
Silver	7440-22-4	6020B	0.11	U	0.22	0.11	0.052	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Inorganic non-metals

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25016-009**	
Description: **RI-GW-06 (6-8)**		Matrix: **Solid**	
Date Sampled: **06/24/2022 1050**	Project Name: **TAMP**	% Solids: **88.3**	**06/28/2022 2303**
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(TOC) Walkley-Black	1	07/11/2022 1900	DMA		47616

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
TOC		**Walkley-Black**	**2000**		**200**	100	**100**	**mg/kg**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25016-010**	
Description: **RI-GW-07 (0-4)**		Matrix: **Solid**	
Date Sampled: **06/24/2022 1225**	Project Name: **TAMP**	% Solids: **90.2**	**06/28/2022 2303**
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/06/2022 0331	BPK	06/30/2022 1927	46576

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**1.3**		**0.52**	0.42	**0.21**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**58**		**1.3**	0.63	**0.32**	**mg/kg**	**1**
Cadmium	**7440-43-9**	**6020B**	**0.051**	**J**	**0.13**	0.063	**0.026**	**mg/kg**	**1**
Chromium	**7440-47-3**	**6020B**	**38**		**1.3**	1.1	**0.57**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**7.6**		**0.26**	0.14	**0.070**	**mg/kg**	**1**
Selenium	**7782-49-2**	**6020B**	**0.74**	**J**	**1.3**	0.95	**0.49**	**mg/kg**	**1**
Silver	7440-22-4	6020B	0.13	U	0.26	0.13	0.062	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Inorganic non-metals

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25016-011**	
Description: **RI-GW-07 (14-16)**		Matrix: **Solid**	
Date Sampled: **06/24/2022 1235**	Project Name: **TAMP**	% Solids: **69.7**	**06/28/2022 2303**
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(TOC) Walkley-Black	1	07/11/2022 1900	DMA		47616

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
TOC		**Walkley-Black**	**510**		**200**	100	**99**	**mg/kg**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25016-012**	
Description: **RI-GW-24 (0-4)**		Matrix: **Solid**	
Date Sampled: **06/24/2022 1035**	Project Name: **TAMP**	% Solids: **89.2**	**06/28/2022 2303**
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	20	07/14/2022 1619	CMF	07/07/2022 2013	47328

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.042	U	0.057	0.042	0.018	mg/Kg	1
Acenaphthylene	208-96-8	8270E	0.042	U	0.057	0.042	0.020	mg/Kg	1
Acetophenone	98-86-2	8270E	0.22	US	0.28	0.22	0.11	mg/Kg	1
Anthracene	120-12-7	8270E	0.042	U	0.057	0.042	0.011	mg/Kg	1
Atrazine	1912-24-9	8270E	0.22	U	0.28	0.22	0.11	mg/Kg	1
Benzaldehyde	100-52-7	8270E	0.22	US	0.28	0.22	0.11	mg/Kg	1
Benzo(a)anthracene	56-55-3	8270E	0.042	U	0.057	0.042	0.013	mg/Kg	1
Benzo(a)pyrene	50-32-8	8270E	0.042	U	0.057	0.042	0.014	mg/Kg	1
Benzo(b)fluoranthene	**205-99-2**	**8270E**	**0.020**	**J**	**0.057**	0.042	**0.011**	**mg/Kg**	**1**
Benzo(g,h,i)perylene	**191-24-2**	**8270E**	**0.017**	**JS**	**0.057**	0.042	**0.014**	**mg/Kg**	**1**
Benzo(k)fluoranthene	207-08-9	8270E	0.032	U	0.057	0.032	0.010	mg/Kg	1
1,1'-Biphenyl	92-52-4	8270E	0.22	U	0.28	0.22	0.11	mg/Kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	0.22	U	0.28	0.22	0.11	mg/Kg	1
Butyl benzyl phthalate	85-68-7	8270E	0.22	U	0.28	0.22	0.11	mg/Kg	1
Caprolactam	105-60-2	8270E	0.22	U	0.28	0.22	0.11	mg/Kg	1
Carbazole	86-74-8	8270E	0.22	U	0.28	0.22	0.11	mg/Kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	0.22	U	0.28	0.22	0.11	mg/Kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	0.22	U	0.28	0.22	0.11	mg/Kg	1
4-Chloroaniline	106-47-8	8270E	0.22	US	0.28	0.22	0.11	mg/Kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	0.22	U	0.28	0.22	0.11	mg/Kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	0.22	U	0.28	0.22	0.11	mg/Kg	1
2-Chloronaphthalene	91-58-7	8270E	0.22	U	0.28	0.22	0.11	mg/Kg	1
2-Chlorophenol	95-57-8	8270E	0.22	US	0.28	0.22	0.11	mg/Kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	0.22	U	0.28	0.22	0.11	mg/Kg	1
Chrysene	218-01-9	8270E	0.032	U	0.057	0.032	0.0096	mg/Kg	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.042	U	0.057	0.042	0.011	mg/Kg	1
Dibenzofuran	132-64-9	8270E	0.22	U	0.28	0.22	0.11	mg/Kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	0.22	US	0.28	0.22	0.11	mg/Kg	1
2,4-Dichlorophenol	120-83-2	8270E	0.22	U	0.28	0.22	0.11	mg/Kg	1
Diethylphthalate	84-66-2	8270E	0.22	U	0.28	0.22	0.11	mg/Kg	1
Dimethyl phthalate	131-11-3	8270E	0.32	U	0.43	0.32	0.16	mg/Kg	1
2,4-Dimethylphenol	105-67-9	8270E	0.22	U	0.28	0.22	0.11	mg/Kg	1
Di-n-butyl phthalate	84-74-2	8270E	0.22	U	0.28	0.22	0.11	mg/Kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	1.0	US	1.4	1.0	0.53	mg/Kg	1
2,4-Dinitrophenol	51-28-5	8270E	1.0	US	1.4	1.0	0.53	mg/Kg	1
2,4-Dinitrotoluene	121-14-2	8270E	0.42	US	0.57	0.42	0.21	mg/Kg	1
2,6-Dinitrotoluene	606-20-2	8270E	0.42	U	0.57	0.42	0.21	mg/Kg	1
Di-n-octylphthalate	117-84-0	8270E	0.22	US	0.28	0.22	0.11	mg/Kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	1.0	U	1.4	1.0	0.53	mg/Kg	1
Fluoranthene	206-44-0	8270E	0.032	U	0.057	0.032	0.0089	mg/Kg	1
Fluorene	86-73-7	8270E	0.042	U	0.057	0.042	0.012	mg/Kg	1
Hexachlorobenzene	118-74-1	8270E	0.22	U	0.28	0.22	0.11	mg/Kg	1
Hexachlorobutadiene	87-68-3	8270E	0.22	U	0.28	0.22	0.11	mg/Kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	1.0	US	1.4	1.0	0.53	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25016-012**	
Description: **RI-GW-24 (0-4)**		Matrix: **Solid**	
Date Sampled: **06/24/2022 1035**	Project Name: **TAMP**	% Solids: **89.2**	**06/28/2022 2303**
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	20	07/14/2022 1619	CMF	07/07/2022 2013	47328

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.22	U	0.28	0.22	0.11	mg/Kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.042	U	0.057	0.042	0.021	mg/Kg	1
Isophorone	78-59-1	8270E	0.22	U	0.28	0.22	0.11	mg/Kg	1
2-Methylnaphthalene	91-57-6	8270E	0.042	U	0.057	0.042	0.021	mg/Kg	1
2-Methylphenol	95-48-7	8270E	0.22	US	0.28	0.22	0.11	mg/Kg	1
3+4-Methylphenol	106-44-5	8270E	0.42	US	0.57	0.42	0.21	mg/Kg	1
Naphthalene	91-20-3	8270E	0.042	U	0.057	0.042	0.021	mg/Kg	1
2-Nitroaniline	88-74-4	8270E	0.42	US	0.57	0.42	0.21	mg/Kg	1
3-Nitroaniline	99-09-2	8270E	0.42	US	0.57	0.42	0.21	mg/Kg	1
4-Nitroaniline	100-01-6	8270E	0.42	US	0.57	0.42	0.21	mg/Kg	1
Nitrobenzene	98-95-3	8270E	0.22	US	0.28	0.22	0.11	mg/Kg	1
2-Nitrophenol	88-75-5	8270E	0.42	U	0.57	0.42	0.21	mg/Kg	1
4-Nitrophenol	100-02-7	8270E	1.0	US	1.4	1.0	0.53	mg/Kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	0.22	U	0.28	0.22	0.11	mg/Kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	0.22	U	0.28	0.22	0.11	mg/Kg	1
Pentachlorophenol	87-86-5	8270E	1.0	US	1.4	1.0	0.53	mg/Kg	1
Phenanthrene	**85-01-8**	**8270E**	**0.021**	**J**	**0.057**	0.042	**0.015**	**mg/Kg**	**1**
Phenol	108-95-2	8270E	0.22	US	0.28	0.22	0.11	mg/Kg	1
Pyrene	129-00-0	8270E	0.042	U	0.057	0.042	0.011	mg/Kg	1
2,4,5-Trichlorophenol	95-95-4	8270E	0.22	U	0.28	0.22	0.11	mg/Kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	0.22	U	0.28	0.22	0.11	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		69	44-115
2-Fluorophenol		44	35-115
Nitrobenzene-d5		57	37-122
Phenol-d5		43	33-122
Terphenyl-d14		67	54-127
2,4,6-Tribromophenol		43	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XF25016-012**	
Description: **RI-GW-24 (0-4)**		Matrix: **Solid**	
Date Sampled: **06/24/2022 1035**	Project Name: **TAMP**	% Solids: **89.2**	**06/28/2022 2303**
Date Received: **06/25/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	07/06/2022 0338	BPK	06/30/2022 1927	46576
2	3050B	6020B	10	07/06/2022 1744	BPK	06/30/2022 1927	46576

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**0.97**		**0.44**	0.35	**0.18**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**160**	**S**	**11**	5.3	**2.7**	**mg/kg**	**2**
Cadmium	**7440-43-9**	**6020B**	**0.096**	**J**	**0.11**	0.053	**0.022**	**mg/kg**	**1**
Chromium	**7440-47-3**	**6020B**	**13**		**1.1**	0.94	**0.49**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**4.2**		**0.22**	0.12	**0.060**	**mg/kg**	**1**
Selenium	**7782-49-2**	**6020B**	**1.3**		**1.1**	0.80	**0.42**	**mg/kg**	**1**
Silver	7440-22-4	6020B	0.11	U	0.22	0.11	0.053	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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QC Summary

Inorganic non-metals - MB

Sample ID: XQ47616-001
Batch: 47616
Analytical Method: Walkley-Black

Matrix: Solid

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
TOC	100	U	1	200	100	100	mg/kg	07/11/2022 1900

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCS

Sample ID: XQ47616-002
Batch: 47616
Analytical Method: Walkley-Black

Matrix: Solid

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
TOC	1000	1200		1	117	80-120	07/11/2022 1900

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ47328-001
Batch: 47328
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 07/07/2022 2013

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acenaphthene	0.0020	U	1	0.0027	0.0020	0.00083	mg/kg	07/14/2022 1112
Acenaphthylene	0.0020	U	1	0.0027	0.0020	0.00095	mg/kg	07/14/2022 1112
Acetophenone	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
Anthracene	0.0020	U	1	0.0027	0.0020	0.00051	mg/kg	07/14/2022 1112
Atrazine	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
Benzaldehyde	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
Benzo(a)anthracene	0.0020	U	1	0.0027	0.0020	0.00059	mg/kg	07/14/2022 1112
Benzo(a)pyrene	0.0020	U	1	0.0027	0.0020	0.00066	mg/kg	07/14/2022 1112
Benzo(b)fluoranthene	0.0020	U	1	0.0027	0.0020	0.00050	mg/kg	07/14/2022 1112
Benzo(g,h,i)perylene	0.0020	U	1	0.0027	0.0020	0.00065	mg/kg	07/14/2022 1112
Benzo(k)fluoranthene	0.0015	U	1	0.0027	0.0015	0.00048	mg/kg	07/14/2022 1112
1,1'-Biphenyl	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
4-Bromophenyl phenyl ether	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
Butyl benzyl phthalate	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
Caprolactam	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
Carbazole	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
bis (2-Chloro-1-methylethyl) ether	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
4-Chloro-3-methyl phenol	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
4-Chloroaniline	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
bis(2-Chloroethoxy)methane	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
bis(2-Chloroethyl)ether	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
2-Chloronaphthalene	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
2-Chlorophenol	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
4-Chlorophenyl phenyl ether	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
Chrysene	0.0015	U	1	0.0027	0.0015	0.00045	mg/kg	07/14/2022 1112
Dibenzo(a,h)anthracene	0.0020	U	1	0.0027	0.0020	0.00051	mg/kg	07/14/2022 1112
Dibenzofuran	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
3,3'-Dichlorobenzidine	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
2,4-Dichlorophenol	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
Diethylphthalate	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
Dimethyl phthalate	0.015	U	1	0.020	0.015	0.0074	mg/kg	07/14/2022 1112
2,4-Dimethylphenol	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
Di-n-butyl phthalate	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
4,6-Dinitro-2-methylphenol	0.050	U	1	0.067	0.050	0.025	mg/kg	07/14/2022 1112
2,4-Dinitrophenol	0.050	U	1	0.067	0.050	0.025	mg/kg	07/14/2022 1112
2,4-Dinitrotoluene	0.020	U	1	0.027	0.020	0.010	mg/kg	07/14/2022 1112
2,6-Dinitrotoluene	0.020	U	1	0.027	0.020	0.010	mg/kg	07/14/2022 1112
Di-n-octylphthalate	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
bis(2-Ethylhexyl)phthalate	0.050	U	1	0.067	0.050	0.025	mg/kg	07/14/2022 1112
Fluoranthene	0.0015	U	1	0.0027	0.0015	0.00042	mg/kg	07/14/2022 1112
Fluorene	0.0020	U	1	0.0027	0.0020	0.00057	mg/kg	07/14/2022 1112
Hexachlorobenzene	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
Hexachlorobutadiene	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
Hexachlorocyclopentadiene	0.050	U	1	0.067	0.050	0.025	mg/kg	07/14/2022 1112

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ47328-001
Batch: 47328
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 07/07/2022 2013

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Hexachloroethane	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
Indeno(1,2,3-c,d)pyrene	0.0020	U	1	0.0027	0.0020	0.0010	mg/kg	07/14/2022 1112
Isophorone	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
2-Methylnaphthalene	0.0020	U	1	0.0027	0.0020	0.00099	mg/kg	07/14/2022 1112
2-Methylphenol	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
3+4-Methylphenol	0.020	U	1	0.027	0.020	0.010	mg/kg	07/14/2022 1112
Naphthalene	0.0020	U	1	0.0027	0.0020	0.00097	mg/kg	07/14/2022 1112
2-Nitroaniline	0.020	U	1	0.027	0.020	0.010	mg/kg	07/14/2022 1112
3-Nitroaniline	0.020	U	1	0.027	0.020	0.010	mg/kg	07/14/2022 1112
4-Nitroaniline	0.020	U	1	0.027	0.020	0.010	mg/kg	07/14/2022 1112
Nitrobenzene	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
2-Nitrophenol	0.020	U	1	0.027	0.020	0.010	mg/kg	07/14/2022 1112
4-Nitrophenol	0.050	U	1	0.067	0.050	0.025	mg/kg	07/14/2022 1112
N-Nitrosodi-n-propylamine	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
N-Nitrosodiphenylamine (Diphenylamine)	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
Pentachlorophenol	0.050	U	1	0.067	0.050	0.025	mg/kg	07/14/2022 1112
Phenanthrene	0.0020	U	1	0.0027	0.0020	0.00072	mg/kg	07/14/2022 1112
Phenol	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
Pyrene	0.0020	U	1	0.0027	0.0020	0.00050	mg/kg	07/14/2022 1112
2,4,5-Trichlorophenol	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112
2,4,6-Trichlorophenol	0.010	U	1	0.013	0.010	0.0050	mg/kg	07/14/2022 1112

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		71	44-115
2-Fluorophenol		70	35-115
Nitrobenzene-d5		70	37-122
Phenol-d5		66	33-122
Terphenyl-d14		90	54-127
2,4,6-Tribromophenol		57	39-132

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ47328-002
Batch: 47328
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 07/07/2022 2013

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acenaphthene	0.13	0.10		1	76	40-123	07/14/2022 1138
Acenaphthylene	0.13	0.11		1	80	32-132	07/14/2022 1138
Acetophenone	0.13	0.089		1	67	33-115	07/14/2022 1138
Anthracene	0.13	0.11		1	82	47-123	07/14/2022 1138
Atrazine	0.13	0.10		1	79	47-127	07/14/2022 1138
Benzaldehyde	0.13	0.11		1	82	10-110	07/14/2022 1138
Benzo(a)anthracene	0.13	0.11		1	80	49-126	07/14/2022 1138
Benzo(a)pyrene	0.13	0.12		1	87	45-129	07/14/2022 1138
Benzo(b)fluoranthene	0.13	0.11		1	83	45-132	07/14/2022 1138
Benzo(g,h,i)perylene	0.13	0.13		1	95	43-134	07/14/2022 1138
Benzo(k)fluoranthene	0.13	0.11		1	86	47-132	07/14/2022 1138
1,1'-Biphenyl	0.13	0.095		1	72	40-117	07/14/2022 1138
4-Bromophenyl phenyl ether	0.13	0.11		1	82	46-124	07/14/2022 1138
Butyl benzyl phthalate	0.13	0.11		1	81	48-132	07/14/2022 1138
Caprolactam	0.13	0.13		1	96	46-117	07/14/2022 1138
Carbazole	0.13	0.11		1	85	50-123	07/14/2022 1138
bis (2-Chloro-1-methylethyl) ether	0.13	0.10		1	78	33-131	07/14/2022 1138
4-Chloro-3-methyl phenol	0.13	0.11		1	81	45-122	07/14/2022 1138
4-Chloroaniline	0.13	0.049		1	37	17-106	07/14/2022 1138
bis(2-Chloroethoxy)methane	0.13	0.11		1	82	36-121	07/14/2022 1138
bis(2-Chloroethyl)ether	0.13	0.10		1	76	31-120	07/14/2022 1138
2-Chloronaphthalene	0.13	0.099		1	75	41-114	07/14/2022 1138
2-Chlorophenol	0.13	0.10		1	79	34-121	07/14/2022 1138
4-Chlorophenyl phenyl ether	0.13	0.11		1	81	45-121	07/14/2022 1138
Chrysene	0.13	0.11		1	82	50-124	07/14/2022 1138
Dibenzo(a,h)anthracene	0.13	0.13		1	95	45-134	07/14/2022 1138
Dibenzofuran	0.13	0.096		1	72	44-120	07/14/2022 1138
3,3'-Dichlorobenzidine	0.13	0.088		1	66	22-121	07/14/2022 1138
2,4-Dichlorophenol	0.13	0.088		1	66	40-122	07/14/2022 1138
Diethylphthalate	0.13	0.11		1	83	50-124	07/14/2022 1138
Dimethyl phthalate	0.13	0.11		1	83	48-124	07/14/2022 1138
2,4-Dimethylphenol	0.13	0.093		1	70	30-127	07/14/2022 1138
Di-n-butyl phthalate	0.13	0.12		1	88	51-128	07/14/2022 1138
4,6-Dinitro-2-methylphenol	0.13	0.085		1	64	29-132	07/14/2022 1138
2,4-Dinitrophenol	0.27	0.11		1	42	10-113	07/14/2022 1138
2,4-Dinitrotoluene	0.13	0.10		1	78	48-126	07/14/2022 1138
2,6-Dinitrotoluene	0.13	0.10		1	78	46-124	07/14/2022 1138
Di-n-octylphthalate	0.13	0.12		1	90	45-140	07/14/2022 1138
bis(2-Ethylhexyl)phthalate	0.13	0.12		1	91	51-133	07/14/2022 1138
Fluoranthene	0.13	0.11		1	81	50-127	07/14/2022 1138
Fluorene	0.13	0.10		1	78	43-125	07/14/2022 1138
Hexachlorobenzene	0.13	0.10		1	76	45-122	07/14/2022 1138
Hexachlorobutadiene	0.13	0.096		1	72	32-123	07/14/2022 1138
Hexachlorocyclopentadiene	0.67	0.46		1	69	18-121	07/14/2022 1138

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ47328-002
Batch: 47328
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 07/07/2022 2013

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Hexachloroethane	0.13	0.095		1	72	28-117	07/14/2022 1138
Indeno(1,2,3-c,d)pyrene	0.13	0.12		1	93	45-133	07/14/2022 1138
Isophorone	0.13	0.099		1	75	30-122	07/14/2022 1138
2-Methylnaphthalene	0.13	0.10		1	78	38-122	07/14/2022 1138
2-Methylphenol	0.13	0.095		1	71	32-122	07/14/2022 1138
3+4-Methylphenol	0.13	0.11		1	83	34-119	07/14/2022 1138
Naphthalene	0.13	0.099		1	75	35-123	07/14/2022 1138
2-Nitroaniline	0.13	0.12		1	90	44-127	07/14/2022 1138
3-Nitroaniline	0.13	0.084		1	63	33-119	07/14/2022 1138
4-Nitroaniline	0.13	0.11		1	84	50-150	07/14/2022 1138
Nitrobenzene	0.13	0.082		1	62	34-122	07/14/2022 1138
2-Nitrophenol	0.13	0.11		1	80	36-123	07/14/2022 1138
4-Nitrophenol	0.27	0.17		1	64	30-132	07/14/2022 1138
N-Nitrosodi-n-propylamine	0.13	0.12		1	89	36-120	07/14/2022 1138
N-Nitrosodiphenylamine (Diphenylamine)	0.13	0.11		1	85	38-127	07/14/2022 1138
Pentachlorophenol	0.27	0.16		1	59	25-133	07/14/2022 1138
Phenanthrene	0.13	0.10		1	78	50-121	07/14/2022 1138
Phenol	0.13	0.10		1	75	34-121	07/14/2022 1138
Pyrene	0.13	0.11		1	86	47-127	07/14/2022 1138
2,4,5-Trichlorophenol	0.13	0.086		1	65	41-124	07/14/2022 1138
2,4,6-Trichlorophenol	0.13	0.093		1	70	39-126	07/14/2022 1138

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		69	44-115
2-Fluorophenol		71	35-115
Nitrobenzene-d5		71	37-122
Phenol-d5		70	33-122
Terphenyl-d14		88	54-127
2,4,6-Tribromophenol		78	39-132

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MS

Sample ID: XF25016-012MS
Batch: 47328
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 07/07/2022 2013

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acenaphthene	ND	0.14	0.10		20	71	40-123	07/14/2022 1645
Acenaphthylene	ND	0.14	0.11		20	74	32-132	07/14/2022 1645
Acetophenone	ND	0.14	ND	N	20	0.00	33-115	07/14/2022 1645
Anthracene	ND	0.14	0.11		20	79	47-123	07/14/2022 1645
Atrazine	ND	0.14	0.11		20	77	47-127	07/14/2022 1645
Benzaldehyde	ND	0.14	ND	N	20	0.00	10-110	07/14/2022 1645
Benzo(a)anthracene	ND	0.14	0.11		20	76	49-126	07/14/2022 1645
Benzo(a)pyrene	ND	0.14	0.11		20	76	45-129	07/14/2022 1645
Benzo(b)fluoranthene	0.020	0.14	0.11		20	63	45-132	07/14/2022 1645
Benzo(g,h,i)perylene	0.017	0.14	0.071	N	20	38	43-134	07/14/2022 1645
Benzo(k)fluoranthene	ND	0.14	0.11		20	71	47-132	07/14/2022 1645
1,1'-Biphenyl	ND	0.14	0.092		20	65	40-117	07/14/2022 1645
4-Bromophenyl phenyl ether	ND	0.14	0.090		20	64	46-124	07/14/2022 1645
Butyl benzyl phthalate	ND	0.14	0.12		20	88	48-132	07/14/2022 1645
Caprolactam	ND	0.14	0.11		20	75	46-117	07/14/2022 1645
Carbazole	ND	0.14	0.093		20	66	50-123	07/14/2022 1645
bis (2-Chloro-1-methylethyl) ether	ND	0.14	0.085		20	60	33-131	07/14/2022 1645
4-Chloro-3-methyl phenol	ND	0.14	0.10		20	72	45-122	07/14/2022 1645
4-Chloroaniline	ND	0.14	ND	N	20	0.00	17-106	07/14/2022 1645
bis(2-Chloroethoxy)methane	ND	0.14	0.079		20	56	36-121	07/14/2022 1645
bis(2-Chloroethyl)ether	ND	0.14	0.079		20	56	31-120	07/14/2022 1645
2-Chloronaphthalene	ND	0.14	0.090		20	64	41-114	07/14/2022 1645
2-Chlorophenol	ND	0.14	0.073		20	52	34-121	07/14/2022 1645
4-Chlorophenyl phenyl ether	ND	0.14	0.086		20	61	45-121	07/14/2022 1645
Chrysene	ND	0.14	0.10		20	73	50-124	07/14/2022 1645
Dibenzo(a,h)anthracene	ND	0.14	0.075		20	53	45-134	07/14/2022 1645
Dibenzofuran	ND	0.14	0.085		20	60	44-120	07/14/2022 1645
3,3'-Dichlorobenzidine	ND	0.14	ND	N	20	0.00	22-121	07/14/2022 1645
2,4-Dichlorophenol	ND	0.14	0.088		20	62	40-122	07/14/2022 1645
Diethylphthalate	ND	0.14	0.093		20	65	50-124	07/14/2022 1645
Dimethyl phthalate	ND	0.14	0.11		20	77	48-124	07/14/2022 1645
2,4-Dimethylphenol	ND	0.14	0.12		20	83	30-127	07/14/2022 1645
Di-n-butyl phthalate	ND	0.14	0.10		20	72	51-128	07/14/2022 1645
4,6-Dinitro-2-methylphenol	ND	0.14	0.33	N	20	234	29-132	07/14/2022 1645
2,4-Dinitrophenol	ND	0.28	1.0	N	20	354	10-113	07/14/2022 1645
2,4-Dinitrotoluene	ND	0.14	ND	N	20	0.00	48-126	07/14/2022 1645
2,6-Dinitrotoluene	ND	0.14	0.075		20	53	46-124	07/14/2022 1645
Di-n-octylphthalate	ND	0.14	0.29	N	20	208	45-140	07/14/2022 1645
bis(2-Ethylhexyl)phthalate	ND	0.14	0.26		20	58	51-133	07/14/2022 1645
Fluoranthene	ND	0.14	0.10		20	71	50-127	07/14/2022 1645
Fluorene	ND	0.14	0.092		20	65	43-125	07/14/2022 1645
Hexachlorobenzene	ND	0.14	0.092		20	65	45-122	07/14/2022 1645
Hexachlorobutadiene	ND	0.14	0.093		20	65	32-123	07/14/2022 1645
Hexachlorocyclopentadiene	ND	0.71	ND	N	20	0.00	18-121	07/14/2022 1645

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MS

Sample ID: XF25016-012MS
Batch: 47328
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 07/07/2022 2013

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Hexachloroethane	ND	0.14	0.073		20	51	28-117	07/14/2022 1645
Indeno(1,2,3-c,d)pyrene	ND	0.14	0.075		20	53	45-133	07/14/2022 1645
Isophorone	ND	0.14	0.079		20	56	30-122	07/14/2022 1645
2-Methylnaphthalene	ND	0.14	0.098		20	69	38-122	07/14/2022 1645
2-Methylphenol	ND	0.14	ND	N	20	0.00	32-122	07/14/2022 1645
3+4-Methylphenol	ND	0.14	ND	N	20	0.00	34-119	07/14/2022 1645
Naphthalene	ND	0.14	0.096		20	67	35-123	07/14/2022 1645
2-Nitroaniline	ND	0.14	ND	N	20	0.00	44-127	07/14/2022 1645
3-Nitroaniline	ND	0.14	ND	N	20	0.00	33-119	07/14/2022 1645
4-Nitroaniline	ND	0.14	0.26	N	20	183	48-127	07/14/2022 1645
Nitrobenzene	ND	0.14	ND	N	20	0.00	34-122	07/14/2022 1645
2-Nitrophenol	ND	0.14	0.075		20	53	36-123	07/14/2022 1645
4-Nitrophenol	ND	0.28	ND	N	20	0.00	30-132	07/14/2022 1645
N-Nitrosodi-n-propylamine	ND	0.14	0.094		20	67	36-120	07/14/2022 1645
N-Nitrosodiphenylamine (Diphenylamine)	ND	0.14	0.11		20	80	38-127	07/14/2022 1645
Pentachlorophenol	ND	0.28	0.60	N	20	210	25-133	07/14/2022 1645
Phenanthrene	0.021	0.14	0.11		20	64	50-121	07/14/2022 1645
Phenol	ND	0.14	ND	N	20	0.00	34-121	07/14/2022 1645
Pyrene	ND	0.14	0.11		20	77	47-127	07/14/2022 1645
2,4,5-Trichlorophenol	ND	0.14	0.089		20	63	41-124	07/14/2022 1645
2,4,6-Trichlorophenol	ND	0.14	0.085		20	60	39-126	07/14/2022 1645

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		65	44-115
2-Fluorophenol		45	35-115
Nitrobenzene-d5		58	37-122
Phenol-d5		34	33-122
Terphenyl-d14		69	54-127
2,4,6-Tribromophenol		49	39-132

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MSD

Sample ID: XF25016-012MD
Batch: 47328
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 07/07/2022 2013

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acenaphthene	ND	0.15	0.092		20	63	8.6	40-123	20	07/14/2022 1711
Acenaphthylene	ND	0.15	0.10		20	69	3.0	32-132	20	07/14/2022 1711
Acetophenone	ND	0.15	ND	N	20	0.00	0.00	33-115	20	07/14/2022 1711
Anthracene	ND	0.15	0.12		20	78	3.5	47-123	20	07/14/2022 1711
Atrazine	ND	0.15	0.11		20	72	2.5	47-127	20	07/14/2022 1711
Benzaldehyde	ND	0.15	0.22	N,+	20	150	200	10-110	20	07/14/2022 1711
Benzo(a)anthracene	ND	0.15	0.11		20	72	2.0	49-126	20	07/14/2022 1711
Benzo(a)pyrene	ND	0.15	0.10		20	71	3.7	45-129	20	07/14/2022 1711
Benzo(b)fluoranthene	0.020	0.15	0.11		20	62	2.1	45-132	20	07/14/2022 1711
Benzo(g,h,i)perylene	0.017	0.15	0.064	N	20	32	9.8	43-134	20	07/14/2022 1711
Benzo(k)fluoranthene	ND	0.15	0.11		20	71	3.0	47-132	20	07/14/2022 1711
1,1'-Biphenyl	ND	0.15	0.093		20	63	1.2	40-117	20	07/14/2022 1711
4-Bromophenyl phenyl ether	ND	0.15	0.10		20	68	11	46-124	20	07/14/2022 1711
Butyl benzyl phthalate	ND	0.15	0.13		20	92	7.7	48-132	20	07/14/2022 1711
Caprolactam	ND	0.15	0.098		20	67	7.9	46-117	20	07/14/2022 1711
Carbazole	ND	0.15	0.093		20	63	0.18	50-123	20	07/14/2022 1711
bis (2-Chloro-1-methylethyl) ether	ND	0.15	0.091		20	62	5.9	33-131	20	07/14/2022 1711
4-Chloro-3-methyl phenol	ND	0.15	0.081	+	20	55	22	45-122	20	07/14/2022 1711
4-Chloroaniline	ND	0.15	ND	N	20	0.00	0.00	17-106	20	07/14/2022 1711
bis(2-Chloroethoxy)methane	ND	0.15	0.091		20	62	14	36-121	20	07/14/2022 1711
bis(2-Chloroethyl)ether	ND	0.15	0.079		20	53	0.27	31-120	20	07/14/2022 1711
2-Chloronaphthalene	ND	0.15	0.094		20	64	3.9	41-114	20	07/14/2022 1711
2-Chlorophenol	ND	0.15	ND	N,+	20	0.00	200	34-121	20	07/14/2022 1711
4-Chlorophenyl phenyl ether	ND	0.15	0.099		20	67	14	45-121	20	07/14/2022 1711
Chrysene	ND	0.15	0.10		20	69	2.5	50-124	20	07/14/2022 1711
Dibenzo(a,h)anthracene	ND	0.15	0.069		20	47	8.1	45-134	20	07/14/2022 1711
Dibenzofuran	ND	0.15	0.087		20	59	1.5	44-120	20	07/14/2022 1711
3,3'-Dichlorobenzidine	ND	0.15	ND	N	20	0.00	0.00	22-121	20	07/14/2022 1711
2,4-Dichlorophenol	ND	0.15	0.088		20	60	0.39	40-122	20	07/14/2022 1711
Diethylphthalate	ND	0.15	0.10		20	68	7.9	50-124	20	07/14/2022 1711
Dimethyl phthalate	ND	0.15	0.11		20	73	1.7	48-124	20	07/14/2022 1711
2,4-Dimethylphenol	ND	0.15	0.11		20	74	7.8	30-127	20	07/14/2022 1711
Di-n-butyl phthalate	ND	0.15	0.11		20	72	4.0	51-128	20	07/14/2022 1711
4,6-Dinitro-2-methylphenol	ND	0.15	0.36	N	20	247	9.3	29-132	20	07/14/2022 1711
2,4-Dinitrophenol	ND	0.30	1.0	N	20	345	1.2	10-113	20	07/14/2022 1711
2,4-Dinitrotoluene	ND	0.15	ND	N	20	0.00	0.00	48-126	20	07/14/2022 1711
2,6-Dinitrotoluene	ND	0.15	0.085		20	58	12	46-124	20	07/14/2022 1711
Di-n-octylphthalate	ND	0.15	0.29	N	20	199	0.29	45-140	20	07/14/2022 1711
bis(2-Ethylhexyl)phthalate	ND	0.15	0.26		20	53	1.3	51-133	20	07/14/2022 1711
Fluoranthene	ND	0.15	0.10		20	70	1.2	50-127	20	07/14/2022 1711
Fluorene	ND	0.15	0.095		20	64	3.1	43-125	20	07/14/2022 1711
Hexachlorobenzene	ND	0.15	0.093		20	63	0.87	45-122	20	07/14/2022 1711
Hexachlorobutadiene	ND	0.15	0.092		20	63	0.39	32-123	20	07/14/2022 1711
Hexachlorocyclopentadiene	ND	0.74	ND	N	20	0.00	0.00	18-121	20	07/14/2022 1711

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MSD

Sample ID: XF25016-012MD
Batch: 47328
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 07/07/2022 2013

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Hexachloroethane	ND	0.15	0.076		20	52	4.6	28-117	20	07/14/2022 1711
Indeno(1,2,3-c,d)pyrene	ND	0.15	0.072		20	49	4.2	45-133	20	07/14/2022 1711
Isophorone	ND	0.15	0.077		20	52	2.5	30-122	20	07/14/2022 1711
2-Methylnaphthalene	ND	0.15	0.099		20	67	1.0	38-122	20	07/14/2022 1711
2-Methylphenol	ND	0.15	ND	N	20	0.00	0.00	32-122	20	07/14/2022 1711
3+4-Methylphenol	ND	0.15	ND	N	20	0.00	0.00	34-119	20	07/14/2022 1711
Naphthalene	ND	0.15	0.096		20	65	0.68	35-123	20	07/14/2022 1711
2-Nitroaniline	ND	0.15	ND	N	20	0.00	0.00	44-127	20	07/14/2022 1711
3-Nitroaniline	ND	0.15	ND	N	20	0.00	0.00	33-119	20	07/14/2022 1711
4-Nitroaniline	ND	0.15	0.31	N	20	208	17	48-127	20	07/14/2022 1711
Nitrobenzene	ND	0.15	ND	N	20	0.00	0.00	34-122	20	07/14/2022 1711
2-Nitrophenol	ND	0.15	0.084		20	57	11	36-123	20	07/14/2022 1711
4-Nitrophenol	ND	0.30	ND	N	20	0.00	0.00	30-132	20	07/14/2022 1711
N-Nitrosodi-n-propylamine	ND	0.15	0.087		20	59	7.7	36-120	20	07/14/2022 1711
N-Nitrosodiphenylamine (Diphenylamine)	ND	0.15	0.11		20	75	2.7	38-127	20	07/14/2022 1711
Pentachlorophenol	ND	0.30	0.59	N	20	198	1.9	25-133	20	07/14/2022 1711
Phenanthrene	0.021	0.15	0.11		20	59	3.6	50-121	20	07/14/2022 1711
Phenol	ND	0.15	ND	N	20	0.00	0.00	34-121	20	07/14/2022 1711
Pyrene	ND	0.15	0.10		20	71	4.6	47-127	20	07/14/2022 1711
2,4,5-Trichlorophenol	ND	0.15	0.086		20	58	3.5	41-124	20	07/14/2022 1711
2,4,6-Trichlorophenol	ND	0.15	0.076		20	52	11	39-126	20	07/14/2022 1711

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		61	44-115
2-Fluorophenol		40	35-115
Nitrobenzene-d5		55	37-122
Phenol-d5		39	33-122
Terphenyl-d14		65	54-127
2,4,6-Tribromophenol		46	39-132

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - MB

Sample ID: XQ46576-001
Batch: 46576
Analytical Method: 6020B

Matrix: Solid
Prep Method: 3050B
Prep Date: 06/30/2022 1927

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Arsenic	0.40	U	1	0.50	0.40	0.20	mg/kg	07/06/2022 0230
Barium	0.63	U	1	1.3	0.63	0.31	mg/kg	07/06/2022 0230
Cadmium	0.063	U	1	0.13	0.063	0.025	mg/kg	07/06/2022 0230
Chromium	1.1	U	1	1.3	1.1	0.55	mg/kg	07/06/2022 0230
Lead	0.14	U	1	0.25	0.14	0.068	mg/kg	07/06/2022 0230
Selenium	0.95	U	1	1.3	0.95	0.47	mg/kg	07/06/2022 0230
Silver	0.13	U	1	0.25	0.13	0.060	mg/kg	07/06/2022 0230

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - LCS

Sample ID: XQ46576-002
Batch: 46576
Analytical Method: 6020B

Matrix: Solid
Prep Method: 3050B
Prep Date: 06/30/2022 1927

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Arsenic	50	49		1	98	82-118	07/06/2022 0237
Barium	50	52		1	104	86-116	07/06/2022 0237
Cadmium	50	52		1	104	84-116	07/06/2022 0237
Chromium	50	55		1	109	83-119	07/06/2022 0237
Lead	50	55		1	111	84-118	07/06/2022 0237
Selenium	50	42		1	85	80-119	07/06/2022 0237
Silver	50	55		2	111	83-118	07/06/2022 0245

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - MS

Sample ID: XF25016-012MS
Batch: 46576
Analytical Method: 6020B

Matrix: Solid
Prep Method: 3050B
Prep Date: 06/30/2022 1927

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Arsenic	0.97	47	48		1	100	82-118	07/06/2022 0401
Barium	160	47	170	N	10	22	86-116	07/06/2022 1752
Cadmium	0.096	47	50		1	105	84-116	07/06/2022 0401
Chromium	13	47	68		1	116	83-119	07/06/2022 0401
Lead	4.2	47	45		1	87	84-118	07/06/2022 0401
Selenium	1.3	47	42		1	85	80-119	07/06/2022 0401
Silver	ND	47	53		1	112	83-118	07/06/2022 0401

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - MSD

Sample ID: XF25016-012MD
Batch: 46576
Analytical Method: 6020B

Matrix: Solid
Prep Method: 3050B
Prep Date: 06/30/2022 1927

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Arsenic	0.97	54	53		1	95	9.1	82-118	20	07/06/2022 0409
Barium	160	54	150	N	10	-24	15	86-116	20	07/06/2022 1759
Cadmium	0.096	54	57		1	104	13	84-116	20	07/06/2022 0409
Chromium	13	54	72		1	108	5.6	83-119	20	07/06/2022 0409
Lead	4.2	54	51		1	86	12	84-118	20	07/06/2022 0409
Selenium	1.3	54	47		1	85	13	80-119	20	07/06/2022 0409
Silver	ND	54	60		1	111	12	83-118	20	07/06/2022 0409

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Chain of Custody
and
Miscellaneous Documents

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Number 133758

Client: Terracon Consultants	Report to Contact: Ethan.Dinwiddie@Terracon.com	Telephone No. / E-mail: ←	Quote No. 25322
Address: 2401 Brentwood Rd, Suite 107	Sampler's Signature: X	Analysis (Attach list if more space is needed)	Page 1 of 2
City: Raleigh; State: NC; Zip Code: 27604	Printed Name: Ethan Dinwiddie		XF25016
Project Name: TAMP			CSD
Project No.: 7021P145	P.O. No.		Remarks / Cooler I.D.

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	Grab/Comp	Matrix: Aqueous	Soil	Non-Aqueous	No. of Containers by Preservative Type: Unpres.	HNO3	HCl	NaOH	NaOH	Solid	Filtered	Sulfate Totals	RCRA 8 Metals	TOC Washing Block							
RI-GW-02 (0-4)	6/23	1235	C		X		1								X								
RI-GW-02 (14-16)	6/23	1240	C		X		1									X							
RI-GW-03 (0-6)	6/23	1405	C		X		1								X								
RI-GW-04 (0-6)	6/23	1530	C		X		1								X								
RI-GW-04 (12-15)	6/23	1600	C		X		1									X							
RI-GW-05 (0-4)	6/23	1715	C		X		1								X								
RI-GW-05 (8-12)	6/23	1715	C		X		1									X							
RI-GW-06 (0-6)	6/24	1050	C		X		1								X								
RI-GW-06 (6-8)	6/24	1050	C		X		1									X							
RI-GW-07 (0-4)	6/24	1235	C		X		1								X								

Turn Around Time Required (Prior lab approval required for expedited TAT.): ☒ Standard ☐ Rush (Specify)

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☒ Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by	6/24	2000	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by FedEx	6-25-22	0845	4. Laboratory Received by	6-25-22	0845

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on ice (Circle): Yes No Ice Pack
Receipt Temp. 5.7 °C
Temp Blank ☐ Y ☒ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: MEOC3NS-01

Pace Analytical®

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106 Vantage Point Drive • West Columbia, SC 29172
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www.pacelabs.com

Number L14854

Client: Terracon Consultants
Address: 2401 Brentwood Rd Suite 107
City: Raleigh | State: NC | Zip Code: 27604
Project Name: TAMP
Project No.: 70219145
P.O. No.:
Report to Contact: Ethan.Dinwiddie@Terracon.com
Sampler's Signature: X
Printed Name: Ethan Dinwiddie
Telephone No. / E-mail:
Quote No.: 25322
Analysis (Attach list if more space is needed)
Page 2 of 2

XF25016
CSD

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	G=Grab C=Composite	Matrix: Aqueous	Solid	Air/Vapor	No of Containers by Preservative Type: Unpres.	H2SO4	HNO3	HCl	NaOH	NaS2O3	Zn(Ac)2	Other	TX Water Blank	SVOCs 8270	RCRA 8 Metals	Remarks / Cooler I.D.
RE-GW-07 (M-16)	6/24	1235	C		X		1								X			
* SB-24 (0-6)	6/24	1035	C		X		2									X	X	
MS/MSD-SB-05	6/24	1040	C		X		4									X	X	Parent is SB-24 (0-6)

Turn Around Time Required (Prior lab approval required for expedited TAT.) ☐ Standard ☐ Rush (Specify)
Sample Disposal: ☐ Return to Client ☑ Disposal by Lab
Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☑ Unknown
QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by	6/24	2000	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by FedEx	6-25-22	0845	4. Laboratory Received by	6-25-22	0845

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on ice (Circle) Yes No Ice Pack
Receipt Temp. 5.7 °C
Temp Blank ☐ Y ☑ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME002N2-01

Pace Analytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: Terracon Cooler Inspected by/date: TEC / 06/25/2022 Lot #: XF25018-6

Means of receipt: ☐ Pace ☐ Client ☐ UPS ☑ FedEx ☐ Other: _____

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: 22-1253

4.4 / 4.4 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 6 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☑ Yes	☐ No	☐ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? _____
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☐ No	☑ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote # _____

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA _____ were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA _____ were received with bubbles >6 mm in diameter.

Samples(s) NA _____ were received with TRC > 0.5 mg/L (If #19 is ***no***) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: TEC Date: 06/25/2022

Comments:

Report of Analysis

Terracon Consultants, Inc.
2401 Brentwood Road
Suite 107 I
Raleigh, NC 27604
Attention: Ethan Dinwiddie

Project Name: TAMP

Project Number: 7021P145

Lot Number:**XG26017**

Date Completed:08/11/2022

Project Manager:**Cathy S. Dover**

Kathy Smith

08/11/2022 5:09 PM
Approved and released by:
Project Manager II: **Kathy E. Smith**

The electronic signature above is the equivalent of a handwritten signature.
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106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
Terracon Consultants, Inc.
Lot Number: XG26017

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Additionally, the DoD QSM version 5.3 has been followed for these samples. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs, the DoD QSM, or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Semivolatiles
The method blank associated with batch 49420 had Di-n-butyl phthalate detected at a concentration that was above the MDL but below ½ the PQL. All samples associated with this method blank that have detections for Di-n-butyl phthalate have been flagged with a "B”.

Sample Summary

Terracon Consultants, Inc.

Lot Number: XG26017

Project Name: TAMP

Project Number: 7021P145

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	Tunnel N-01	Aqueous	07/21/2022 0805	07/26/2022
002	Tunnel S-02	Aqueous	07/21/2022 0840	07/26/2022
003	TAMP-MW-3	Aqueous	07/21/2022 1715	07/26/2022

(3 samples)

Detection Summary

Terracon Consultants, Inc.

Lot Number: XG26017

Project Name: TAMP

Project Number: 7021P145

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	Tunnel N-01	Aqueous	Chloroform	8260D	0.57	J	ug/L	5
001	Tunnel N-01	Aqueous	cis-1,2-Dichloroethene	8260D	18		ug/L	5
001	Tunnel N-01	Aqueous	Tetrachloroethene	8260D	19		ug/L	5
001	Tunnel N-01	Aqueous	1,1,2-Trichloro-1,2,2-	8260D	1.1		ug/L	5
001	Tunnel N-01	Aqueous	Trichloroethene	8260D	120		ug/L	6
001	Tunnel N-01	Aqueous	Trichlorofluoromethane	8260D	2.3		ug/L	6
002	Tunnel S-02	Aqueous	cis-1,2-Dichloroethene	8260D	5.6		ug/L	7
002	Tunnel S-02	Aqueous	Tetrachloroethene	8260D	5.0		ug/L	7
002	Tunnel S-02	Aqueous	Trichloroethene	8260D	33		ug/L	8
002	Tunnel S-02	Aqueous	Trichlorofluoromethane	8260D	0.85	J	ug/L	8
003	TAMP-MW-3	Aqueous	Chloromethane (Methyl	8260D	1.4	J	ug/L	9
003	TAMP-MW-3	Aqueous	cis-1,2-Dichloroethene	8260D	1.0		ug/L	9
003	TAMP-MW-3	Aqueous	Trichloroethene	8260D	1.9		ug/L	10
003	TAMP-MW-3	Aqueous	Di-n-butyl phthalate	8270E	0.63	BJ	ug/L	11
003	TAMP-MW-3	Aqueous	Barium	6020B	51		ug/L	13
003	TAMP-MW-3	Aqueous	Cadmium	6020B	1.3		ug/L	13
003	TAMP-MW-3	Aqueous	Lead	6020B	1.1		ug/L	13

(17 detections)

Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XG26017-001**

Description: **Tunnel N-01** Matrix: **Aqueous**

Date Sampled: **07/21/2022 0805** Project Name: **TAMP**

Date Received: **07/26/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	07/28/2022 0203	JMM2		49324

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	**67-66-3**	**8260D**	**0.57**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**18**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**19**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**1.1**		**1.0**	0.84	**0.42**	**ug/L**	**1**
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XG26017-001**	
Description: **Tunnel N-01**		Matrix: **Aqueous**	
Date Sampled: **07/21/2022 0805**	Project Name: **TAMP**		
Date Received: **07/26/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	07/28/2022 0203	JMM2		49324

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**120**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	**75-69-4**	**8260D**	**2.3**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		112	81-118
Bromofluorobenzene		89	85-114
Toluene-d8		94	89-112
Dibromofluoromethane		98	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XG26017-002**

Description: **Tunnel S-02** Matrix: **Aqueous**

Date Sampled: **07/21/2022 0840** Project Name: **TAMP**

Date Received: **07/26/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	07/28/2022 0228	JMM2		49324

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**5.6**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**5.0**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XG26017-002**	
Description: **Tunnel S-02**		Matrix: **Aqueous**	
Date Sampled: **07/21/2022 0840**	Project Name: **TAMP**		
Date Received: **07/26/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	07/28/2022 0228	JMM2		49324

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**33**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	**75-69-4**	**8260D**	**0.85**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		113	81-118
Bromofluorobenzene		97	85-114
Toluene-d8		99	89-112
Dibromofluoromethane		101	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XG26017-003**

Description: **TAMP-MW-3** Matrix: **Aqueous**

Date Sampled: **07/21/2022 1715** Project Name: **TAMP**

Date Received: **07/26/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	07/28/2022 0253	JMM2		49324

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	**74-87-3**	**8260D**	**1.4**	**J**	**2.0**	1.0	**0.50**	**ug/L**	**1**
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**1.0**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XG26017-003**	
Description: **TAMP-MW-3**		Matrix: **Aqueous**	
Date Sampled: **07/21/2022 1715**	Project Name: **TAMP**		
Date Received: **07/26/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	07/28/2022 0253	JMM2		49324

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**1.9**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		116	81-118
Bromofluorobenzene		92	85-114
Toluene-d8		96	89-112
Dibromofluoromethane		98	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XG26017-003**

Description: **TAMP-MW-3** Matrix: **Aqueous**

Date Sampled: **07/21/2022 1715** Project Name: **TAMP**

Date Received: **07/26/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	07/29/2022 1447	CMF	07/28/2022 1800	49420

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	**84-74-2**	**8270E**	**0.63**	**BJ**	**1.6**	1.0	**0.50**	**ug/L**	**1**
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation
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DL = Detection Limit
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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XG26017-003**
Description: **TAMP-MW-3** Matrix: **Aqueous**
Date Sampled: **07/21/2022 1715** Project Name: **TAMP**
Date Received: **07/26/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	07/29/2022 1447	CMF	07/28/2022 1800	49420

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		72	44-119
2-Fluorophenol		36	19-119
Nitrobenzene-d5		62	44-120
Phenol-d5		51	10-115
Terphenyl-d14		66	50-134
2,4,6-Tribromophenol		64	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

Metals

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XG26017-003**	
Description: **TAMP-MW-3**		Matrix: **Aqueous**	
Date Sampled: **07/21/2022 1715**	Project Name: **TAMP**		
Date Received: **07/26/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	08/08/2022 0506	BNW	08/01/2022 0032	49379
1		7470A	1	08/05/2022 0711	JAB2	08/05/2022 0343	49920

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**51**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	**7440-43-9**	**6020B**	**1.3**		**0.50**	0.25	**0.13**	**ug/L**	**1**
Chromium	7440-47-3	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Lead	**7439-92-1**	**6020B**	**1.1**		**1.0**	0.50	**0.25**	**ug/L**	**1**
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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QC Summary

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ49324-001
Batch: 49324
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	07/27/2022 1945
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	07/27/2022 1945
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	07/27/2022 1945
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	07/27/2022 1945
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	07/27/2022 1945
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	07/27/2022 1945
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	07/27/2022 1945
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	07/27/2022 1945
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	07/27/2022 1945
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	07/27/2022 1945
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	07/27/2022 1945
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ49324-001
Batch: 49324
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	07/27/2022 1945

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		111	81-118
Bromofluorobenzene		96	85-114
Toluene-d8		98	89-112
Dibromofluoromethane		97	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ49324-002
Batch: 49324
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	110		1	110	39-160	07/27/2022 1841
Benzene	50	49		1	99	79-120	07/27/2022 1841
Bromodichloromethane	50	48		1	95	79-125	07/27/2022 1841
Bromoform	50	43		1	87	66-130	07/27/2022 1841
Bromomethane (Methyl bromide)	50	45		1	89	53-141	07/27/2022 1841
2-Butanone (MEK)	100	86		1	86	56-143	07/27/2022 1841
Carbon disulfide	50	43		1	86	64-133	07/27/2022 1841
Carbon tetrachloride	50	47		1	95	72-136	07/27/2022 1841
Chlorobenzene	50	49		1	97	82-118	07/27/2022 1841
Chloroethane	50	45		1	91	60-138	07/27/2022 1841
Chloroform	50	47		1	94	79-124	07/27/2022 1841
Chloromethane (Methyl chloride)	50	49		1	97	50-139	07/27/2022 1841
Cyclohexane	50	53		1	105	71-130	07/27/2022 1841
1,2-Dibromo-3-chloropropane (DBCP)	50	46		1	92	62-128	07/27/2022 1841
Dibromochloromethane	50	47		1	94	74-126	07/27/2022 1841
1,2-Dibromoethane (EDB)	50	50		1	99	77-121	07/27/2022 1841
1,2-Dichlorobenzene	50	51		1	101	80-119	07/27/2022 1841
1,3-Dichlorobenzene	50	49		1	99	80-119	07/27/2022 1841
1,4-Dichlorobenzene	50	49		1	98	79-118	07/27/2022 1841
Dichlorodifluoromethane	50	43		1	85	32-152	07/27/2022 1841
1,1-Dichloroethane	50	48		1	97	77-125	07/27/2022 1841
1,2-Dichloroethane	50	51		1	101	73-128	07/27/2022 1841
1,1-Dichloroethene	50	45		1	91	71-131	07/27/2022 1841
cis-1,2-Dichloroethene	50	45		1	91	78-123	07/27/2022 1841
trans-1,2-Dichloroethene	50	46		1	92	75-124	07/27/2022 1841
1,2-Dichloropropane	50	50		1	99	78-122	07/27/2022 1841
cis-1,3-Dichloropropene	50	50		1	100	75-124	07/27/2022 1841
trans-1,3-Dichloropropene	50	50		1	100	73-127	07/27/2022 1841
Ethylbenzene	50	50		1	100	79-121	07/27/2022 1841
2-Hexanone	100	97		1	97	57-139	07/27/2022 1841
Isopropylbenzene	50	52		1	104	72-131	07/27/2022 1841
Methyl acetate	50	50		1	100	56-136	07/27/2022 1841
Methyl tertiary butyl ether (MTBE)	50	46		1	92	71-124	07/27/2022 1841
4-Methyl-2-pentanone	100	110		1	106	67-130	07/27/2022 1841
Methylcyclohexane	50	43		1	85	72-132	07/27/2022 1841
Methylene chloride	50	46		1	93	74-124	07/27/2022 1841
Styrene	50	46		1	93	78-123	07/27/2022 1841
1,1,2,2-Tetrachloroethane	50	52		1	104	71-121	07/27/2022 1841
Tetrachloroethene	50	48		1	96	74-129	07/27/2022 1841
Toluene	50	50		1	99	80-121	07/27/2022 1841
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	45		1	90	70-136	07/27/2022 1841
1,2,4-Trichlorobenzene	50	51		1	102	69-130	07/27/2022 1841
1,1,1-Trichloroethane	50	47		1	95	74-131	07/27/2022 1841
1,1,2-Trichloroethane	50	50		1	100	80-119	07/27/2022 1841

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ49324-002
Batch: 49324
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	46		1	92	79-123	07/27/2022 1841
Trichlorofluoromethane	50	44		1	88	65-141	07/27/2022 1841
Vinyl chloride	50	48		1	96	58-137	07/27/2022 1841
Xylenes (total)	100	100		1	100	79-121	07/27/2022 1841

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		97	81-118
Bromofluorobenzene		89	85-114
Toluene-d8		90	89-112
Dibromofluoromethane		85	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ49420-001
Batch: 49420
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 07/28/2022 1800

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acenaphthene	0.10	U	1	0.20	0.10	0.040	ug/L	07/29/2022 1243
Acenaphthylene	0.10	U	1	0.20	0.10	0.040	ug/L	07/29/2022 1243
Acetophenone	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
Anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	07/29/2022 1243
Atrazine	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
Benzaldehyde	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
Benzo(a)anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	07/29/2022 1243
Benzo(a)pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	07/29/2022 1243
Benzo(b)fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	07/29/2022 1243
Benzo(g,h,i)perylene	0.10	U	1	0.20	0.10	0.040	ug/L	07/29/2022 1243
Benzo(k)fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	07/29/2022 1243
1,1'-Biphenyl	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
4-Bromophenyl phenyl ether	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
Butyl benzyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
Caprolactam	2.0	U	1	3.0	2.0	1.0	ug/L	07/29/2022 1243
Carbazole	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
bis (2-Chloro-1-methylethyl) ether	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
4-Chloro-3-methyl phenol	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
4-Chloroaniline	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
bis(2-Chloroethoxy)methane	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
bis(2-Chloroethyl)ether	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
2-Chloronaphthalene	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
2-Chlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
4-Chlorophenyl phenyl ether	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
Chrysene	0.10	U	1	0.20	0.10	0.040	ug/L	07/29/2022 1243
Dibenzo(a,h)anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	07/29/2022 1243
Dibenzofuran	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
3,3'-Dichlorobenzidine	3.5	U	1	4.0	3.5	1.8	ug/L	07/29/2022 1243
2,4-Dichlorophenol	0.50	U	1	1.6	0.50	0.25	ug/L	07/29/2022 1243
Diethylphthalate	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
Dimethyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
2,4-Dimethylphenol	1.5	U	1	2.0	1.5	0.62	ug/L	07/29/2022 1243
Di-n-butyl phthalate	**0.72**	**J**	**1**	**1.6**	1.0	**0.50**	**ug/L**	**07/29/2022 1243**
4,6-Dinitro-2-methylphenol	2.0	U	1	4.0	2.0	1.0	ug/L	07/29/2022 1243
2,4-Dinitrophenol	2.0	U	1	4.0	2.0	1.0	ug/L	07/29/2022 1243
2,4-Dinitrotoluene	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
2,6-Dinitrotoluene	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
Di-n-octylphthalate	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
bis(2-Ethylhexyl)phthalate	3.0	U	1	4.0	3.0	1.5	ug/L	07/29/2022 1243
Fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	07/29/2022 1243
Fluorene	0.10	U	1	0.20	0.10	0.040	ug/L	07/29/2022 1243
Hexachlorobenzene	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
Hexachlorobutadiene	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
Hexachlorocyclopentadiene	4.0	U	1	4.0	4.0	2.0	ug/L	07/29/2022 1243

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ49420-001
Batch: 49420
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 07/28/2022 1800

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Hexachloroethane	0.40	U	1	0.80	0.40	0.17	ug/L	07/29/2022 1243
Indeno(1,2,3-c,d)pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	07/29/2022 1243
Isophorone	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
2-Methylnaphthalene	0.10	U	1	0.20	0.10	0.040	ug/L	07/29/2022 1243
2-Methylphenol	1.3	U	1	1.6	1.3	0.67	ug/L	07/29/2022 1243
3+4-Methylphenol	3.0	U	1	4.0	3.0	1.5	ug/L	07/29/2022 1243
Naphthalene	0.10	U	1	0.20	0.10	0.040	ug/L	07/29/2022 1243
2-Nitroaniline	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
3-Nitroaniline	2.0	U	1	3.0	2.0	1.0	ug/L	07/29/2022 1243
4-Nitroaniline	3.0	U	1	4.0	3.0	1.5	ug/L	07/29/2022 1243
Nitrobenzene	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
2-Nitrophenol	2.0	U	1	3.2	2.0	1.0	ug/L	07/29/2022 1243
4-Nitrophenol	4.0	U	1	5.0	4.0	2.0	ug/L	07/29/2022 1243
N-Nitrosodi-n-propylamine	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
N-Nitrosodiphenylamine (Diphenylamine)	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
Pentachlorophenol	4.0	U	1	5.0	4.0	2.0	ug/L	07/29/2022 1243
Phenanthrene	0.10	U	1	0.20	0.10	0.040	ug/L	07/29/2022 1243
Phenol	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
Pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	07/29/2022 1243
2,4,5-Trichlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243
2,4,6-Trichlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	07/29/2022 1243

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		91	44-119
2-Fluorophenol		47	19-119
Nitrobenzene-d5		74	44-120
Phenol-d5		60	10-115
Terphenyl-d14		108	50-134
2,4,6-Tribromophenol		77	43-140

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ49420-002
Batch: 49420
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 07/28/2022 1800

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acenaphthene	8.0	7.2		1	90	47-122	07/29/2022 1308
Acenaphthylene	8.0	7.4		1	93	41-130	07/29/2022 1308
Acetophenone	8.0	7.1		1	89	46-118	07/29/2022 1308
Anthracene	8.0	7.9		1	99	57-123	07/29/2022 1308
Atrazine	8.0	7.2		1	90	44-142	07/29/2022 1308
Benzaldehyde	8.0	3.1		1	39	20-115	07/29/2022 1308
Benzo(a)anthracene	8.0	7.8		1	98	58-125	07/29/2022 1308
Benzo(a)pyrene	8.0	7.6		1	95	54-128	07/29/2022 1308
Benzo(b)fluoranthene	8.0	7.6		1	95	53-131	07/29/2022 1308
Benzo(g,h,i)perylene	8.0	7.8		1	97	50-134	07/29/2022 1308
Benzo(k)fluoranthene	8.0	8.0		1	100	57-129	07/29/2022 1308
1,1'-Biphenyl	8.0	6.9		1	87	49-115	07/29/2022 1308
4-Bromophenyl phenyl ether	8.0	7.0		1	88	55-124	07/29/2022 1308
Butyl benzyl phthalate	8.0	7.9		1	99	53-134	07/29/2022 1308
Caprolactam	8.0	7.2		1	90	44-152	07/29/2022 1308
Carbazole	8.0	7.8		1	98	60-122	07/29/2022 1308
bis (2-Chloro-1-methylethyl) ether	8.0	7.7		1	97	37-130	07/29/2022 1308
4-Chloro-3-methyl phenol	8.0	7.2		1	90	52-119	07/29/2022 1308
4-Chloroaniline	8.0	4.3		1	54	33-117	07/29/2022 1308
bis(2-Chloroethoxy)methane	8.0	6.9		1	86	48-120	07/29/2022 1308
bis(2-Chloroethyl)ether	8.0	7.4		1	92	43-118	07/29/2022 1308
2-Chloronaphthalene	8.0	7.1		1	89	40-116	07/29/2022 1308
2-Chlorophenol	8.0	6.8		1	85	38-117	07/29/2022 1308
4-Chlorophenyl phenyl ether	8.0	8.1		1	101	53-121	07/29/2022 1308
Chrysene	8.0	8.3		1	104	59-123	07/29/2022 1308
Dibenzo(a,h)anthracene	8.0	7.8		1	97	51-134	07/29/2022 1308
Dibenzofuran	8.0	7.1		1	89	53-118	07/29/2022 1308
3,3'-Dichlorobenzidine	8.0	4.8		1	60	27-129	07/29/2022 1308
2,4-Dichlorophenol	8.0	7.0		1	88	47-121	07/29/2022 1308
Diethylphthalate	8.0	8.6		1	107	56-125	07/29/2022 1308
Dimethyl phthalate	8.0	8.3		1	104	45-127	07/29/2022 1308
2,4-Dimethylphenol	8.0	9.3		1	117	31-124	07/29/2022 1308
Di-n-butyl phthalate	8.0	7.8		1	98	59-127	07/29/2022 1308
4,6-Dinitro-2-methylphenol	8.0	7.3		1	92	44-137	07/29/2022 1308
2,4-Dinitrophenol	16	13		1	79	23-143	07/29/2022 1308
2,4-Dinitrotoluene	8.0	8.2		1	102	57-128	07/29/2022 1308
2,6-Dinitrotoluene	8.0	7.7		1	96	57-124	07/29/2022 1308
Di-n-octylphthalate	8.0	6.9		1	87	51-140	07/29/2022 1308
bis(2-Ethylhexyl)phthalate	8.0	7.6		1	95	55-135	07/29/2022 1308
Fluoranthene	8.0	7.8		1	98	57-128	07/29/2022 1308
Fluorene	8.0	7.9		1	99	52-124	07/29/2022 1308
Hexachlorobenzene	8.0	6.4		1	79	53-125	07/29/2022 1308
Hexachlorobutadiene	8.0	6.3		1	78	22-124	07/29/2022 1308
Hexachlorocyclopentadiene	40	24		1	61	16-96	07/29/2022 1308

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ49420-002
Batch: 49420
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 07/28/2022 1800

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Hexachloroethane	8.0	6.0		1	75	21-115	07/29/2022 1308
Indeno(1,2,3-c,d)pyrene	8.0	7.6		1	94	52-134	07/29/2022 1308
Isophorone	8.0	6.4		1	80	42-124	07/29/2022 1308
2-Methylnaphthalene	8.0	7.0		1	87	40-121	07/29/2022 1308
2-Methylphenol	8.0	8.0		1	100	30-117	07/29/2022 1308
3+4-Methylphenol	8.0	6.7		1	83	29-110	07/29/2022 1308
Naphthalene	8.0	7.3		1	91	40-121	07/29/2022 1308
2-Nitroaniline	8.0	6.8		1	85	55-127	07/29/2022 1308
3-Nitroaniline	8.0	4.8		1	60	41-128	07/29/2022 1308
4-Nitroaniline	8.0	7.3		1	91	30-135	07/29/2022 1308
Nitrobenzene	8.0	6.2		1	77	45-121	07/29/2022 1308
2-Nitrophenol	8.0	6.9		1	86	47-123	07/29/2022 1308
4-Nitrophenol	16	13		1	84	53-130	07/29/2022 1308
N-Nitrosodi-n-propylamine	8.0	7.5		1	94	49-119	07/29/2022 1308
N-Nitrosodiphenylamine (Diphenylamine)	8.0	7.4		1	93	51-123	07/29/2022 1308
Pentachlorophenol	16	15		1	93	35-138	07/29/2022 1308
Phenanthrene	8.0	7.7		1	97	59-120	07/29/2022 1308
Phenol	8.0	8.3		1	103	49-117	07/29/2022 1308
Pyrene	8.0	9.0		1	112	57-126	07/29/2022 1308
2,4,5-Trichlorophenol	8.0	8.2		1	103	53-123	07/29/2022 1308
2,4,6-Trichlorophenol	8.0	8.2		1	103	50-125	07/29/2022 1308

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		86	44-119
2-Fluorophenol		77	19-119
Nitrobenzene-d5		77	44-120
Phenol-d5		79	10-115
Terphenyl-d14		102	50-134
2,4,6-Tribromophenol		82	43-140

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCSD

Sample ID: XQ49420-003
Batch: 49420
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 07/28/2022 1800

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acenaphthene	8.0	7.0		1	88	1.8	47-122	20	07/29/2022 1333
Acenaphthylene	8.0	7.3		1	91	1.7	41-130	20	07/29/2022 1333
Acetophenone	8.0	6.4		1	81	9.6	46-118	20	07/29/2022 1333
Anthracene	8.0	7.7		1	97	2.8	57-123	20	07/29/2022 1333
Atrazine	8.0	6.8		1	85	6.7	44-142	20	07/29/2022 1333
Benzaldehyde	8.0	2.7		1	34	13	20-115	20	07/29/2022 1333
Benzo(a)anthracene	8.0	7.4		1	93	5.4	58-125	20	07/29/2022 1333
Benzo(a)pyrene	8.0	7.1		1	89	6.6	54-128	20	07/29/2022 1333
Benzo(b)fluoranthene	8.0	7.2		1	90	5.0	53-131	20	07/29/2022 1333
Benzo(g,h,i)perylene	8.0	7.3		1	91	6.3	50-134	20	07/29/2022 1333
Benzo(k)fluoranthene	8.0	7.5		1	93	6.8	57-129	20	07/29/2022 1333
1,1'-Biphenyl	8.0	6.7		1	84	3.3	49-115	20	07/29/2022 1333
4-Bromophenyl phenyl ether	8.0	6.9		1	86	1.6	55-124	20	07/29/2022 1333
Butyl benzyl phthalate	8.0	7.5		1	94	5.5	53-134	20	07/29/2022 1333
Caprolactam	8.0	7.0		1	87	3.9	44-152	20	07/29/2022 1333
Carbazole	8.0	7.6		1	95	2.9	60-122	20	07/29/2022 1333
bis (2-Chloro-1-methylethyl) ether	8.0	7.0		1	88	9.3	37-130	20	07/29/2022 1333
4-Chloro-3-methyl phenol	8.0	7.1		1	89	1.1	52-119	20	07/29/2022 1333
4-Chloroaniline	8.0	4.1		1	52	3.7	33-117	20	07/29/2022 1333
bis(2-Chloroethoxy)methane	8.0	6.9		1	86	0.79	48-120	20	07/29/2022 1333
bis(2-Chloroethyl)ether	8.0	6.8		1	85	8.3	43-118	20	07/29/2022 1333
2-Chloronaphthalene	8.0	6.8		1	85	4.4	40-116	20	07/29/2022 1333
2-Chlorophenol	8.0	6.7		1	84	1.6	38-117	20	07/29/2022 1333
4-Chlorophenyl phenyl ether	8.0	8.0		1	100	1.9	53-121	20	07/29/2022 1333
Chrysene	8.0	7.9		1	98	6.1	59-123	20	07/29/2022 1333
Dibenzo(a,h)anthracene	8.0	7.2		1	91	6.8	51-134	20	07/29/2022 1333
Dibenzofuran	8.0	7.0		1	88	2.1	53-118	20	07/29/2022 1333
3,3'-Dichlorobenzidine	8.0	4.9		1	62	3.1	27-129	20	07/29/2022 1333
2,4-Dichlorophenol	8.0	6.9		1	86	1.8	47-121	20	07/29/2022 1333
Diethylphthalate	8.0	8.4		1	105	2.0	56-125	20	07/29/2022 1333
Dimethyl phthalate	8.0	8.1		1	101	2.5	45-127	20	07/29/2022 1333
2,4-Dimethylphenol	8.0	8.3		1	103	12	31-124	20	07/29/2022 1333
Di-n-butyl phthalate	8.0	7.6		1	95	3.0	59-127	20	07/29/2022 1333
4,6-Dinitro-2-methylphenol	8.0	7.3		1	91	0.44	44-137	20	07/29/2022 1333
2,4-Dinitrophenol	16	13		1	80	1.1	23-143	20	07/29/2022 1333
2,4-Dinitrotoluene	8.0	8.0		1	100	1.9	57-128	20	07/29/2022 1333
2,6-Dinitrotoluene	8.0	7.6		1	95	0.71	57-124	20	07/29/2022 1333
Di-n-octylphthalate	8.0	6.5		1	81	6.3	51-140	20	07/29/2022 1333
bis(2-Ethylhexyl)phthalate	8.0	7.8		1	98	2.7	55-135	20	07/29/2022 1333
Fluoranthene	8.0	7.5		1	94	3.7	57-128	20	07/29/2022 1333
Fluorene	8.0	7.8		1	97	1.6	52-124	20	07/29/2022 1333
Hexachlorobenzene	8.0	6.3		1	79	0.72	53-125	20	07/29/2022 1333
Hexachlorobutadiene	8.0	6.3		1	78	0.11	22-124	20	07/29/2022 1333
Hexachlorocyclopentadiene	40	24		1	60	1.3	16-96	20	07/29/2022 1333

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCSD

Sample ID: XQ49420-003
Batch: 49420
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 07/28/2022 1800

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Hexachloroethane	8.0	5.9		1	74	1.4	21-115	20	07/29/2022 1333
Indeno(1,2,3-c,d)pyrene	8.0	7.1		1	89	5.6	52-134	20	07/29/2022 1333
Isophorone	8.0	6.4		1	80	0.045	42-124	20	07/29/2022 1333
2-Methylnaphthalene	8.0	6.9		1	86	1.4	40-121	20	07/29/2022 1333
2-Methylphenol	8.0	7.2		1	90	10	30-117	20	07/29/2022 1333
3+4-Methylphenol	8.0	6.0		1	75	10	29-110	20	07/29/2022 1333
Naphthalene	8.0	7.2		1	90	0.43	40-121	20	07/29/2022 1333
2-Nitroaniline	8.0	6.5		1	81	5.3	55-127	20	07/29/2022 1333
3-Nitroaniline	8.0	4.8		1	60	0.041	41-128	20	07/29/2022 1333
4-Nitroaniline	8.0	7.1		1	89	1.7	30-135	20	07/29/2022 1333
Nitrobenzene	8.0	6.1		1	76	1.2	45-121	20	07/29/2022 1333
2-Nitrophenol	8.0	6.8		1	85	0.58	47-123	20	07/29/2022 1333
4-Nitrophenol	16	13		1	82	2.7	53-130	20	07/29/2022 1333
N-Nitrosodi-n-propylamine	8.0	6.8		1	85	10	49-119	20	07/29/2022 1333
N-Nitrosodiphenylamine (Diphenylamine)	8.0	7.1		1	89	3.9	51-123	20	07/29/2022 1333
Pentachlorophenol	16	15		1	92	0.94	35-138	20	07/29/2022 1333
Phenanthrene	8.0	7.5		1	94	2.9	59-120	20	07/29/2022 1333
Phenol	8.0	7.4		1	93	10	49-117	20	07/29/2022 1333
Pyrene	8.0	8.7		1	108	3.9	57-126	20	07/29/2022 1333
2,4,5-Trichlorophenol	8.0	8.2		1	102	0.65	53-123	20	07/29/2022 1333
2,4,6-Trichlorophenol	8.0	8.3		1	104	0.92	50-125	20	07/29/2022 1333

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		79	44-119
2-Fluorophenol		69	19-119
Nitrobenzene-d5		74	44-120
Phenol-d5		70	10-115
Terphenyl-d14		94	50-134
2,4,6-Tribromophenol		79	43-140

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MB

Sample ID: XQ49379-001
Batch: 49379
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 08/01/2022 0032

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Arsenic	2.5	U	1	5.0	2.5	1.3	ug/L	08/08/2022 0245
Barium	2.5	U	1	5.0	2.5	1.3	ug/L	08/08/2022 0245
Cadmium	0.25	U	1	0.50	0.25	0.13	ug/L	08/08/2022 0245
Chromium	2.5	U	1	5.0	2.5	1.3	ug/L	08/08/2022 0245
Lead	0.50	U	1	1.0	0.50	0.25	ug/L	08/08/2022 0245
Selenium	2.5	U	1	5.0	2.5	1.3	ug/L	08/08/2022 0245
Silver	0.50	U	1	1.0	0.50	0.25	ug/L	08/08/2022 0245

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - LCS

Sample ID: XQ49379-002
Batch: 49379
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 08/01/2022 0032

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Arsenic	100	100		1	100	84-116	08/08/2022 0253
Barium	100	100		1	105	86-114	08/08/2022 0253
Cadmium	100	100		1	100	87-115	08/08/2022 0253
Chromium	100	110		1	109	85-116	08/08/2022 0253
Lead	100	110		1	106	88-115	08/08/2022 0253
Selenium	100	94		1	94	80-120	08/08/2022 0253
Silver	100	110		1	112	85-116	08/08/2022 0253

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MB

Sample ID: XQ49920-001
Batch: 49920
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 08/05/2022 0343

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Mercury	0.18	U	1	0.20	0.18	0.091	ug/L	08/05/2022 0703

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - LCS

Sample ID: XQ49920-002
Batch: 49920
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 08/05/2022 0343

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Mercury	2.0	1.9		1	93	82-119	08/05/2022 0706

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - LCSD

Sample ID: XQ49920-003
Batch: 49920
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 08/05/2022 0343

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Mercury	2.0	1.9		1	93	0.43	82-119	20	08/05/2022 0709

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Chain of Custody
and
Miscellaneous Documents

SHEALY

Chain of Custody Record

SHEALY ENVIRONMENTAL SERVICES, INC.
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.shealylab.com

Number 102366

Client: Terracon Consultants Inc	Report to Contact: Ethan Dinwiddie	Telephone No. / E-mail: Ethan.Dinwiddie@Terracon.com	Quote No.: 25322
Address: 2401 Brentwood Rd	Sampler's Signature: X CP	Analysis (Attach list if more space is needed)	Page ___ of ___
City: Raleigh; State: NC; Zip Code: 27604	Printed Name: Chelsea Pawa		XG26017
Project Name: Tunnel Army Missile Plant			CSD
Project No.: 70210145	P.O. No.		

Sample ID / Description (Containers for each sample may be combined on one line.)	Date	Time	G=Grab C=Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	No of Containers by Preservative Type: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc		VOC's 8260	SVOC's 8270	RCRA Metals	Remarks / Cooler I.D.
Tunnel N-01	7/21/22	0805	G	X						X				X			
Tunnel S-02	7/21/22	0840	↓	↓						3				↓			
TAMP-MW-3	7/21/22	1715	↓	↓			2	1	1	3				↓	X	X	

Turn Around Time Required (Prior lab approval required for expedited TAT.) ☒ Standard ☐ Rush (Specify)

Sample Disposal: ☐ Return to Client ☒ Disposal by Lab

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by: Chelsea Pawa	7/25/22	1842	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by: Fedex	07/26/22	1000	4. Laboratory received by: Thayla N Malcolm	07/26/22	1000

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on ice (Circle) Yes No Ice Pack
Receipt Temp. 4.5 °C

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: F-AD-133 Effective Date: 08-01-2014

Pace Analytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: Terracon Cooler Inspected by/date: TEC / 07/26/2022 Lot #: XG26017

Means of receipt: ☐ Pace ☐ Client ☐ UPS ☑ FedEx ☐ Other: _____

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: 21-852 Chlorine Strip ID: NA Tested by: TEC

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: 22-1253

~~9.2~~ ~~4.5~~ °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 6 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☑ Yes	☐ No	☐ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☑ Yes	☐ No	☐ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? _____
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☑ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☑ Yes	☐ No	☐ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote # _____

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA _____ were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA _____.
Time of preservation NA _____. If more than one preservative is needed, please note in the comments below.

Sample(s) NA _____ were received with bubbles >6 mm in diameter.

Samples(s) NA _____ were received with TRC > 0.5 mg/L (If #19 is ***no***) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA _____.

SR barcode labels applied by: KNR Date: 07/26/2022

Comments:

7/29/22

Report of Analysis

Terracon Consultants, Inc.
2401 Brentwood Road
Suite 107 I
Raleigh, NC 27604
Attention: Ethan Dinwiddie

Project Name: TAMP

Project Number: 7021P145

Lot Number:**XH16028**

Date Completed:09/02/2022

09/14/2022 12:48 PM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.
This report shall not be reproduced, except in its entirety, without the written approval of Pace Analytical Services, LLC.

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
Terracon Consultants, Inc.
Lot Number: XH16028

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Additionally, the DoD QSM version 5.3 has been followed for these samples. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs, the DoD QSM, or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

Where applicable, all soil sample results (including LOQ and DL if requested) are corrected for dry weight unless flagged with a "W" qualifier.

VOA 8260D
The initial calibration verification (ICV) associated with samples XH16028-001, XH16028-002, and XH16028-004, exceeded control criteria for Acetone (123%). The data has been reported.

XH16028-001 (IDW-MW-137) (Run 1) (Analysis Batch 51536) TCL VOCs (OLM04.3) (DOD QSM 5.4)
XH16028-002 (IDW-MW-138) (Run 1) (Analysis Batch 51536) TCL VOCs (OLM04.3) (DOD QSM 5.4)
XH16028-004 (IDW-MW-140) (Run 1) (Analysis Batch 51536) TCL VOCs (OLM04.3) (DOD QSM 5.4)

The continuing calibration verification (CCV) associated with sample XH16028-003 (IDW-MW-139), for Acetone (26%) recovered above the upper control limit. The sample associated with this CCV was non-detect for the affected analyte; therefore, the data has been reported.

Insufficient sample volume was available to perform matrix spike/matrix spike duplicate (MS/MSD) for analytical batch 51767. An LCS/LCSD was run in lieu of an MS/MSD.

SVOA with LL PAH (8270E)
The following samples were diluted due to appearance and extract color: XH16028-001 (IDW-MW-137) and XH16028-004 (IDW-MW-140). The LOQ has been elevated to reflect the dilution. The 2-Fluorobiphenyl surrogate recovery for sample XH16028-004 (IDW-MW-140) was marginally below the control limit.

The MS for batch 51370 and parent sample XH16028-001 (IDW-MW-137), recovered outside the lower control limit for 2,4-Dintrotoluene, 2,6-Dinitrotoluene, 2-Nitroaniline and 2,45-Trichlorophenol. The MSD recovered outside the lower control limit for 2,4-Dintrotoluene. The RPD for most analytes was > 20%. The associated LCS passed all acceptance criteria.

Metals 6020B
Due to sample matrix effect on the internal standard (ISTD), a dilution was required for the following samples: XH16028-001, XH16028-002, and XH16028-004. The LOQ has been adjusted accordingly.

XH16028-001 (IDW-MW-137) (Run 2) (Analysis Batch 53080) (Prep Batch 51360)
XH16028-002 (IDW-MW-138) (Run 2) (Analysis Batch 53080) (Prep Batch 51360)
XH16028-004 (IDW-MW-140) (Run 2) (Analysis Batch 53080) (Prep Batch 51360)

The MS/MSD for batch 51360 and parent sample XH16028-003 (IDW-MW-139), recovered outside the control limits for As, Ba, Cd, Cr, Se, and Ag. The RPD for Cr was > 20%. The associated LCS passed acceptance criteria.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Sample Summary

Terracon Consultants, Inc.

Lot Number: XH16028

Project Name: TAMP

Project Number: 7021P145

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	IDW-MW-137	Solid	08/15/2022 1035	08/16/2022
002	IDW-MW-138	Solid	08/15/2022 1040	08/16/2022
003	IDW-MW-139	Solid	08/15/2022 1045	08/16/2022
004	IDW-MW-140	Solid	08/15/2022 1050	08/16/2022

(4 samples)

Detection Summary

Terracon Consultants, Inc.

Lot Number: XH16028

Project Name: TAMP

Project Number: 7021P145

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	IDW-MW-137	Solid	Acetone	8260D	0.023	J	mg/kg	6
001	IDW-MW-137	Solid	Arsenic	6020B	0.52		mg/kg	10
001	IDW-MW-137	Solid	Barium	6020B	50		mg/kg	10
001	IDW-MW-137	Solid	Cadmium	6020B	0.025	J	mg/kg	10
001	IDW-MW-137	Solid	Chromium	6020B	18		mg/kg	10
001	IDW-MW-137	Solid	Lead	6020B	1.2		mg/kg	10
002	IDW-MW-138	Solid	Benzo(a)anthracene	8270E	0.0025	J	mg/kg	13
002	IDW-MW-138	Solid	Benzo(a)pyrene	8270E	0.0022	J	mg/kg	13
002	IDW-MW-138	Solid	Benzo(b)fluoranthene	8270E	0.0024	J	mg/kg	13
002	IDW-MW-138	Solid	Benzo(k)fluoranthene	8270E	0.00091	J	mg/kg	13
002	IDW-MW-138	Solid	Chrysene	8270E	0.0016	J	mg/kg	13
002	IDW-MW-138	Solid	Di-n-butyl phthalate	8270E	0.011	J	mg/kg	13
002	IDW-MW-138	Solid	Fluoranthene	8270E	0.0029	J	mg/kg	13
002	IDW-MW-138	Solid	Pyrene	8270E	0.0026	J	mg/kg	14
002	IDW-MW-138	Solid	Arsenic	6020B	0.61		mg/kg	15
002	IDW-MW-138	Solid	Barium	6020B	120		mg/kg	15
002	IDW-MW-138	Solid	Chromium	6020B	9.3		mg/kg	15
002	IDW-MW-138	Solid	Lead	6020B	3.3		mg/kg	15
003	IDW-MW-139	Solid	Caprolactam	8270E	0.022		mg/kg	18
003	IDW-MW-139	Solid	Fluoranthene	8270E	0.0016	J	mg/kg	18
003	IDW-MW-139	Solid	Pyrene	8270E	0.0016	J	mg/kg	19
003	IDW-MW-139	Solid	Arsenic	6020B	0.64	S	mg/kg	20
003	IDW-MW-139	Solid	Barium	6020B	53	S	mg/kg	20
003	IDW-MW-139	Solid	Chromium	6020B	53	S	mg/kg	20
003	IDW-MW-139	Solid	Lead	6020B	3.0		mg/kg	20
004	IDW-MW-140	Solid	Acetone	8260D	0.022	J	mg/kg	21
004	IDW-MW-140	Solid	Benzo(a)anthracene	8270E	0.016	JQ	mg/kg	23
004	IDW-MW-140	Solid	Benzo(a)pyrene	8270E	0.013	JQ	mg/kg	23
004	IDW-MW-140	Solid	Benzo(b)fluoranthene	8270E	0.015	JQ	mg/kg	23
004	IDW-MW-140	Solid	Benzo(g,h,i)perylene	8270E	0.0086	JQ	mg/kg	23
004	IDW-MW-140	Solid	Benzo(k)fluoranthene	8270E	0.0048	JQ	mg/kg	23
004	IDW-MW-140	Solid	Chrysene	8270E	0.012	JQ	mg/kg	23
004	IDW-MW-140	Solid	Fluoranthene	8270E	0.027	Q	mg/kg	23
004	IDW-MW-140	Solid	Phenanthrene	8270E	0.016	JQ	mg/kg	24
004	IDW-MW-140	Solid	Pyrene	8270E	0.02	Q	mg/kg	24
004	IDW-MW-140	Solid	Arsenic	6020B	0.82		mg/kg	25
004	IDW-MW-140	Solid	Barium	6020B	120		mg/kg	25
004	IDW-MW-140	Solid	Chromium	6020B	120		mg/kg	25
004	IDW-MW-140	Solid	Lead	6020B	1.1		mg/kg	25

(39 detections)

Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16028-001**	
Description: **IDW-MW-137**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1035**	Project Name: **TAMP**	% Solids: **85.4**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	08/18/2022 1407	JM1		51536

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**0.023**	**J**	**0.025**	0.020	**0.0099**	**mg/Kg**	**1**
Benzene	71-43-2	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
Bromoform	75-25-2	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.0072	U	0.012	0.0072	0.0037	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	0.010	U	0.025	0.010	0.0050	mg/Kg	1
Carbon disulfide	75-15-0	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
Chlorobenzene	108-90-7	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
Chloroethane	75-00-3	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
Chloroform	67-66-3	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	0.0072	U	0.012	0.0072	0.0037	mg/Kg	1
Cyclohexane	110-82-7	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	0.0072	U	0.012	0.0072	0.0037	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
Ethylbenzene	100-41-4	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
2-Hexanone	591-78-6	8260D	0.0096	U	0.012	0.0096	0.0050	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
Methyl acetate	79-20-9	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	0.0096	U	0.012	0.0096	0.0050	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
Methylene chloride	75-09-2	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
Styrene	100-42-5	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
Tetrachloroethene	127-18-4	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
Toluene	108-88-3	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
1,1,2-Trichloroethane	79-00-5	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16028-001**	
Description: **IDW-MW-137**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1035**	Project Name: **TAMP**	% Solids: **85.4**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	08/18/2022 1407	JM1		51536

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
Trichlorofluoromethane	75-69-4	8260D	0.0050	U	0.0062	0.0050	0.0025	mg/Kg	1
Vinyl chloride	75-01-4	8260D	0.0072	U	0.012	0.0072	0.0037	mg/Kg	1
Xylenes (total)	1330-20-7	8260D	0.0096	U	0.012	0.0096	0.0050	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		107	79-119
Dibromofluoromethane		87	78-119
1,2-Dichloroethane-d4		87	71-136
Toluene-d8		98	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16028-001**	
Description: **IDW-MW-137**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1035**	Project Name: **TAMP**	% Solids: **85.4**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	5	08/19/2022 1048	CMF	08/17/2022 1255	51370

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.011	U	0.015	0.011	0.0047	mg/Kg	1
Acenaphthylene	208-96-8	8270E	0.011	U	0.015	0.011	0.0054	mg/Kg	1
Acetophenone	98-86-2	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
Anthracene	120-12-7	8270E	0.011	U	0.015	0.011	0.0029	mg/Kg	1
Atrazine	1912-24-9	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
Benzaldehyde	100-52-7	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
Benzo(a)anthracene	56-55-3	8270E	0.011	U	0.015	0.011	0.0034	mg/Kg	1
Benzo(a)pyrene	50-32-8	8270E	0.011	U	0.015	0.011	0.0038	mg/Kg	1
Benzo(b)fluoranthene	205-99-2	8270E	0.011	U	0.015	0.011	0.0029	mg/Kg	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.011	U	0.015	0.011	0.0037	mg/Kg	1
Benzo(k)fluoranthene	207-08-9	8270E	0.0083	U	0.015	0.0083	0.0027	mg/Kg	1
1,1'-Biphenyl	92-52-4	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
Butyl benzyl phthalate	85-68-7	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
Caprolactam	105-60-2	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
Carbazole	86-74-8	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
4-Chloroaniline	106-47-8	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
2-Chloronaphthalene	91-58-7	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
2-Chlorophenol	95-57-8	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
Chrysene	218-01-9	8270E	0.0083	U	0.015	0.0083	0.0026	mg/Kg	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.011	U	0.015	0.011	0.0029	mg/Kg	1
Dibenzofuran	132-64-9	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
2,4-Dichlorophenol	120-83-2	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
Diethylphthalate	84-66-2	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
Dimethyl phthalate	131-11-3	8270E	0.083	U	0.11	0.083	0.042	mg/Kg	1
2,4-Dimethylphenol	105-67-9	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
Di-n-butyl phthalate	84-74-2	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	0.28	U	0.38	0.28	0.14	mg/Kg	1
2,4-Dinitrophenol	51-28-5	8270E	0.28	U	0.38	0.28	0.14	mg/Kg	1
2,4-Dinitrotoluene	121-14-2	8270E	0.11	US	0.15	0.11	0.057	mg/Kg	1
2,6-Dinitrotoluene	606-20-2	8270E	0.11	US	0.15	0.11	0.057	mg/Kg	1
Di-n-octylphthalate	117-84-0	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	0.28	U	0.38	0.28	0.14	mg/Kg	1
Fluoranthene	206-44-0	8270E	0.0083	U	0.015	0.0083	0.0024	mg/Kg	1
Fluorene	86-73-7	8270E	0.011	U	0.015	0.011	0.0033	mg/Kg	1
Hexachlorobenzene	118-74-1	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
Hexachlorobutadiene	87-68-3	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	0.28	U	0.38	0.28	0.14	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16028-001**	
Description: **IDW-MW-137**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1035**	Project Name: **TAMP**	% Solids: **85.4**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	5	08/19/2022 1048	CMF	08/17/2022 1255	51370

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.011	U	0.015	0.011	0.0057	mg/Kg	1
Isophorone	78-59-1	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
2-Methylnaphthalene	91-57-6	8270E	0.011	U	0.015	0.011	0.0056	mg/Kg	1
2-Methylphenol	95-48-7	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
3+4-Methylphenol	106-44-5	8270E	0.11	U	0.15	0.11	0.057	mg/Kg	1
Naphthalene	91-20-3	8270E	0.011	U	0.015	0.011	0.0055	mg/Kg	1
2-Nitroaniline	88-74-4	8270E	0.11	US	0.15	0.11	0.057	mg/Kg	1
3-Nitroaniline	99-09-2	8270E	0.11	U	0.15	0.11	0.057	mg/Kg	1
4-Nitroaniline	100-01-6	8270E	0.11	U	0.15	0.11	0.057	mg/Kg	1
Nitrobenzene	98-95-3	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
2-Nitrophenol	88-75-5	8270E	0.11	U	0.15	0.11	0.057	mg/Kg	1
4-Nitrophenol	100-02-7	8270E	0.28	U	0.38	0.28	0.14	mg/Kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
Pentachlorophenol	87-86-5	8270E	0.28	U	0.38	0.28	0.14	mg/Kg	1
Phenanthrene	85-01-8	8270E	0.011	U	0.015	0.011	0.0041	mg/Kg	1
Phenol	108-95-2	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1
Pyrene	129-00-0	8270E	0.011	U	0.015	0.011	0.0029	mg/Kg	1
2,4,5-Trichlorophenol	95-95-4	8270E	0.057	US	0.074	0.057	0.029	mg/Kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	0.057	U	0.074	0.057	0.029	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		49	44-115
2-Fluorophenol		48	35-115
Nitrobenzene-d5		42	37-122
Phenol-d5		46	33-122
Terphenyl-d14		67	54-127
2,4,6-Tribromophenol		44	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16028-001**	
Description: **IDW-MW-137**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1035**	Project Name: **TAMP**	% Solids: **85.4**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	09/01/2022 1035	BNW	08/18/2022 0053	51360
2	3050B	6020B	10	09/01/2022 1218	BNW	08/18/2022 0053	51360

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**0.52**		**0.39**	0.31	**0.16**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**50**		**1.0**	0.48	**0.24**	**mg/kg**	**1**
Cadmium	**7440-43-9**	**6020B**	**0.025**	**J**	**0.10**	0.048	**0.020**	**mg/kg**	**1**
Chromium	**7440-47-3**	**6020B**	**18**		**1.0**	0.85	**0.43**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**1.2**		**0.20**	0.11	**0.053**	**mg/kg**	**1**
Selenium	7782-49-2	6020B	7.3	U	10	7.3	3.7	mg/kg	2
Silver	7440-22-4	6020B	1.0	U	2.0	1.0	0.47	mg/kg	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16028-002**	
Description: **IDW-MW-138**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1040**	Project Name: **TAMP**	% Solids: **77.3**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	08/18/2022 1430	JM1		51536

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	0.018	U	0.023	0.018	0.0093	mg/Kg	1
Benzene	71-43-2	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
Bromoform	75-25-2	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.0072	U	0.012	0.0072	0.0035	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	0.0092	U	0.023	0.0092	0.0047	mg/Kg	1
Carbon disulfide	75-15-0	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
Chlorobenzene	108-90-7	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
Chloroethane	75-00-3	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
Chloroform	67-66-3	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	0.0072	U	0.012	0.0072	0.0035	mg/Kg	1
Cyclohexane	110-82-7	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	0.0072	U	0.012	0.0072	0.0035	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
Ethylbenzene	100-41-4	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
2-Hexanone	591-78-6	8260D	0.0096	U	0.012	0.0096	0.0047	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
Methyl acetate	79-20-9	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	0.0096	U	0.012	0.0096	0.0047	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
Methylene chloride	75-09-2	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
Styrene	100-42-5	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
Tetrachloroethene	127-18-4	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
Toluene	108-88-3	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
1,1,2-Trichloroethane	79-00-5	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16028-002**	
Description: **IDW-MW-138**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1040**	Project Name: **TAMP**	% Solids: **77.3**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	08/18/2022 1430	JM1		51536

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
Trichlorofluoromethane	75-69-4	8260D	0.0046	U	0.0058	0.0046	0.0023	mg/Kg	1
Vinyl chloride	75-01-4	8260D	0.0072	U	0.012	0.0072	0.0035	mg/Kg	1
Xylenes (total)	1330-20-7	8260D	0.0096	U	0.012	0.0096	0.0047	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		107	79-119
Dibromofluoromethane		83	78-119
1,2-Dichloroethane-d4		86	71-136
Toluene-d8		97	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16028-002**	
Description: **IDW-MW-138**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1040**	Project Name: **TAMP**	% Solids: **77.3**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	1	08/19/2022 1201	CMF	08/17/2022 1255	51370

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.0025	U	0.0034	0.0025	0.0010	mg/Kg	1
Acenaphthylene	208-96-8	8270E	0.0025	U	0.0034	0.0025	0.0012	mg/Kg	1
Acetophenone	98-86-2	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
Anthracene	120-12-7	8270E	0.0025	U	0.0034	0.0025	0.00064	mg/Kg	1
Atrazine	1912-24-9	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
Benzaldehyde	100-52-7	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
Benzo(a)anthracene	**56-55-3**	**8270E**	**0.0025**	**J**	**0.0034**	0.0025	**0.00074**	**mg/Kg**	**1**
Benzo(a)pyrene	**50-32-8**	**8270E**	**0.0022**	**J**	**0.0034**	0.0025	**0.00083**	**mg/Kg**	**1**
Benzo(b)fluoranthene	**205-99-2**	**8270E**	**0.0024**	**J**	**0.0034**	0.0025	**0.00063**	**mg/Kg**	**1**
Benzo(g,h,i)perylene	191-24-2	8270E	0.0025	U	0.0034	0.0025	0.00082	mg/Kg	1
Benzo(k)fluoranthene	**207-08-9**	**8270E**	**0.00091**	**J**	**0.0034**	0.0019	**0.00060**	**mg/Kg**	**1**
1,1'-Biphenyl	92-52-4	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
Butyl benzyl phthalate	85-68-7	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
Caprolactam	105-60-2	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
Carbazole	86-74-8	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
4-Chloroaniline	106-47-8	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
2-Chloronaphthalene	91-58-7	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
2-Chlorophenol	95-57-8	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
Chrysene	**218-01-9**	**8270E**	**0.0016**	**J**	**0.0034**	0.0019	**0.00057**	**mg/Kg**	**1**
Dibenzo(a,h)anthracene	53-70-3	8270E	0.0025	U	0.0034	0.0025	0.00064	mg/Kg	1
Dibenzofuran	132-64-9	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
2,4-Dichlorophenol	120-83-2	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
Diethylphthalate	84-66-2	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
Dimethyl phthalate	131-11-3	8270E	0.019	U	0.025	0.019	0.0093	mg/Kg	1
2,4-Dimethylphenol	105-67-9	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
Di-n-butyl phthalate	**84-74-2**	**8270E**	**0.011**	**J**	**0.016**	0.012	**0.0063**	**mg/Kg**	**1**
4,6-Dinitro-2-methylphenol	534-52-1	8270E	0.063	U	0.084	0.063	0.032	mg/Kg	1
2,4-Dinitrophenol	51-28-5	8270E	0.063	U	0.084	0.063	0.032	mg/Kg	1
2,4-Dinitrotoluene	121-14-2	8270E	0.025	U	0.034	0.025	0.013	mg/Kg	1
2,6-Dinitrotoluene	606-20-2	8270E	0.025	U	0.034	0.025	0.013	mg/Kg	1
Di-n-octylphthalate	117-84-0	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	0.063	U	0.084	0.063	0.032	mg/Kg	1
Fluoranthene	**206-44-0**	**8270E**	**0.0029**	**J**	**0.0034**	0.0019	**0.00053**	**mg/Kg**	**1**
Fluorene	86-73-7	8270E	0.0025	U	0.0034	0.0025	0.00072	mg/Kg	1
Hexachlorobenzene	118-74-1	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
Hexachlorobutadiene	87-68-3	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	0.063	U	0.084	0.063	0.032	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16028-002**	
Description: **IDW-MW-138**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1040**	Project Name: **TAMP**	% Solids: **77.3**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	1	08/19/2022 1201	CMF	08/17/2022 1255	51370

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.0025	U	0.0034	0.0025	0.0013	mg/Kg	1
Isophorone	78-59-1	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
2-Methylnaphthalene	91-57-6	8270E	0.0025	U	0.0034	0.0025	0.0012	mg/Kg	1
2-Methylphenol	95-48-7	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
3+4-Methylphenol	106-44-5	8270E	0.025	U	0.034	0.025	0.013	mg/Kg	1
Naphthalene	91-20-3	8270E	0.0025	U	0.0034	0.0025	0.0012	mg/Kg	1
2-Nitroaniline	88-74-4	8270E	0.025	U	0.034	0.025	0.013	mg/Kg	1
3-Nitroaniline	99-09-2	8270E	0.025	U	0.034	0.025	0.013	mg/Kg	1
4-Nitroaniline	100-01-6	8270E	0.025	U	0.034	0.025	0.013	mg/Kg	1
Nitrobenzene	98-95-3	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
2-Nitrophenol	88-75-5	8270E	0.025	U	0.034	0.025	0.013	mg/Kg	1
4-Nitrophenol	100-02-7	8270E	0.063	U	0.084	0.063	0.032	mg/Kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
Pentachlorophenol	87-86-5	8270E	0.063	U	0.084	0.063	0.032	mg/Kg	1
Phenanthrene	85-01-8	8270E	0.0025	U	0.0034	0.0025	0.00091	mg/Kg	1
Phenol	108-95-2	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
Pyrene	**129-00-0**	**8270E**	**0.0026**	**J**	**0.0034**	0.0025	**0.00063**	**mg/Kg**	**1**
2,4,5-Trichlorophenol	95-95-4	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	0.012	U	0.016	0.012	0.0063	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		53	44-115
2-Fluorophenol		57	35-115
Nitrobenzene-d5		49	37-122
Phenol-d5		53	33-122
Terphenyl-d14		78	54-127
2,4,6-Tribromophenol		64	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16028-002**	
Description: **IDW-MW-138**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1040**	Project Name: **TAMP**	% Solids: **77.3**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	09/01/2022 1043	BNW	08/18/2022 0053	51360
2	3050B	6020B	10	09/01/2022 1227	BNW	08/18/2022 0053	51360

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**0.61**		**0.44**	0.35	**0.18**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**120**		**11**	5.3	**2.7**	**mg/kg**	**2**
Cadmium	7440-43-9	6020B	0.053	U	0.11	0.053	0.022	mg/kg	1
Chromium	**7440-47-3**	**6020B**	**9.3**		**1.1**	0.94	**0.49**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**3.3**		**0.22**	0.12	**0.060**	**mg/kg**	**1**
Selenium	7782-49-2	6020B	8.0	U	11	8.0	4.2	mg/kg	2
Silver	7440-22-4	6020B	1.1	U	2.2	1.1	0.53	mg/kg	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16028-003**	
Description: **IDW-MW-139**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1045**	Project Name: **TAMP**	% Solids: **81.7**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5035	8260D	1	08/20/2022 2002	BBW		51767

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	0.014	U	0.017	0.014	0.0067	mg/Kg	2
Benzene	71-43-2	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
Bromodichloromethane	75-27-4	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
Bromoform	75-25-2	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.0050	U	0.0084	0.0050	0.0025	mg/Kg	2
2-Butanone (MEK)	78-93-3	8260D	0.0068	U	0.017	0.0068	0.0034	mg/Kg	2
Carbon disulfide	75-15-0	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
Carbon tetrachloride	56-23-5	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
Chlorobenzene	108-90-7	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
Chloroethane	75-00-3	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
Chloroform	67-66-3	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
Chloromethane (Methyl chloride)	74-87-3	8260D	0.0050	U	0.0084	0.0050	0.0025	mg/Kg	2
Cyclohexane	110-82-7	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
Dibromochloromethane	124-48-1	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
1,2-Dichlorobenzene	95-50-1	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
1,3-Dichlorobenzene	541-73-1	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
1,4-Dichlorobenzene	106-46-7	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
Dichlorodifluoromethane	75-71-8	8260D	0.0050	U	0.0084	0.0050	0.0025	mg/Kg	2
1,1-Dichloroethane	75-34-3	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
1,2-Dichloroethane	107-06-2	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
1,1-Dichloroethene	75-35-4	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
cis-1,2-Dichloroethene	156-59-2	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
trans-1,2-Dichloroethene	156-60-5	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
1,2-Dichloropropane	78-87-5	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
Ethylbenzene	100-41-4	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
2-Hexanone	591-78-6	8260D	0.0067	U	0.0084	0.0067	0.0034	mg/Kg	2
Isopropylbenzene	98-82-8	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
Methyl acetate	79-20-9	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
4-Methyl-2-pentanone	108-10-1	8260D	0.0067	U	0.0084	0.0067	0.0034	mg/Kg	2
Methylcyclohexane	108-87-2	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
Methylene chloride	75-09-2	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
Styrene	100-42-5	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
Tetrachloroethene	127-18-4	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
Toluene	108-88-3	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
1,1,1-Trichloroethane	71-55-6	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
1,1,2-Trichloroethane	79-00-5	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16028-003**	
Description: **IDW-MW-139**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1045**	Project Name: **TAMP**	% Solids: **81.7**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5035	8260D	1	08/20/2022 2002	BBW		51767

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
Trichlorofluoromethane	75-69-4	8260D	0.0034	U	0.0042	0.0034	0.0017	mg/Kg	2
Vinyl chloride	75-01-4	8260D	0.0050	U	0.0084	0.0050	0.0025	mg/Kg	2
Xylenes (total)	1330-20-7	8260D	0.0067	U	0.0084	0.0067	0.0034	mg/Kg	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		87	79-119
Dibromofluoromethane		101	78-119
1,2-Dichloroethane-d4		96	71-136
Toluene-d8		103	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16028-003**	
Description: **IDW-MW-139**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1045**	Project Name: **TAMP**	% Solids: **81.7**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	1	08/19/2022 1226	CMF	08/17/2022 1255	51370

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.0024	U	0.0032	0.0024	0.00098	mg/Kg	1
Acenaphthylene	208-96-8	8270E	0.0024	U	0.0032	0.0024	0.0011	mg/Kg	1
Acetophenone	98-86-2	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
Anthracene	120-12-7	8270E	0.0024	U	0.0032	0.0024	0.00060	mg/Kg	1
Atrazine	1912-24-9	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
Benzaldehyde	100-52-7	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
Benzo(a)anthracene	56-55-3	8270E	0.0024	U	0.0032	0.0024	0.00069	mg/Kg	1
Benzo(a)pyrene	50-32-8	8270E	0.0024	U	0.0032	0.0024	0.00078	mg/Kg	1
Benzo(b)fluoranthene	205-99-2	8270E	0.0024	U	0.0032	0.0024	0.00059	mg/Kg	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.0024	U	0.0032	0.0024	0.00077	mg/Kg	1
Benzo(k)fluoranthene	207-08-9	8270E	0.0018	U	0.0032	0.0018	0.00057	mg/Kg	1
1,1'-Biphenyl	92-52-4	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
Butyl benzyl phthalate	85-68-7	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
Caprolactam	**105-60-2**	**8270E**	**0.022**		**0.015**	0.012	**0.0059**	**mg/Kg**	**1**
Carbazole	86-74-8	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
4-Chloroaniline	106-47-8	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
2-Chloronaphthalene	91-58-7	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
2-Chlorophenol	95-57-8	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
Chrysene	218-01-9	8270E	0.0018	U	0.0032	0.0018	0.00053	mg/Kg	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.0024	U	0.0032	0.0024	0.00060	mg/Kg	1
Dibenzofuran	132-64-9	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
2,4-Dichlorophenol	120-83-2	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
Diethylphthalate	84-66-2	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
Dimethyl phthalate	131-11-3	8270E	0.018	U	0.024	0.018	0.0087	mg/Kg	1
2,4-Dimethylphenol	105-67-9	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
Di-n-butyl phthalate	84-74-2	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	0.059	U	0.079	0.059	0.029	mg/Kg	1
2,4-Dinitrophenol	51-28-5	8270E	0.059	U	0.079	0.059	0.029	mg/Kg	1
2,4-Dinitrotoluene	121-14-2	8270E	0.024	U	0.032	0.024	0.012	mg/Kg	1
2,6-Dinitrotoluene	606-20-2	8270E	0.024	U	0.032	0.024	0.012	mg/Kg	1
Di-n-octylphthalate	117-84-0	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	0.059	U	0.079	0.059	0.029	mg/Kg	1
Fluoranthene	**206-44-0**	**8270E**	**0.0016**	**J**	**0.0032**	0.0018	**0.00049**	**mg/Kg**	**1**
Fluorene	86-73-7	8270E	0.0024	U	0.0032	0.0024	0.00067	mg/Kg	1
Hexachlorobenzene	118-74-1	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
Hexachlorobutadiene	87-68-3	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	0.059	U	0.079	0.059	0.029	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16028-003**	
Description: **IDW-MW-139**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1045**	Project Name: **TAMP**	% Solids: **81.7**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	1	08/19/2022 1226	CMF	08/17/2022 1255	51370

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.0024	U	0.0032	0.0024	0.0012	mg/Kg	1
Isophorone	78-59-1	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
2-Methylnaphthalene	91-57-6	8270E	0.0024	U	0.0032	0.0024	0.0012	mg/Kg	1
2-Methylphenol	95-48-7	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
3+4-Methylphenol	106-44-5	8270E	0.024	U	0.032	0.024	0.012	mg/Kg	1
Naphthalene	91-20-3	8270E	0.0024	U	0.0032	0.0024	0.0011	mg/Kg	1
2-Nitroaniline	88-74-4	8270E	0.024	U	0.032	0.024	0.012	mg/Kg	1
3-Nitroaniline	99-09-2	8270E	0.024	U	0.032	0.024	0.012	mg/Kg	1
4-Nitroaniline	100-01-6	8270E	0.024	U	0.032	0.024	0.012	mg/Kg	1
Nitrobenzene	98-95-3	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
2-Nitrophenol	88-75-5	8270E	0.024	U	0.032	0.024	0.012	mg/Kg	1
4-Nitrophenol	100-02-7	8270E	0.059	U	0.079	0.059	0.029	mg/Kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
Pentachlorophenol	87-86-5	8270E	0.059	U	0.079	0.059	0.029	mg/Kg	1
Phenanthrene	85-01-8	8270E	0.0024	U	0.0032	0.0024	0.00085	mg/Kg	1
Phenol	108-95-2	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
Pyrene	**129-00-0**	**8270E**	**0.0016**	**J**	**0.0032**	0.0024	**0.00059**	**mg/Kg**	**1**
2,4,5-Trichlorophenol	95-95-4	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	0.012	U	0.015	0.012	0.0059	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		48	44-115
2-Fluorophenol		58	35-115
Nitrobenzene-d5		48	37-122
Phenol-d5		56	33-122
Terphenyl-d14		71	54-127
2,4,6-Tribromophenol		59	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16028-003**	
Description: **IDW-MW-139**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1045**	Project Name: **TAMP**	% Solids: **81.7**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	09/01/2022 1052	BNW	08/18/2022 0053	51360

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**0.64**	**S**	**0.42**	0.34	**0.17**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**53**	**S**	**1.1**	0.53	**0.26**	**mg/kg**	**1**
Cadmium	7440-43-9	6020B	0.053	US	0.11	0.053	0.021	mg/kg	1
Chromium	**7440-47-3**	**6020B**	**53**	**S**	**1.1**	0.94	**0.46**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**3.0**		**0.21**	0.11	**0.057**	**mg/kg**	**1**
Selenium	7782-49-2	6020B	0.80	US	1.1	0.80	0.39	mg/kg	1
Silver	7440-22-4	6020B	0.11	US	0.21	0.11	0.050	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16028-004**	
Description: **IDW-MW-140**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1050**	Project Name: **TAMP**	% Solids: **79.3**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	08/18/2022 1515	JM1		51536

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**0.022**	**J**	**0.023**	0.018	**0.0090**	**mg/Kg**	**1**
Benzene	71-43-2	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
Bromoform	75-25-2	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.0066	U	0.011	0.0066	0.0034	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	0.0092	U	0.023	0.0092	0.0045	mg/Kg	1
Carbon disulfide	75-15-0	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
Chlorobenzene	108-90-7	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
Chloroethane	75-00-3	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
Chloroform	67-66-3	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	0.0066	U	0.011	0.0066	0.0034	mg/Kg	1
Cyclohexane	110-82-7	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	0.0066	U	0.011	0.0066	0.0034	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
Ethylbenzene	100-41-4	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
2-Hexanone	591-78-6	8260D	0.0088	U	0.011	0.0088	0.0045	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
Methyl acetate	79-20-9	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	0.0088	U	0.011	0.0088	0.0045	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
Methylene chloride	75-09-2	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
Styrene	100-42-5	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
Tetrachloroethene	127-18-4	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
Toluene	108-88-3	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
1,1,2-Trichloroethane	79-00-5	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16028-004**	
Description: **IDW-MW-140**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1050**	Project Name: **TAMP**	% Solids: **79.3**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	08/18/2022 1515	JM1		51536

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
Trichlorofluoromethane	75-69-4	8260D	0.0045	U	0.0056	0.0045	0.0023	mg/Kg	1
Vinyl chloride	75-01-4	8260D	0.0066	U	0.011	0.0066	0.0034	mg/Kg	1
Xylenes (total)	1330-20-7	8260D	0.0088	U	0.011	0.0088	0.0045	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		110	79-119
Dibromofluoromethane		88	78-119
1,2-Dichloroethane-d4		89	71-136
Toluene-d8		98	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16028-004**	
Description: **IDW-MW-140**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1050**	Project Name: **TAMP**	% Solids: **79.3**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	5	08/19/2022 1251	CMF	08/17/2022 1255	51370

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.013	UQ	0.017	0.013	0.0052	mg/Kg	1
Acenaphthylene	208-96-8	8270E	0.013	UQ	0.017	0.013	0.0060	mg/Kg	1
Acetophenone	98-86-2	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
Anthracene	120-12-7	8270E	0.013	UQ	0.017	0.013	0.0032	mg/Kg	1
Atrazine	1912-24-9	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
Benzaldehyde	100-52-7	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
Benzo(a)anthracene	**56-55-3**	**8270E**	**0.016**	**JQ**	**0.017**	0.013	**0.0037**	**mg/Kg**	**1**
Benzo(a)pyrene	**50-32-8**	**8270E**	**0.013**	**JQ**	**0.017**	0.013	**0.0041**	**mg/Kg**	**1**
Benzo(b)fluoranthene	**205-99-2**	**8270E**	**0.015**	**JQ**	**0.017**	0.013	**0.0031**	**mg/Kg**	**1**
Benzo(g,h,i)perylene	**191-24-2**	**8270E**	**0.0086**	**JQ**	**0.017**	0.013	**0.0041**	**mg/Kg**	**1**
Benzo(k)fluoranthene	**207-08-9**	**8270E**	**0.0048**	**JQ**	**0.017**	0.0094	**0.0030**	**mg/Kg**	**1**
1,1'-Biphenyl	92-52-4	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
Butyl benzyl phthalate	85-68-7	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
Caprolactam	105-60-2	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
Carbazole	86-74-8	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
4-Chloroaniline	106-47-8	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
2-Chloronaphthalene	91-58-7	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
2-Chlorophenol	95-57-8	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
Chrysene	**218-01-9**	**8270E**	**0.012**	**JQ**	**0.017**	0.0094	**0.0028**	**mg/Kg**	**1**
Dibenzo(a,h)anthracene	53-70-3	8270E	0.013	UQ	0.017	0.013	0.0032	mg/Kg	1
Dibenzofuran	132-64-9	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
2,4-Dichlorophenol	120-83-2	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
Diethylphthalate	84-66-2	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
Dimethyl phthalate	131-11-3	8270E	0.098	UQ	0.13	0.098	0.046	mg/Kg	1
2,4-Dimethylphenol	105-67-9	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
Di-n-butyl phthalate	84-74-2	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	0.31	UQ	0.42	0.31	0.16	mg/Kg	1
2,4-Dinitrophenol	51-28-5	8270E	0.31	UQ	0.42	0.31	0.16	mg/Kg	1
2,4-Dinitrotoluene	121-14-2	8270E	0.13	UQ	0.17	0.13	0.063	mg/Kg	1
2,6-Dinitrotoluene	606-20-2	8270E	0.13	UQ	0.17	0.13	0.063	mg/Kg	1
Di-n-octylphthalate	117-84-0	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	0.31	UQ	0.42	0.31	0.16	mg/Kg	1
Fluoranthene	**206-44-0**	**8270E**	**0.027**	**Q**	**0.017**	0.0094	**0.0026**	**mg/Kg**	**1**
Fluorene	86-73-7	8270E	0.013	UQ	0.017	0.013	0.0036	mg/Kg	1
Hexachlorobenzene	118-74-1	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
Hexachlorobutadiene	87-68-3	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	0.31	UQ	0.42	0.31	0.16	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16028-004**	
Description: **IDW-MW-140**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1050**	Project Name: **TAMP**	% Solids: **79.3**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	5	08/19/2022 1251	CMF	08/17/2022 1255	51370

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.013	UQ	0.017	0.013	0.0063	mg/Kg	1
Isophorone	78-59-1	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
2-Methylnaphthalene	91-57-6	8270E	0.013	UQ	0.017	0.013	0.0062	mg/Kg	1
2-Methylphenol	95-48-7	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
3+4-Methylphenol	106-44-5	8270E	0.13	UQ	0.17	0.13	0.063	mg/Kg	1
Naphthalene	91-20-3	8270E	0.013	UQ	0.017	0.013	0.0061	mg/Kg	1
2-Nitroaniline	88-74-4	8270E	0.13	UQ	0.17	0.13	0.063	mg/Kg	1
3-Nitroaniline	99-09-2	8270E	0.13	UQ	0.17	0.13	0.063	mg/Kg	1
4-Nitroaniline	100-01-6	8270E	0.13	UQ	0.17	0.13	0.063	mg/Kg	1
Nitrobenzene	98-95-3	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
2-Nitrophenol	88-75-5	8270E	0.13	UQ	0.17	0.13	0.063	mg/Kg	1
4-Nitrophenol	100-02-7	8270E	0.31	UQ	0.42	0.31	0.16	mg/Kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
Pentachlorophenol	87-86-5	8270E	0.31	UQ	0.42	0.31	0.16	mg/Kg	1
Phenanthrene	**85-01-8**	**8270E**	**0.016**	**JQ**	**0.017**	0.013	**0.0045**	**mg/Kg**	**1**
Phenol	108-95-2	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
Pyrene	**129-00-0**	**8270E**	**0.020**	**Q**	**0.017**	0.013	**0.0031**	**mg/Kg**	**1**
2,4,5-Trichlorophenol	95-95-4	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	0.062	UQ	0.081	0.062	0.031	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl	N	37	44-115
2-Fluorophenol		40	35-115
Nitrobenzene-d5		39	37-122
Phenol-d5		37	33-122
Terphenyl-d14		60	54-127
2,4,6-Tribromophenol		46	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16028-004**	
Description: **IDW-MW-140**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1050**	Project Name: **TAMP**	% Solids: **79.3**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	09/01/2022 1152	BNW	08/18/2022 0053	51360
2	3050B	6020B	10	09/01/2022 1244	BNW	08/18/2022 0053	51360

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**0.82**		**0.45**	0.36	**0.18**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**120**		**12**	5.8	**2.8**	**mg/kg**	**2**
Cadmium	7440-43-9	6020B	0.058	U	0.12	0.058	0.022	mg/kg	1
Chromium	**7440-47-3**	**6020B**	**120**		**12**	10	**5.0**	**mg/kg**	**2**
Lead	**7439-92-1**	**6020B**	**1.1**		**0.22**	0.12	**0.061**	**mg/kg**	**1**
Selenium	7782-49-2	6020B	0.87	U	1.2	0.87	0.42	mg/kg	1
Silver	7440-22-4	6020B	0.11	U	0.22	0.11	0.054	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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QC Summary

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51536-001
Batch: 51536
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	0.016	U	1	0.020	0.016	0.0080	mg/kg	08/18/2022 0955
Benzene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Bromodichloromethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Bromoform	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Bromomethane (Methyl bromide)	0.0060	U	1	0.010	0.0060	0.0030	mg/kg	08/18/2022 0955
2-Butanone (MEK)	0.0080	U	1	0.020	0.0080	0.0040	mg/kg	08/18/2022 0955
Carbon disulfide	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Carbon tetrachloride	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Chlorobenzene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Chloroethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Chloroform	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Chloromethane (Methyl chloride)	0.0060	U	1	0.010	0.0060	0.0030	mg/kg	08/18/2022 0955
Cyclohexane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
1,2-Dibromo-3-chloropropane (DBCP)	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Dibromochloromethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
1,2-Dibromoethane (EDB)	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
1,2-Dichlorobenzene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
1,3-Dichlorobenzene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
1,4-Dichlorobenzene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Dichlorodifluoromethane	0.0060	U	1	0.010	0.0060	0.0030	mg/kg	08/18/2022 0955
1,1-Dichloroethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
1,2-Dichloroethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
1,1-Dichloroethene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
cis-1,2-Dichloroethene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
trans-1,2-Dichloroethene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
1,2-Dichloropropane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
cis-1,3-Dichloropropene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
trans-1,3-Dichloropropene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Ethylbenzene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
2-Hexanone	0.0080	U	1	0.010	0.0080	0.0040	mg/kg	08/18/2022 0955
Isopropylbenzene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Methyl acetate	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Methyl tertiary butyl ether (MTBE)	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
4-Methyl-2-pentanone	0.0080	U	1	0.010	0.0080	0.0040	mg/kg	08/18/2022 0955
Methylcyclohexane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Methylene chloride	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Styrene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
1,1,2,2-Tetrachloroethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Tetrachloroethene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Toluene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
1,2,4-Trichlorobenzene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
1,1,1-Trichloroethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
1,1,2-Trichloroethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51536-001
Batch: 51536
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Trichlorofluoromethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Vinyl chloride	0.0060	U	1	0.010	0.0060	0.0030	mg/kg	08/18/2022 0955
Xylenes (total)	0.0080	U	1	0.010	0.0080	0.0040	mg/kg	08/18/2022 0955

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		107	79-119
Dibromofluoromethane		86	78-119
1,2-Dichloroethane-d4		88	71-136
Toluene-d8		99	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51536-002
Batch: 51536
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	0.10	0.12		1	116	36-164	08/18/2022 0908
Benzene	0.050	0.049		1	97	77-121	08/18/2022 0908
Bromodichloromethane	0.050	0.048		1	96	75-127	08/18/2022 0908
Bromoform	0.050	0.049		1	98	67-132	08/18/2022 0908
Bromomethane (Methyl bromide)	0.050	0.051		1	101	53-143	08/18/2022 0908
2-Butanone (MEK)	0.10	0.10		1	103	51-148	08/18/2022 0908
Carbon disulfide	0.050	0.046		1	93	63-132	08/18/2022 0908
Carbon tetrachloride	0.050	0.048		1	96	70-135	08/18/2022 0908
Chlorobenzene	0.050	0.049		1	97	79-120	08/18/2022 0908
Chloroethane	0.050	0.050		1	100	59-139	08/18/2022 0908
Chloroform	0.050	0.046		1	92	78-123	08/18/2022 0908
Chloromethane (Methyl chloride)	0.050	0.054		1	107	50-136	08/18/2022 0908
Cyclohexane	0.050	0.041		1	81	67-131	08/18/2022 0908
1,2-Dibromo-3-chloropropane (DBCP)	0.050	0.044		1	87	61-132	08/18/2022 0908
Dibromochloromethane	0.050	0.048		1	96	75-127	08/18/2022 0908
1,2-Dibromoethane (EDB)	0.050	0.048		1	95	78-122	08/18/2022 0908
1,2-Dichlorobenzene	0.050	0.048		1	95	78-121	08/18/2022 0908
1,3-Dichlorobenzene	0.050	0.048		1	96	77-121	08/18/2022 0908
1,4-Dichlorobenzene	0.050	0.047		1	94	75-120	08/18/2022 0908
Dichlorodifluoromethane	0.050	0.047		1	94	29-149	08/18/2022 0908
1,1-Dichloroethane	0.050	0.047		1	94	76-125	08/18/2022 0908
1,2-Dichloroethane	0.050	0.046		1	93	73-128	08/18/2022 0908
1,1-Dichloroethene	0.050	0.047		1	95	70-131	08/18/2022 0908
cis-1,2-Dichloroethene	0.050	0.047		1	94	77-123	08/18/2022 0908
trans-1,2-Dichloroethene	0.050	0.047		1	94	74-125	08/18/2022 0908
1,2-Dichloropropane	0.050	0.047		1	94	76-123	08/18/2022 0908
cis-1,3-Dichloropropene	0.050	0.048		1	97	74-126	08/18/2022 0908
trans-1,3-Dichloropropene	0.050	0.048		1	96	71-130	08/18/2022 0908
Ethylbenzene	0.050	0.050		1	100	76-122	08/18/2022 0908
2-Hexanone	0.10	0.10		1	100	53-145	08/18/2022 0908
Isopropylbenzene	0.050	0.050		1	100	68-134	08/18/2022 0908
Methyl acetate	0.050	0.045		1	90	53-144	08/18/2022 0908
Methyl tertiary butyl ether (MTBE)	0.050	0.049		1	98	73-125	08/18/2022 0908
4-Methyl-2-pentanone	0.10	0.095		1	95	65-135	08/18/2022 0908
Methylcyclohexane	0.050	0.043		1	87	66-133	08/18/2022 0908
Methylene chloride	0.050	0.046		1	91	70-128	08/18/2022 0908
Styrene	0.050	0.050		1	100	76-124	08/18/2022 0908
1,1,2,2-Tetrachloroethane	0.050	0.046		1	92	70-124	08/18/2022 0908
Tetrachloroethene	0.050	0.050		1	100	73-128	08/18/2022 0908
Toluene	0.050	0.049		1	99	77-121	08/18/2022 0908
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.050	0.043		1	86	66-136	08/18/2022 0908
1,2,4-Trichlorobenzene	0.050	0.047		1	94	67-129	08/18/2022 0908
1,1,1-Trichloroethane	0.050	0.048		1	97	73-130	08/18/2022 0908
1,1,2-Trichloroethane	0.050	0.048		1	95	78-121	08/18/2022 0908

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51536-002
Batch: 51536
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	0.050	0.049		1	98	77-123	08/18/2022 0908
Trichlorofluoromethane	0.050	0.050		1	99	62-140	08/18/2022 0908
Vinyl chloride	0.050	0.051		1	103	56-135	08/18/2022 0908
Xylenes (total)	0.10	0.099		1	99	78-124	08/18/2022 0908

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		111	79-119
Dibromofluoromethane		99	78-119
1,2-Dichloroethane-d4		99	71-136
Toluene-d8		103	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51767-001
Batch: 51767
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	0.016	U	1	0.020	0.016	0.0080	mg/kg	08/20/2022 1850
Benzene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
Bromodichloromethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
Bromoform	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
Bromomethane (Methyl bromide)	0.0060	U	1	0.010	0.0060	0.0030	mg/kg	08/20/2022 1850
2-Butanone (MEK)	0.0080	U	1	0.020	0.0080	0.0040	mg/kg	08/20/2022 1850
Carbon disulfide	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
Carbon tetrachloride	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
Chlorobenzene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
Chloroethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
Chloroform	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
Chloromethane (Methyl chloride)	0.0060	U	1	0.010	0.0060	0.0030	mg/kg	08/20/2022 1850
Cyclohexane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
1,2-Dibromo-3-chloropropane (DBCP)	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
Dibromochloromethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
1,2-Dibromoethane (EDB)	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
1,2-Dichlorobenzene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
1,3-Dichlorobenzene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
1,4-Dichlorobenzene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
Dichlorodifluoromethane	0.0060	U	1	0.010	0.0060	0.0030	mg/kg	08/20/2022 1850
1,1-Dichloroethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
1,2-Dichloroethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
1,1-Dichloroethene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
cis-1,2-Dichloroethene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
trans-1,2-Dichloroethene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
1,2-Dichloropropane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
cis-1,3-Dichloropropene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
trans-1,3-Dichloropropene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
Ethylbenzene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
2-Hexanone	0.0080	U	1	0.010	0.0080	0.0040	mg/kg	08/20/2022 1850
Isopropylbenzene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
Methyl acetate	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
Methyl tertiary butyl ether (MTBE)	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
4-Methyl-2-pentanone	0.0080	U	1	0.010	0.0080	0.0040	mg/kg	08/20/2022 1850
Methylcyclohexane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
Methylene chloride	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
Styrene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
1,1,2,2-Tetrachloroethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
Tetrachloroethene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
Toluene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
1,2,4-Trichlorobenzene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
1,1,1-Trichloroethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
1,1,2-Trichloroethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51767-001
Batch: 51767
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
Trichlorofluoromethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/20/2022 1850
Vinyl chloride	0.0060	U	1	0.010	0.0060	0.0030	mg/kg	08/20/2022 1850
Xylenes (total)	0.0080	U	1	0.010	0.0080	0.0040	mg/kg	08/20/2022 1850

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		86	79-119
Dibromofluoromethane		93	78-119
1,2-Dichloroethane-d4		95	71-136
Toluene-d8		96	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51767-002
Batch: 51767
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	0.10	0.13		1	126	36-164	08/20/2022 1803
Benzene	0.050	0.050		1	99	77-121	08/20/2022 1803
Bromodichloromethane	0.050	0.049		1	99	75-127	08/20/2022 1803
Bromoform	0.050	0.047		1	94	67-132	08/20/2022 1803
Bromomethane (Methyl bromide)	0.050	0.046		1	92	53-143	08/20/2022 1803
2-Butanone (MEK)	0.10	0.12		1	116	51-148	08/20/2022 1803
Carbon disulfide	0.050	0.050		1	99	63-132	08/20/2022 1803
Carbon tetrachloride	0.050	0.049		1	98	70-135	08/20/2022 1803
Chlorobenzene	0.050	0.050		1	99	79-120	08/20/2022 1803
Chloroethane	0.050	0.048		1	96	59-139	08/20/2022 1803
Chloroform	0.050	0.047		1	93	78-123	08/20/2022 1803
Chloromethane (Methyl chloride)	0.050	0.048		1	95	50-136	08/20/2022 1803
Cyclohexane	0.050	0.051		1	101	67-131	08/20/2022 1803
1,2-Dibromo-3-chloropropane (DBCP)	0.050	0.052		1	104	61-132	08/20/2022 1803
Dibromochloromethane	0.050	0.053		1	105	75-127	08/20/2022 1803
1,2-Dibromoethane (EDB)	0.050	0.049		1	98	78-122	08/20/2022 1803
1,2-Dichlorobenzene	0.050	0.050		1	99	78-121	08/20/2022 1803
1,3-Dichlorobenzene	0.050	0.050		1	100	77-121	08/20/2022 1803
1,4-Dichlorobenzene	0.050	0.050		1	99	75-120	08/20/2022 1803
Dichlorodifluoromethane	0.050	0.057		1	113	29-149	08/20/2022 1803
1,1-Dichloroethane	0.050	0.045		1	90	76-125	08/20/2022 1803
1,2-Dichloroethane	0.050	0.049		1	97	73-128	08/20/2022 1803
1,1-Dichloroethene	0.050	0.048		1	96	70-131	08/20/2022 1803
cis-1,2-Dichloroethene	0.050	0.046		1	91	77-123	08/20/2022 1803
trans-1,2-Dichloroethene	0.050	0.047		1	94	74-125	08/20/2022 1803
1,2-Dichloropropane	0.050	0.049		1	98	76-123	08/20/2022 1803
cis-1,3-Dichloropropene	0.050	0.049		1	98	74-126	08/20/2022 1803
trans-1,3-Dichloropropene	0.050	0.051		1	102	71-130	08/20/2022 1803
Ethylbenzene	0.050	0.051		1	103	76-122	08/20/2022 1803
2-Hexanone	0.10	0.11		1	111	53-145	08/20/2022 1803
Isopropylbenzene	0.050	0.050		1	100	68-134	08/20/2022 1803
Methyl acetate	0.050	0.046		1	93	53-144	08/20/2022 1803
Methyl tertiary butyl ether (MTBE)	0.050	0.045		1	90	73-125	08/20/2022 1803
4-Methyl-2-pentanone	0.10	0.095		1	95	65-135	08/20/2022 1803
Methylcyclohexane	0.050	0.053		1	106	66-133	08/20/2022 1803
Methylene chloride	0.050	0.044		1	87	70-128	08/20/2022 1803
Styrene	0.050	0.051		1	101	76-124	08/20/2022 1803
1,1,2,2-Tetrachloroethane	0.050	0.048		1	95	70-124	08/20/2022 1803
Tetrachloroethene	0.050	0.052		1	104	73-128	08/20/2022 1803
Toluene	0.050	0.050		1	99	77-121	08/20/2022 1803
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.050	0.051		1	103	66-136	08/20/2022 1803
1,2,4-Trichlorobenzene	0.050	0.052		1	103	67-129	08/20/2022 1803
1,1,1-Trichloroethane	0.050	0.047		1	94	73-130	08/20/2022 1803
1,1,2-Trichloroethane	0.050	0.048		1	96	78-121	08/20/2022 1803

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51767-002
Batch: 51767
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	0.050	0.049		1	98	77-123	08/20/2022 1803
Trichlorofluoromethane	0.050	0.052		1	104	62-140	08/20/2022 1803
Vinyl chloride	0.050	0.048		1	96	56-135	08/20/2022 1803
Xylenes (total)	0.10	0.10		1	102	78-124	08/20/2022 1803

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		98	79-119
Dibromofluoromethane		90	78-119
1,2-Dichloroethane-d4		96	71-136
Toluene-d8		99	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: XQ51767-003
Batch: 51767
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acetone	0.10	0.12		1	119	5.9	36-164	20	08/20/2022 1826
Benzene	0.050	0.051		1	102	3.3	77-121	20	08/20/2022 1826
Bromodichloromethane	0.050	0.053		1	106	7.1	75-127	20	08/20/2022 1826
Bromoform	0.050	0.047		1	95	0.66	67-132	20	08/20/2022 1826
Bromomethane (Methyl bromide)	0.050	0.052		1	104	12	53-143	20	08/20/2022 1826
2-Butanone (MEK)	0.10	0.12		1	117	1.1	51-148	20	08/20/2022 1826
Carbon disulfide	0.050	0.054		1	108	8.9	63-132	20	08/20/2022 1826
Carbon tetrachloride	0.050	0.053		1	107	9.1	70-135	20	08/20/2022 1826
Chlorobenzene	0.050	0.050		1	99	0.38	79-120	20	08/20/2022 1826
Chloroethane	0.050	0.053		1	105	8.8	59-139	20	08/20/2022 1826
Chloroform	0.050	0.050		1	100	7.1	78-123	20	08/20/2022 1826
Chloromethane (Methyl chloride)	0.050	0.055		1	109	14	50-136	20	08/20/2022 1826
Cyclohexane	0.050	0.054		1	107	5.9	67-131	20	08/20/2022 1826
1,2-Dibromo-3-chloropropane (DBCP)	0.050	0.054		1	108	4.0	61-132	20	08/20/2022 1826
Dibromochloromethane	0.050	0.052		1	104	0.56	75-127	20	08/20/2022 1826
1,2-Dibromoethane (EDB)	0.050	0.050		1	101	2.3	78-122	20	08/20/2022 1826
1,2-Dichlorobenzene	0.050	0.050		1	101	1.5	78-121	20	08/20/2022 1826
1,3-Dichlorobenzene	0.050	0.050		1	100	0.096	77-121	20	08/20/2022 1826
1,4-Dichlorobenzene	0.050	0.050		1	100	0.64	75-120	20	08/20/2022 1826
Dichlorodifluoromethane	0.050	0.061		1	121	6.5	29-149	20	08/20/2022 1826
1,1-Dichloroethane	0.050	0.051		1	101	11	76-125	20	08/20/2022 1826
1,2-Dichloroethane	0.050	0.051		1	102	4.6	73-128	20	08/20/2022 1826
1,1-Dichloroethene	0.050	0.052		1	104	8.2	70-131	20	08/20/2022 1826
cis-1,2-Dichloroethene	0.050	0.050		1	101	9.9	77-123	20	08/20/2022 1826
trans-1,2-Dichloroethene	0.050	0.052		1	103	9.6	74-125	20	08/20/2022 1826
1,2-Dichloropropane	0.050	0.052		1	103	5.2	76-123	20	08/20/2022 1826
cis-1,3-Dichloropropene	0.050	0.052		1	104	6.0	74-126	20	08/20/2022 1826
trans-1,3-Dichloropropene	0.050	0.051		1	102	0.54	71-130	20	08/20/2022 1826
Ethylbenzene	0.050	0.050		1	100	2.2	76-122	20	08/20/2022 1826
2-Hexanone	0.10	0.11		1	107	3.9	53-145	20	08/20/2022 1826
Isopropylbenzene	0.050	0.049		1	98	2.3	68-134	20	08/20/2022 1826
Methyl acetate	0.050	0.053		1	107	14	53-144	20	08/20/2022 1826
Methyl tertiary butyl ether (MTBE)	0.050	0.052		1	104	14	73-125	20	08/20/2022 1826
4-Methyl-2-pentanone	0.10	0.11		1	107	12	65-135	20	08/20/2022 1826
Methylcyclohexane	0.050	0.055		1	109	3.4	66-133	20	08/20/2022 1826
Methylene chloride	0.050	0.048		1	96	9.2	70-128	20	08/20/2022 1826
Styrene	0.050	0.051		1	102	0.56	76-124	20	08/20/2022 1826
1,1,2,2-Tetrachloroethane	0.050	0.049		1	99	3.9	70-124	20	08/20/2022 1826
Tetrachloroethene	0.050	0.050		1	101	3.4	73-128	20	08/20/2022 1826
Toluene	0.050	0.052		1	103	4.1	77-121	20	08/20/2022 1826
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.050	0.055		1	110	7.2	66-136	20	08/20/2022 1826
1,2,4-Trichlorobenzene	0.050	0.055		1	111	7.0	67-129	20	08/20/2022 1826
1,1,1-Trichloroethane	0.050	0.052		1	105	11	73-130	20	08/20/2022 1826
1,1,2-Trichloroethane	0.050	0.049		1	98	2.6	78-121	20	08/20/2022 1826

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: XQ51767-003
Batch: 51767
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Trichloroethene	0.050	0.051		1	102	4.2	77-123	20	08/20/2022 1826
Trichlorofluoromethane	0.050	0.058		1	115	10	62-140	20	08/20/2022 1826
Vinyl chloride	0.050	0.055		1	109	12	56-135	20	08/20/2022 1826
Xylenes (total)	0.10	0.10		1	101	1.3	78-124	20	08/20/2022 1826

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		97	79-119
Dibromofluoromethane		96	78-119
1,2-Dichloroethane-d4		100	71-136
Toluene-d8		95	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ51370-001
Batch: 51370
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 08/17/2022 1255

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acenaphthene	0.0020	U	1	0.0027	0.0020	0.00083	mg/kg	08/19/2022 0959
Acenaphthylene	0.0020	U	1	0.0027	0.0020	0.00095	mg/kg	08/19/2022 0959
Acetophenone	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Anthracene	0.0020	U	1	0.0027	0.0020	0.00051	mg/kg	08/19/2022 0959
Atrazine	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Benzaldehyde	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Benzo(a)anthracene	0.0020	U	1	0.0027	0.0020	0.00059	mg/kg	08/19/2022 0959
Benzo(a)pyrene	0.0020	U	1	0.0027	0.0020	0.00066	mg/kg	08/19/2022 0959
Benzo(b)fluoranthene	0.0020	U	1	0.0027	0.0020	0.00050	mg/kg	08/19/2022 0959
Benzo(g,h,i)perylene	0.0020	U	1	0.0027	0.0020	0.00065	mg/kg	08/19/2022 0959
Benzo(k)fluoranthene	0.0015	U	1	0.0027	0.0015	0.00048	mg/kg	08/19/2022 0959
1,1'-Biphenyl	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
4-Bromophenyl phenyl ether	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Butyl benzyl phthalate	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Caprolactam	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Carbazole	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
bis (2-Chloro-1-methylethyl) ether	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
4-Chloro-3-methyl phenol	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
4-Chloroaniline	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
bis(2-Chloroethoxy)methane	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
bis(2-Chloroethyl)ether	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
2-Chloronaphthalene	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
2-Chlorophenol	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
4-Chlorophenyl phenyl ether	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Chrysene	0.0015	U	1	0.0027	0.0015	0.00045	mg/kg	08/19/2022 0959
Dibenzo(a,h)anthracene	0.0020	U	1	0.0027	0.0020	0.00051	mg/kg	08/19/2022 0959
Dibenzofuran	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
3,3'-Dichlorobenzidine	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
2,4-Dichlorophenol	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Diethylphthalate	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Dimethyl phthalate	0.015	U	1	0.020	0.015	0.0074	mg/kg	08/19/2022 0959
2,4-Dimethylphenol	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Di-n-butyl phthalate	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
4,6-Dinitro-2-methylphenol	0.050	U	1	0.067	0.050	0.025	mg/kg	08/19/2022 0959
2,4-Dinitrophenol	0.050	U	1	0.067	0.050	0.025	mg/kg	08/19/2022 0959
2,4-Dinitrotoluene	0.020	U	1	0.027	0.020	0.010	mg/kg	08/19/2022 0959
2,6-Dinitrotoluene	0.020	U	1	0.027	0.020	0.010	mg/kg	08/19/2022 0959
Di-n-octylphthalate	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
bis(2-Ethylhexyl)phthalate	0.050	U	1	0.067	0.050	0.025	mg/kg	08/19/2022 0959
Fluoranthene	0.0015	U	1	0.0027	0.0015	0.00042	mg/kg	08/19/2022 0959
Fluorene	0.0020	U	1	0.0027	0.0020	0.00057	mg/kg	08/19/2022 0959
Hexachlorobenzene	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Hexachlorobutadiene	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Hexachlorocyclopentadiene	0.050	U	1	0.067	0.050	0.025	mg/kg	08/19/2022 0959

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ51370-001
Batch: 51370
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 08/17/2022 1255

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Hexachloroethane	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Indeno(1,2,3-c,d)pyrene	0.0020	U	1	0.0027	0.0020	0.0010	mg/kg	08/19/2022 0959
Isophorone	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
2-Methylnaphthalene	0.0020	U	1	0.0027	0.0020	0.00099	mg/kg	08/19/2022 0959
2-Methylphenol	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
3+4-Methylphenol	0.020	U	1	0.027	0.020	0.010	mg/kg	08/19/2022 0959
Naphthalene	0.0020	U	1	0.0027	0.0020	0.00097	mg/kg	08/19/2022 0959
2-Nitroaniline	0.020	U	1	0.027	0.020	0.010	mg/kg	08/19/2022 0959
3-Nitroaniline	0.020	U	1	0.027	0.020	0.010	mg/kg	08/19/2022 0959
4-Nitroaniline	0.020	U	1	0.027	0.020	0.010	mg/kg	08/19/2022 0959
Nitrobenzene	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
2-Nitrophenol	0.020	U	1	0.027	0.020	0.010	mg/kg	08/19/2022 0959
4-Nitrophenol	0.050	U	1	0.067	0.050	0.025	mg/kg	08/19/2022 0959
N-Nitrosodi-n-propylamine	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
N-Nitrosodiphenylamine (Diphenylamine)	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Pentachlorophenol	0.050	U	1	0.067	0.050	0.025	mg/kg	08/19/2022 0959
Phenanthrene	0.0020	U	1	0.0027	0.0020	0.00072	mg/kg	08/19/2022 0959
Phenol	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Pyrene	0.0020	U	1	0.0027	0.0020	0.00050	mg/kg	08/19/2022 0959
2,4,5-Trichlorophenol	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
2,4,6-Trichlorophenol	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		66	44-115
2-Fluorophenol		71	35-115
Nitrobenzene-d5		62	37-122
Phenol-d5		70	33-122
Terphenyl-d14		103	54-127
2,4,6-Tribromophenol		75	39-132

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

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* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51370-002
Batch: 51370
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 08/17/2022 1255

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acenaphthene	0.13	0.090		1	68	40-123	08/19/2022 1023
Acenaphthylene	0.13	0.10		1	76	32-132	08/19/2022 1023
Acetophenone	0.13	0.088		1	66	33-115	08/19/2022 1023
Anthracene	0.13	0.10		1	78	47-123	08/19/2022 1023
Atrazine	0.13	0.11		1	79	47-127	08/19/2022 1023
Benzaldehyde	0.13	0.077		1	58	10-110	08/19/2022 1023
Benzo(a)anthracene	0.13	0.11		1	80	49-126	08/19/2022 1023
Benzo(a)pyrene	0.13	0.11		1	83	45-129	08/19/2022 1023
Benzo(b)fluoranthene	0.13	0.11		1	80	45-132	08/19/2022 1023
Benzo(g,h,i)perylene	0.13	0.11		1	85	43-134	08/19/2022 1023
Benzo(k)fluoranthene	0.13	0.10		1	78	47-132	08/19/2022 1023
1,1'-Biphenyl	0.13	0.089		1	67	40-117	08/19/2022 1023
4-Bromophenyl phenyl ether	0.13	0.10		1	75	46-124	08/19/2022 1023
Butyl benzyl phthalate	0.13	0.11		1	85	48-132	08/19/2022 1023
Caprolactam	0.13	0.11		1	83	46-117	08/19/2022 1023
Carbazole	0.13	0.11		1	80	50-123	08/19/2022 1023
bis (2-Chloro-1-methylethyl) ether	0.13	0.085		1	64	33-131	08/19/2022 1023
4-Chloro-3-methyl phenol	0.13	0.10		1	78	45-122	08/19/2022 1023
4-Chloroaniline	0.13	0.066		1	50	17-106	08/19/2022 1023
bis(2-Chloroethoxy)methane	0.13	0.098		1	74	36-121	08/19/2022 1023
bis(2-Chloroethyl)ether	0.13	0.091		1	68	31-120	08/19/2022 1023
2-Chloronaphthalene	0.13	0.090		1	68	41-114	08/19/2022 1023
2-Chlorophenol	0.13	0.092		1	69	34-121	08/19/2022 1023
4-Chlorophenyl phenyl ether	0.13	0.10		1	75	45-121	08/19/2022 1023
Chrysene	0.13	0.10		1	76	50-124	08/19/2022 1023
Dibenzo(a,h)anthracene	0.13	0.11		1	81	45-134	08/19/2022 1023
Dibenzofuran	0.13	0.089		1	67	44-120	08/19/2022 1023
3,3'-Dichlorobenzidine	0.13	0.085		1	64	22-121	08/19/2022 1023
2,4-Dichlorophenol	0.13	0.096		1	72	40-122	08/19/2022 1023
Diethylphthalate	0.13	0.11		1	79	50-124	08/19/2022 1023
Dimethyl phthalate	0.13	0.10		1	79	48-124	08/19/2022 1023
2,4-Dimethylphenol	0.13	0.14		1	104	30-127	08/19/2022 1023
Di-n-butyl phthalate	0.13	0.11		1	81	51-128	08/19/2022 1023
4,6-Dinitro-2-methylphenol	0.13	0.086		1	65	29-132	08/19/2022 1023
2,4-Dinitrophenol	0.27	0.14		1	52	10-113	08/19/2022 1023
2,4-Dinitrotoluene	0.13	0.10		1	76	48-126	08/19/2022 1023
2,6-Dinitrotoluene	0.13	0.096		1	72	46-124	08/19/2022 1023
Di-n-octylphthalate	0.13	0.11		1	82	45-140	08/19/2022 1023
bis(2-Ethylhexyl)phthalate	0.13	0.13		1	95	51-133	08/19/2022 1023
Fluoranthene	0.13	0.10		1	76	50-127	08/19/2022 1023
Fluorene	0.13	0.095		1	72	43-125	08/19/2022 1023
Hexachlorobenzene	0.13	0.096		1	72	45-122	08/19/2022 1023
Hexachlorobutadiene	0.13	0.085		1	64	32-123	08/19/2022 1023
Hexachlorocyclopentadiene	0.67	0.39		1	58	18-121	08/19/2022 1023

LOQ = Limit of Quantitation
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LOD = Limit of Detection

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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51370-002
Batch: 51370
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 08/17/2022 1255

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Hexachloroethane	0.13	0.088		1	66	28-117	08/19/2022 1023
Indeno(1,2,3-c,d)pyrene	0.13	0.11		1	82	45-133	08/19/2022 1023
Isophorone	0.13	0.094		1	71	30-122	08/19/2022 1023
2-Methylnaphthalene	0.13	0.094		1	70	38-122	08/19/2022 1023
2-Methylphenol	0.13	0.11		1	83	32-122	08/19/2022 1023
3+4-Methylphenol	0.13	0.11		1	80	34-119	08/19/2022 1023
Naphthalene	0.13	0.090		1	68	35-123	08/19/2022 1023
2-Nitroaniline	0.13	0.11		1	82	44-127	08/19/2022 1023
3-Nitroaniline	0.13	0.073		1	55	33-119	08/19/2022 1023
4-Nitroaniline	0.13	0.10		1	76	50-150	08/19/2022 1023
Nitrobenzene	0.13	0.074		1	55	34-122	08/19/2022 1023
2-Nitrophenol	0.13	0.089		1	67	36-123	08/19/2022 1023
4-Nitrophenol	0.27	0.15		1	55	30-132	08/19/2022 1023
N-Nitrosodi-n-propylamine	0.13	0.10		1	76	36-120	08/19/2022 1023
N-Nitrosodiphenylamine (Diphenylamine)	0.13	0.11		1	80	38-127	08/19/2022 1023
Pentachlorophenol	0.27	0.17		1	62	25-133	08/19/2022 1023
Phenanthrene	0.13	0.098		1	74	50-121	08/19/2022 1023
Phenol	0.13	0.097		1	73	34-121	08/19/2022 1023
Pyrene	0.13	0.11		1	81	47-127	08/19/2022 1023
2,4,5-Trichlorophenol	0.13	0.097		1	73	41-124	08/19/2022 1023
2,4,6-Trichlorophenol	0.13	0.093		1	70	39-126	08/19/2022 1023

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		70	44-115
2-Fluorophenol		69	35-115
Nitrobenzene-d5		67	37-122
Phenol-d5		70	33-122
Terphenyl-d14		97	54-127
2,4,6-Tribromophenol		74	39-132

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MS

Sample ID: XH16028-001MS
Batch: 51370
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 08/17/2022 1255

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acenaphthene	ND	0.15	0.070		5	46	40-123	08/19/2022 1112
Acenaphthylene	ND	0.15	0.072		5	47	32-132	08/19/2022 1112
Acetophenone	ND	0.15	0.059		5	39	33-115	08/19/2022 1112
Anthracene	ND	0.15	0.079		5	52	47-123	08/19/2022 1112
Atrazine	ND	0.15	0.078		5	51	47-127	08/19/2022 1112
Benzaldehyde	ND	0.15	0.070		5	46	10-110	08/19/2022 1112
Benzo(a)anthracene	ND	0.15	0.082		5	54	49-126	08/19/2022 1112
Benzo(a)pyrene	ND	0.15	0.084		5	55	45-129	08/19/2022 1112
Benzo(b)fluoranthene	ND	0.15	0.078		5	51	45-132	08/19/2022 1112
Benzo(g,h,i)perylene	ND	0.15	0.083		5	54	43-134	08/19/2022 1112
Benzo(k)fluoranthene	ND	0.15	0.077		5	50	47-132	08/19/2022 1112
1,1'-Biphenyl	ND	0.15	0.066		5	44	40-117	08/19/2022 1112
4-Bromophenyl phenyl ether	ND	0.15	0.077		5	51	46-124	08/19/2022 1112
Butyl benzyl phthalate	ND	0.15	0.11		5	71	48-132	08/19/2022 1112
Caprolactam	ND	0.15	0.070		5	46	46-117	08/19/2022 1112
Carbazole	ND	0.15	0.077		5	51	50-123	08/19/2022 1112
bis (2-Chloro-1-methylethyl) ether	ND	0.15	0.063		5	41	33-131	08/19/2022 1112
4-Chloro-3-methyl phenol	ND	0.15	0.069		5	45	45-122	08/19/2022 1112
4-Chloroaniline	ND	0.15	0.042		5	27	17-106	08/19/2022 1112
bis(2-Chloroethoxy)methane	ND	0.15	0.070		5	46	36-121	08/19/2022 1112
bis(2-Chloroethyl)ether	ND	0.15	0.066		5	43	31-120	08/19/2022 1112
2-Chloronaphthalene	ND	0.15	0.067		5	44	41-114	08/19/2022 1112
2-Chlorophenol	ND	0.15	0.063		5	41	34-121	08/19/2022 1112
4-Chlorophenyl phenyl ether	ND	0.15	0.073		5	48	45-121	08/19/2022 1112
Chrysene	ND	0.15	0.082		5	54	50-124	08/19/2022 1112
Dibenzo(a,h)anthracene	ND	0.15	0.080		5	53	45-134	08/19/2022 1112
Dibenzofuran	ND	0.15	0.067		5	44	44-120	08/19/2022 1112
3,3'-Dichlorobenzidine	ND	0.15	0.069		5	45	22-121	08/19/2022 1112
2,4-Dichlorophenol	ND	0.15	0.062		5	40	40-122	08/19/2022 1112
Diethylphthalate	ND	0.15	0.078		5	51	50-124	08/19/2022 1112
Dimethyl phthalate	ND	0.15	0.076		5	50	48-124	08/19/2022 1112
2,4-Dimethylphenol	ND	0.15	0.10		5	66	30-127	08/19/2022 1112
Di-n-butyl phthalate	ND	0.15	0.086		5	56	51-128	08/19/2022 1112
4,6-Dinitro-2-methylphenol	ND	0.15	0.11		5	70	29-132	08/19/2022 1112
2,4-Dinitrophenol	ND	0.31	0.21		5	68	10-113	08/19/2022 1112
2,4-Dinitrotoluene	ND	0.15	0.052	N	5	34	48-126	08/19/2022 1112
2,6-Dinitrotoluene	ND	0.15	0.059	N	5	38	46-124	08/19/2022 1112
Di-n-octylphthalate	ND	0.15	0.11		5	75	45-140	08/19/2022 1112
bis(2-Ethylhexyl)phthalate	ND	0.15	0.091		5	60	51-133	08/19/2022 1112
Fluoranthene	ND	0.15	0.084		5	55	50-127	08/19/2022 1112
Fluorene	ND	0.15	0.074		5	48	43-125	08/19/2022 1112
Hexachlorobenzene	ND	0.15	0.073		5	48	45-122	08/19/2022 1112
Hexachlorobutadiene	ND	0.15	0.061		5	40	32-123	08/19/2022 1112
Hexachlorocyclopentadiene	ND	0.77	0.37		5	48	18-121	08/19/2022 1112

LOQ = Limit of Quantitation
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LOD = Limit of Detection

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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MS

Sample ID: XH16028-001MS
Batch: 51370
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 08/17/2022 1255

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Hexachloroethane	ND	0.15	0.068		5	45	28-117	08/19/2022 1112
Indeno(1,2,3-c,d)pyrene	ND	0.15	0.080		5	53	45-133	08/19/2022 1112
Isophorone	ND	0.15	0.061		5	40	30-122	08/19/2022 1112
2-Methylnaphthalene	ND	0.15	0.069		5	46	38-122	08/19/2022 1112
2-Methylphenol	ND	0.15	0.082		5	54	32-122	08/19/2022 1112
3+4-Methylphenol	ND	0.15	0.061		5	40	34-119	08/19/2022 1112
Naphthalene	ND	0.15	0.068		5	45	35-123	08/19/2022 1112
2-Nitroaniline	ND	0.15	0.059	N	5	39	44-127	08/19/2022 1112
3-Nitroaniline	ND	0.15	0.060		5	39	33-119	08/19/2022 1112
4-Nitroaniline	ND	0.15	0.096		5	63	48-127	08/19/2022 1112
Nitrobenzene	ND	0.15	0.052		5	34	34-122	08/19/2022 1112
2-Nitrophenol	ND	0.15	0.056		5	36	36-123	08/19/2022 1112
4-Nitrophenol	ND	0.31	0.10		5	33	30-132	08/19/2022 1112
N-Nitrosodi-n-propylamine	ND	0.15	0.066		5	43	36-120	08/19/2022 1112
N-Nitrosodiphenylamine (Diphenylamine)	ND	0.15	0.084		5	55	38-127	08/19/2022 1112
Pentachlorophenol	ND	0.31	0.11		5	35	25-133	08/19/2022 1112
Phenanthrene	ND	0.15	0.077		5	50	50-121	08/19/2022 1112
Phenol	ND	0.15	0.062		5	40	34-121	08/19/2022 1112
Pyrene	ND	0.15	0.082		5	54	47-127	08/19/2022 1112
2,4,5-Trichlorophenol	ND	0.15	0.056	N	5	37	41-124	08/19/2022 1112
2,4,6-Trichlorophenol	ND	0.15	0.063		5	41	39-126	08/19/2022 1112

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		44	44-115
2-Fluorophenol		40	35-115
Nitrobenzene-d5		41	37-122
Phenol-d5		39	33-122
Terphenyl-d14		56	54-127
2,4,6-Tribromophenol		45	39-132

LOQ = Limit of Quantitation
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LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MSD

Sample ID: XH16028-001MD
Batch: 51370
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 08/17/2022 1255

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acenaphthene	ND	0.15	0.11	+	5	71	44	40-123	20	08/19/2022 1137
Acenaphthylene	ND	0.15	0.12	+	5	76	46	32-132	20	08/19/2022 1137
Acetophenone	ND	0.15	0.11	+	5	73	61	33-115	20	08/19/2022 1137
Anthracene	ND	0.15	0.13	+	5	82	45	47-123	20	08/19/2022 1137
Atrazine	ND	0.15	0.12	+	5	80	45	47-127	20	08/19/2022 1137
Benzaldehyde	ND	0.15	0.10	+	5	68	39	10-110	20	08/19/2022 1137
Benzo(a)anthracene	ND	0.15	0.12	+	5	81	40	49-126	20	08/19/2022 1137
Benzo(a)pyrene	ND	0.15	0.13	+	5	84	42	45-129	20	08/19/2022 1137
Benzo(b)fluoranthene	ND	0.15	0.12	+	5	78	41	45-132	20	08/19/2022 1137
Benzo(g,h,i)perylene	ND	0.15	0.12	+	5	79	37	43-134	20	08/19/2022 1137
Benzo(k)fluoranthene	ND	0.15	0.12	+	5	79	44	47-132	20	08/19/2022 1137
1,1'-Biphenyl	ND	0.15	0.10	+	5	68	44	40-117	20	08/19/2022 1137
4-Bromophenyl phenyl ether	ND	0.15	0.12	+	5	79	44	46-124	20	08/19/2022 1137
Butyl benzyl phthalate	ND	0.15	0.18	+	5	117	48	48-132	20	08/19/2022 1137
Caprolactam	ND	0.15	0.11	+	5	73	46	46-117	20	08/19/2022 1137
Carbazole	ND	0.15	0.12	+	5	81	46	50-123	20	08/19/2022 1137
bis (2-Chloro-1-methylethyl) ether	ND	0.15	0.11	+	5	73	56	33-131	20	08/19/2022 1137
4-Chloro-3-methyl phenol	ND	0.15	0.12	+	5	76	50	45-122	20	08/19/2022 1137
4-Chloroaniline	ND	0.15	0.071	+	5	46	51	17-106	20	08/19/2022 1137
bis(2-Chloroethoxy)methane	ND	0.15	0.11	+	5	73	45	36-121	20	08/19/2022 1137
bis(2-Chloroethyl)ether	ND	0.15	0.11	+	5	74	52	31-120	20	08/19/2022 1137
2-Chloronaphthalene	ND	0.15	0.11	+	5	70	45	41-114	20	08/19/2022 1137
2-Chlorophenol	ND	0.15	0.11	+	5	73	55	34-121	20	08/19/2022 1137
4-Chlorophenyl phenyl ether	ND	0.15	0.12	+	5	76	45	45-121	20	08/19/2022 1137
Chrysene	ND	0.15	0.12	+	5	79	38	50-124	20	08/19/2022 1137
Dibenzo(a,h)anthracene	ND	0.15	0.12	+	5	79	41	45-134	20	08/19/2022 1137
Dibenzofuran	ND	0.15	0.11	+	5	69	45	44-120	20	08/19/2022 1137
3,3'-Dichlorobenzidine	ND	0.15	0.10	+	5	67	38	22-121	20	08/19/2022 1137
2,4-Dichlorophenol	ND	0.15	0.10	+	5	68	50	40-122	20	08/19/2022 1137
Diethylphthalate	ND	0.15	0.12	+	5	78	42	50-124	20	08/19/2022 1137
Dimethyl phthalate	ND	0.15	0.12	+	5	78	44	48-124	20	08/19/2022 1137
2,4-Dimethylphenol	ND	0.15	0.16	+	5	108	48	30-127	20	08/19/2022 1137
Di-n-butyl phthalate	ND	0.15	0.13	+	5	88	44	51-128	20	08/19/2022 1137
4,6-Dinitro-2-methylphenol	ND	0.15	0.11		5	70	0.74	29-132	20	08/19/2022 1137
2,4-Dinitrophenol	ND	0.31	0.21		5	68	0.16	10-113	20	08/19/2022 1137
2,4-Dinitrotoluene	ND	0.15	0.068	N,+	5	45	27	48-126	20	08/19/2022 1137
2,6-Dinitrotoluene	ND	0.15	0.081	+	5	53	32	46-124	20	08/19/2022 1137
Di-n-octylphthalate	ND	0.15	0.15	+	5	101	29	45-140	20	08/19/2022 1137
bis(2-Ethylhexyl)phthalate	ND	0.15	0.15	+	5	96	47	51-133	20	08/19/2022 1137
Fluoranthene	ND	0.15	0.12	+	5	81	39	50-127	20	08/19/2022 1137
Fluorene	ND	0.15	0.11	+	5	74	42	43-125	20	08/19/2022 1137
Hexachlorobenzene	ND	0.15	0.12	+	5	75	44	45-122	20	08/19/2022 1137
Hexachlorobutadiene	ND	0.15	0.10	+	5	65	48	32-123	20	08/19/2022 1137
Hexachlorocyclopentadiene	ND	0.77	0.42		5	55	13	18-121	20	08/19/2022 1137

LOQ = Limit of Quantitation
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LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MSD

Sample ID: XH16028-001MD
Batch: 51370
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 08/17/2022 1255

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Hexachloroethane	ND	0.15	0.10	+	5	65	37	28-117	20	08/19/2022 1137
Indeno(1,2,3-c,d)pyrene	ND	0.15	0.12	+	5	81	42	45-133	20	08/19/2022 1137
Isophorone	ND	0.15	0.10	+	5	67	52	30-122	20	08/19/2022 1137
2-Methylnaphthalene	ND	0.15	0.11	+	5	73	46	38-122	20	08/19/2022 1137
2-Methylphenol	ND	0.15	0.16	+	5	107	67	32-122	20	08/19/2022 1137
3+4-Methylphenol	ND	0.15	0.12	+	5	79	66	34-119	20	08/19/2022 1137
Naphthalene	ND	0.15	0.11	+	5	70	45	35-123	20	08/19/2022 1137
2-Nitroaniline	ND	0.15	0.088	+	5	57	39	44-127	20	08/19/2022 1137
3-Nitroaniline	ND	0.15	0.088	+	5	58	38	33-119	20	08/19/2022 1137
4-Nitroaniline	ND	0.15	0.11		5	74	16	48-127	20	08/19/2022 1137
Nitrobenzene	ND	0.15	0.075	+	5	49	36	34-122	20	08/19/2022 1137
2-Nitrophenol	ND	0.15	0.073	+	5	48	27	36-123	20	08/19/2022 1137
4-Nitrophenol	ND	0.31	0.17	+	5	55	49	30-132	20	08/19/2022 1137
N-Nitrosodi-n-propylamine	ND	0.15	0.12	+	5	81	62	36-120	20	08/19/2022 1137
N-Nitrosodiphenylamine (Diphenylamine)	ND	0.15	0.13	+	5	83	41	38-127	20	08/19/2022 1137
Pentachlorophenol	ND	0.31	0.19	+	5	63	56	25-133	20	08/19/2022 1137
Phenanthrene	ND	0.15	0.12	+	5	77	41	50-121	20	08/19/2022 1137
Phenol	ND	0.15	0.12	+	5	78	63	34-121	20	08/19/2022 1137
Pyrene	ND	0.15	0.13	+	5	85	45	47-127	20	08/19/2022 1137
2,4,5-Trichlorophenol	ND	0.15	0.095	+	5	62	52	41-124	20	08/19/2022 1137
2,4,6-Trichlorophenol	ND	0.15	0.10	+	5	67	48	39-126	20	08/19/2022 1137

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		67	44-115
2-Fluorophenol		66	35-115
Nitrobenzene-d5		52	37-122
Phenol-d5		67	33-122
Terphenyl-d14		85	54-127
2,4,6-Tribromophenol		71	39-132

LOQ = Limit of Quantitation
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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

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P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - MB

Sample ID: XQ51360-001
Batch: 51360
Analytical Method: 6020B

Matrix: Solid
Prep Method: 3050B
Prep Date: 08/18/2022 0053

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Arsenic	0.40	U	1	0.50	0.40	0.20	mg/kg	08/23/2022 1803
Barium	0.63	U	1	1.3	0.63	0.31	mg/kg	08/23/2022 1803
Cadmium	0.063	U	1	0.13	0.063	0.025	mg/kg	08/23/2022 1803
Chromium	1.1	U	1	1.3	1.1	0.55	mg/kg	08/23/2022 1803
Lead	0.14	U	1	0.25	0.14	0.068	mg/kg	08/23/2022 1803
Selenium	0.95	U	1	1.3	0.95	0.47	mg/kg	08/23/2022 1803
Silver	0.13	U	1	0.25	0.13	0.060	mg/kg	08/23/2022 1803

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - LCS

Sample ID: XQ51360-002
Batch: 51360
Analytical Method: 6020B

Matrix: Solid
Prep Method: 3050B
Prep Date: 08/18/2022 0053

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Arsenic	50	52		1	103	82-118	08/23/2022 1811
Barium	50	53		1	106	86-116	08/23/2022 1811
Cadmium	50	50		1	100	84-116	08/23/2022 1811
Chromium	50	56		1	111	83-119	08/23/2022 1811
Lead	50	55		1	110	84-118	08/23/2022 1811
Selenium	50	45		1	89	80-119	08/23/2022 1811
Silver	50	58		2	117	83-118	09/01/2022 1026

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - MS

Sample ID: XH16028-003MS
Batch: 51360
Analytical Method: 6020B

Matrix: Solid
Prep Method: 3050B
Prep Date: 08/18/2022 0053

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Arsenic	0.64	49	31	N	1	63	82-118	09/01/2022 1101
Barium	53	49	110	N	1	118	86-116	09/01/2022 1101
Cadmium	ND	49	38	N	1	78	84-116	09/01/2022 1101
Chromium	53	49	85	N	1	65	83-119	09/01/2022 1101
Lead	3.0	49	45		1	85	84-118	09/01/2022 1101
Selenium	ND	49	22	N	1	45	80-119	09/01/2022 1101
Silver	ND	49	27	N	1	54	83-118	09/01/2022 1101

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - MSD

Sample ID: XH16028-003MD
Batch: 51360
Analytical Method: 6020B

Matrix: Solid
Prep Method: 3050B
Prep Date: 08/18/2022 0053

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Arsenic	0.64	48	32	N	1	66	2.8	82-118	20	09/01/2022 1109
Barium	53	48	94	N	1	85	17	86-116	20	09/01/2022 1109
Cadmium	ND	48	36	N	1	75	5.8	84-116	20	09/01/2022 1109
Chromium	53	48	120	N,+	1	134	32	83-119	20	09/01/2022 1109
Lead	3.0	48	49		1	95	8.5	84-118	20	09/01/2022 1109
Selenium	ND	48	21	N	1	44	2.7	80-119	20	09/01/2022 1109
Silver	ND	48	27	N	1	56	1.1	83-118	20	09/01/2022 1109

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Chain of Custody
and
Miscellaneous Documents

Chain of Custody Record

SHEALY ENVIRONMENTAL SERVICES, INC.
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.shealylab.com

Number 099030

Client: Terrasan Consultants
Address: 2401 Brentwood Rd, Suite 107
City: Raleigh State: NC Zip Code: 27604
Project Name: JAMP
Project No.: 7021P145
P.O. No.:

Report to Contact: Ethan.Dinwiddie@Terrasan.com
Sampler's Signature: X [signature]
Printed Name: Ethan Dinwiddie

Telephone No. / E-mail: Dan.Malone@Terrasan.com
Analysis (Attach list if more space is needed)

Quote No.: 25322
Page 1 of 1
XH16028
CSD

Sample ID / Description (Containers for each sample may be combined on one line.)	Date	Time	Grab/Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	No of Containers by Preservative Type: Diagnos	Hydrolis	HNO3	HCl	NaOH	SOSS KY	VOCs 8260	SVOCs 8270	RCRA 8 Metals	TCLP VOCs, SVOCs, Metals	Remarks / Cooler I.D.
IDW-MW-137	8/15	1035	C		X		3					1	X	X	X		ON HOLD for TCLP
IDW-MW-138	↓	1040	C		X		3					1	X	X	X		↓
IDW-MW-139	↓	1045	C		X		3					1	X	X	X		↓
IDW-MW-140	↓	1050	C		X		3					1	X	X	X		↓

Turn Around Time Required (Prior lab approval required for expedited TAT.) ☒ Standard ☐ Rush (Specify)

Sample Disposal: ☐ Return to Client ☒ Disposal by Lab

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☒ Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by [signature]	8/15	1445	1. Received by [signature]	8/15/22	1500
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by Fedex	08/16/22	1000	4. Laboratory received by Jhayla N Roberts	08/16/22	1000

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Circle) (Yes) No Ice Pack Receipt Temp. 3.7 °C

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: F-AD-133 Effective Date: 08-01-2014

DC#_Title: ENV-FRM-WCOL-0286 v02_Samples Receipt Checklist (SRC)
Effective Date: 8/2/2022

Sample Receipt Checklist (SRC)

Client: Terracon Cooler Inspected by/date: KNR / 08/16/2022 Lot #: XH16028

Means of receipt: [ ] Pace [ ] Client [ ] UPS [✓] FedEx [ ] Other: _____

[ ] Yes	[✓] No		1. Were custody seals present on the cooler?
[ ] Yes	[ ] No	[✓] NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA
Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: 22-1253
3.7 / 3.7 °C NA / NA °C NA / NA °C NA / NA °C
Method: [ ] Temperature Blank [✓] Against Bottles IR Gun ID: 8 IR Gun Correction Factor: 0 °C
Method of coolant: [✓] Wet Ice [ ] Ice Packs [ ] Dry Ice [ ] None

[✓] Yes	[ ] No	[ ] NA	3. Were all coolers received at or below 6.0°C? If no, was Project Manager notified? PM was Notified by: phone / email / face-to-face (circle one).
[✓] Yes	[ ] No	[ ] NA	4. Is the commercial courier's packing slip attached to this form?
[✓] Yes	[ ] No		5. Were proper custody procedures (relinquished/received) followed?
[✓] Yes	[ ] No		6. Were sample IDs listed on the COC and all sample containers?
[✓] Yes	[ ] No		7. Was collection date & time listed on the COC and all sample containers?
[✓] Yes	[ ] No		8. Did all container label information (ID, date, time) agree with the COC?
[✓] Yes	[ ] No		9. Were tests to be performed listed on the COC?
[✓] Yes	[ ] No		10. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
[✓] Yes	[ ] No		11. Was adequate sample volume available?
[✓] Yes	[ ] No		12. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
[✓] Yes	[ ] No		13. Were all samples containers accounted for? (No missing/excess)
[ ] Yes	[ ] No	[✓] NA	14. Were VOA, 8015C and RSK-175 samples free of bubbles >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
[ ] Yes	[ ] No	[✓] NA	15. Were all DRO/metals/nutrient samples received at a pH of < 2?
[ ] Yes	[ ] No	[✓] NA	16. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
[ ] Yes	[ ] No	[✓] NA	17. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
[ ] Yes	[✓] No	[ ] NA	18. Was the quote number listed on the container label? If yes, Quote #

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA. ☐
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Unique ID: NA.

Comments:

Qualtrax ID: 56360 Pace® Analytical Services, LLC Page 1 of 1

Report of Analysis

Terracon Consultants, Inc.
2401 Brentwood Road
Suite 107 I
Raleigh, NC 27604
Attention: Ethan Dinwiddie

Project Name: TAMP

Project Number: 7021P145

Lot Number:**XH16029**

Date Completed:09/02/2022

09/14/2022 1:08 PM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.
This report shall not be reproduced, except in its entirety, without the written approval of Pace Analytical Services, LLC.

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
Terracon Consultants, Inc.
Lot Number: XH16029

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Additionally, the DoD QSM version 5.3 has been followed for these samples. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs, the DoD QSM, or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

Where applicable, all soil sample results (including LOQ and DL if requested) are corrected for dry weight unless flagged with a "W" qualifier.

VOA 8260D

The initial calibration verification (ICV) associated with samples XH16029-003 (IDW-MW-141) and XH16029-004 (IDW-Geoprobe) exceeded control criteria for analytes: Acetone (123%). The data has been reported.

The continuing calibration verification (CCV) associated with sample XH16029-002 (IDW-GW(1-12)) for analytes: Acetone and 2-Butanone (MEK) recovered above the upper control limit. The samples associated with this CCV were non-detect for the affected analytes; therefore, the data has been reported.

The closing continuing calibration verification (CCV) associated with sample XH16029-001 (IDW-GW(13)) was not analyzed at end of sequence. The MSD run at the end of the sequence was copied and processed as a 8260 closing CCV. The CCV passed acceptance criteria and the data has been reported.

The continuing calibration verification (CCV) associated with sample XH16029-001 (IDW-GW(13)) for Acetone (52.4%) recovered above the upper control limit. The sample associated with this CCV was non-detect for the affected analyte; therefore, the data has been reported.

SVOA with LL PAH (8270E)
Sample XH16029-001 (IDW-GW(13)) and XH16029-004 (IDW-Geoprobe) was diluted due to appearance or extract color. The LOQ has been elevated to reflect the dilution. Due to the dilution, some surrogates recoveries were outside of the control limits.

Metals 6020B
Due to sample matrix effect on the internal standard (ISTD), a dilution was required for sample XH16029-003 (IDW-MW-141). The LOQ has been adjusted accordingly.

The MS/MSD for batch 51351 and parent sample XH16029-001 (IDW-GW(13)), recovered marginally outside the lower control limit for Se and Ag. The associated LCS passed acceptance criteria.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Sample Summary

Terracon Consultants, Inc.

Lot Number: XH16029

Project Name: TAMP

Project Number: 7021P145

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	IDW-GW(13)	Aqueous	08/15/2022	08/16/2022
002	IDW-GW(1-12)	Aqueous	08/15/2022	08/16/2022
003	IDW-MW-141	Solid	08/15/2022 1055	08/16/2022
004	IDW-Geoprobe	Solid	08/15/2022 1100	08/16/2022

(4 samples)

Detection Summary

Terracon Consultants, Inc.

Lot Number: XH16029

Project Name: TAMP

Project Number: 7021P145

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	IDW-GW(13)	Aqueous	Acetone	8260D	13	J	ug/L	6
001	IDW-GW(13)	Aqueous	Benzene	8260D	6.1		ug/L	6
001	IDW-GW(13)	Aqueous	1,1-Dichloroethane	8260D	0.61	J	ug/L	6
001	IDW-GW(13)	Aqueous	1,2-Dichloroethane	8260D	0.64	J	ug/L	6
001	IDW-GW(13)	Aqueous	cis-1,2-Dichloroethene	8260D	130		ug/L	6
001	IDW-GW(13)	Aqueous	trans-1,2-Dichloroethene	8260D	1.1		ug/L	6
001	IDW-GW(13)	Aqueous	Methyl tertiary butyl ether	8260D	16		ug/L	6
001	IDW-GW(13)	Aqueous	Tetrachloroethene	8260D	52		ug/L	6
001	IDW-GW(13)	Aqueous	Trichloroethene	8260D	160		ug/L	7
001	IDW-GW(13)	Aqueous	Vinyl chloride	8260D	1.1		ug/L	7
001	IDW-GW(13)	Aqueous	Xylenes (total)	8260D	2.2		ug/L	7
001	IDW-GW(13)	Aqueous	Naphthalene	8270E	0.55	JQ	ug/L	9
001	IDW-GW(13)	Aqueous	Arsenic	6020B	1.8	J	ug/L	10
001	IDW-GW(13)	Aqueous	Barium	6020B	67		ug/L	10
001	IDW-GW(13)	Aqueous	Chromium	6020B	72		ug/L	10
001	IDW-GW(13)	Aqueous	Lead	6020B	2.3		ug/L	10
002	IDW-GW(1-12)	Aqueous	Acetone	8260D	17	J	ug/L	11
002	IDW-GW(1-12)	Aqueous	cis-1,2-Dichloroethene	8260D	4.5		ug/L	11
002	IDW-GW(1-12)	Aqueous	Tetrachloroethene	8260D	3.2		ug/L	11
002	IDW-GW(1-12)	Aqueous	Trichloroethene	8260D	15		ug/L	12
002	IDW-GW(1-12)	Aqueous	Caprolactam	8270E	2.0	J	ug/L	13
002	IDW-GW(1-12)	Aqueous	Barium	6020B	30		ug/L	15
002	IDW-GW(1-12)	Aqueous	Chromium	6020B	16		ug/L	15
002	IDW-GW(1-12)	Aqueous	Lead	6020B	0.34	J	ug/L	15
002	IDW-GW(1-12)	Aqueous	Selenium	6020B	6.6		ug/L	15
003	IDW-MW-141	Solid	Acetone	8260D	0.012	J	mg/kg	16
003	IDW-MW-141	Solid	Arsenic	6020B	3.0	J	mg/kg	20
003	IDW-MW-141	Solid	Barium	6020B	140		mg/kg	20
003	IDW-MW-141	Solid	Chromium	6020B	130		mg/kg	20
003	IDW-MW-141	Solid	Lead	6020B	7.0		mg/kg	20
004	IDW-Geoprobe	Solid	Acetone	8260D	0.027	J	mg/kg	21
004	IDW-Geoprobe	Solid	Trichloroethene	8260D	0.05		mg/kg	22
004	IDW-Geoprobe	Solid	Arsenic	6020B	0.55		mg/kg	25
004	IDW-Geoprobe	Solid	Barium	6020B	61		mg/kg	25
004	IDW-Geoprobe	Solid	Chromium	6020B	7.3		mg/kg	25
004	IDW-Geoprobe	Solid	Lead	6020B	7.9		mg/kg	25

(36 detections)

Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16029-001**	
Description: **IDW-GW(13)**		Matrix: **Aqueous**	
Date Sampled: **08/15/2022**	Project Name: **TAMP**		
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1527	JWO		51688
2	5030B	8260D	1	08/26/2022 0044	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**13**	**J**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	**71-43-2**	**8260D**	**6.1**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	**75-34-3**	**8260D**	**0.61**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
1,2-Dichloroethane	**107-06-2**	**8260D**	**0.64**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**130**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	**156-60-5**	**8260D**	**1.1**		**1.0**	0.80	**0.40**	**ug/L**	**1**
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260D**	**16**		**1.0**	0.80	**0.40**	**ug/L**	**1**
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**52**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16029-001**	
Description: **IDW-GW(13)**		Matrix: **Aqueous**	
Date Sampled: **08/15/2022**	Project Name: **TAMP**		
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1527	JWO		51688
2	5030B	8260D	1	08/26/2022 0044	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**160**		**1.0**	0.80	**0.40**	**ug/L**	**2**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	**75-01-4**	**8260D**	**1.1**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Xylenes (total)	**1330-20-7**	**8260D**	**2.2**		**1.0**	0.80	**0.40**	**ug/L**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		93	81-118		97	81-118
Bromofluorobenzene		100	85-114		104	85-114
Toluene-d8		97	89-112		99	89-112
Dibromofluoromethane		90	80-119		96	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH16029-001**

Description: **IDW-GW(13)** Matrix: **Aqueous**

Date Sampled: **08/15/2022** Project Name: **TAMP**

Date Received: **08/16/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	5	08/19/2022 0506	SCD	08/17/2022 1500	51409

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.50	UQ	1.0	0.50	0.20	ug/L	1
Acenaphthylene	208-96-8	8270E	0.50	UQ	1.0	0.50	0.20	ug/L	1
Acetophenone	98-86-2	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
Anthracene	120-12-7	8270E	0.50	UQ	1.0	0.50	0.20	ug/L	1
Atrazine	1912-24-9	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
Benzaldehyde	100-52-7	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.50	UQ	1.0	0.50	0.20	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.50	UQ	1.0	0.50	0.20	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.50	UQ	1.0	0.50	0.20	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.50	UQ	1.0	0.50	0.20	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.50	UQ	1.0	0.50	0.20	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
Caprolactam	105-60-2	8270E	10	UQ	15	10	5.0	ug/L	1
Carbazole	86-74-8	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
4-Chloroaniline	106-47-8	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
2-Chlorophenol	95-57-8	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
Chrysene	218-01-9	8270E	0.50	UQ	1.0	0.50	0.20	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.50	UQ	1.0	0.50	0.20	ug/L	1
Dibenzofuran	132-64-9	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	18	UQ	20	18	8.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	2.5	UQ	8.0	2.5	1.3	ug/L	1
Diethylphthalate	84-66-2	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
Dimethyl phthalate	131-11-3	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	7.5	UQ	10	7.5	3.1	ug/L	1
Di-n-butyl phthalate	84-74-2	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	10	UQ	20	10	5.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	10	UQ	20	10	5.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	15	UQ	20	15	7.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.50	UQ	1.0	0.50	0.20	ug/L	1
Fluorene	86-73-7	8270E	0.50	UQ	1.0	0.50	0.20	ug/L	1
Hexachlorobenzene	118-74-1	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	20	UQ	20	20	10	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16029-001**	
Description: **IDW-GW(13)**		Matrix: **Aqueous**	
Date Sampled: **08/15/2022**	Project Name: **TAMP**		
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	5	08/19/2022 0506	SCD	08/17/2022 1500	51409

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	2.0	UQ	4.0	2.0	0.85	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.50	UQ	1.0	0.50	0.20	ug/L	1
Isophorone	78-59-1	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.50	UQ	1.0	0.50	0.20	ug/L	1
2-Methylphenol	95-48-7	8270E	6.7	UQ	8.0	6.7	3.4	ug/L	1
3+4-Methylphenol	106-44-5	8270E	15	UQ	20	15	7.5	ug/L	1
Naphthalene	**91-20-3**	**8270E**	**0.55**	**JQ**	**1.0**	0.50	**0.20**	**ug/L**	**1**
2-Nitroaniline	88-74-4	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
3-Nitroaniline	99-09-2	8270E	10	UQ	15	10	5.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	15	UQ	20	15	7.5	ug/L	1
Nitrobenzene	98-95-3	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
2-Nitrophenol	88-75-5	8270E	10	UQ	16	10	5.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	20	UQ	25	20	10	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
Pentachlorophenol	87-86-5	8270E	20	UQ	25	20	10	ug/L	1
Phenanthrene	85-01-8	8270E	0.50	UQ	1.0	0.50	0.20	ug/L	1
Phenol	108-95-2	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
Pyrene	129-00-0	8270E	0.50	UQ	1.0	0.50	0.20	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	5.0	UQ	8.0	5.0	2.5	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl	N	43	44-119
2-Fluorophenol		33	19-119
Nitrobenzene-d5		61	44-120
Phenol-d5		31	10-115
Terphenyl-d14	N	16	50-134
2,4,6-Tribromophenol		73	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16029-001**	
Description: **IDW-GW(13)**		Matrix: **Aqueous**	
Date Sampled: **08/15/2022**	Project Name: **TAMP**		
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	08/31/2022 1738	BNW	08/18/2022 0043	51351
1		7470A	1	08/20/2022 1253	MRW2	08/20/2022 0825	51636

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**1.8**	**J**	**5.0**	2.5	**1.3**	**ug/L**	**1**
Barium	**7440-39-3**	**6020B**	**67**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	7440-43-9	6020B	0.25	U	0.50	0.25	0.13	ug/L	1
Chromium	**7440-47-3**	**6020B**	**72**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Lead	**7439-92-1**	**6020B**	**2.3**		**1.0**	0.50	**0.25**	**ug/L**	**1**
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	US	5.0	2.5	1.3	ug/L	1
Silver	7440-22-4	6020B	0.50	US	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH16029-002**

Description: **IDW-GW(1-12)** Matrix: **Aqueous**

Date Sampled: **08/15/2022** Project Name: **TAMP**

Date Received: **08/16/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/20/2022 2216	BBW		51770

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**17**	**J**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**4.5**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**3.2**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16029-002**	
Description: **IDW-GW(1-12)**		Matrix: **Aqueous**	
Date Sampled: **08/15/2022**	Project Name: **TAMP**		
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/20/2022 2216	BBW		51770

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**15**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		99	81-118
Bromofluorobenzene		90	85-114
Toluene-d8		99	89-112
Dibromofluoromethane		103	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH16029-002**

Description: **IDW-GW(1-12)** Matrix: **Aqueous**

Date Sampled: **08/15/2022** Project Name: **TAMP**

Date Received: **08/16/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/19/2022 0530	SCD	08/17/2022 1500	51409

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	**105-60-2**	**8270E**	**2.0**	**J**	**3.0**	2.0	**1.0**	**ug/L**	**1**
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	84-74-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH16029-002**

Description: **IDW-GW(1-12)** Matrix: **Aqueous**

Date Sampled: **08/15/2022** Project Name: **TAMP**

Date Received: **08/16/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/19/2022 0530	SCD	08/17/2022 1500	51409

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		76	44-119
2-Fluorophenol		45	19-119
Nitrobenzene-d5		73	44-120
Phenol-d5		55	10-115
Terphenyl-d14		90	50-134
2,4,6-Tribromophenol		90	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16029-002**	
Description: **IDW-GW(1-12)**		Matrix: **Aqueous**	
Date Sampled: **08/15/2022**	Project Name: **TAMP**		
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	08/31/2022 1838	BNW	08/18/2022 0043	51351
1		7470A	1	08/20/2022 1255	MRW2	08/20/2022 0825	51636

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**30**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	7440-43-9	6020B	0.25	U	0.50	0.25	0.13	ug/L	1
Chromium	**7440-47-3**	**6020B**	**16**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Lead	**7439-92-1**	**6020B**	**0.34**	**J**	**1.0**	0.50	**0.25**	**ug/L**	**1**
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	**7782-49-2**	**6020B**	**6.6**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16029-003**	
Description: **IDW-MW-141**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1055**	Project Name: **TAMP**	% Solids: **77.0**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	08/18/2022 1538	JM1		51536

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**0.012**	**J**	**0.028**	0.022	**0.011**	**mg/Kg**	**1**
Benzene	71-43-2	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
Bromoform	75-25-2	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.0084	U	0.014	0.0084	0.0043	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	0.011	U	0.028	0.011	0.0057	mg/Kg	1
Carbon disulfide	75-15-0	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
Chlorobenzene	108-90-7	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
Chloroethane	75-00-3	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
Chloroform	67-66-3	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	0.0084	U	0.014	0.0084	0.0043	mg/Kg	1
Cyclohexane	110-82-7	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	0.0084	U	0.014	0.0084	0.0043	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
Ethylbenzene	100-41-4	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
2-Hexanone	591-78-6	8260D	0.011	U	0.014	0.011	0.0057	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
Methyl acetate	79-20-9	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	0.011	U	0.014	0.011	0.0057	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
Methylene chloride	75-09-2	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
Styrene	100-42-5	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
Tetrachloroethene	127-18-4	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
Toluene	108-88-3	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
1,1,2-Trichloroethane	79-00-5	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16029-003**	
Description: **IDW-MW-141**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1055**	Project Name: **TAMP**	% Solids: **77.0**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	08/18/2022 1538	JM1		51536

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
Trichlorofluoromethane	75-69-4	8260D	0.0057	U	0.0071	0.0057	0.0028	mg/Kg	1
Vinyl chloride	75-01-4	8260D	0.0084	U	0.014	0.0084	0.0043	mg/Kg	1
Xylenes (total)	1330-20-7	8260D	0.011	U	0.014	0.011	0.0057	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		110	79-119
Dibromofluoromethane		85	78-119
1,2-Dichloroethane-d4		87	71-136
Toluene-d8		99	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16029-003**	
Description: **IDW-MW-141**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1055**	Project Name: **TAMP**	% Solids: **77.0**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	1	08/19/2022 1315	CMF	08/17/2022 1255	51370

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.0026	U	0.0035	0.0026	0.0011	mg/Kg	1
Acenaphthylene	208-96-8	8270E	0.0026	U	0.0035	0.0026	0.0012	mg/Kg	1
Acetophenone	98-86-2	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
Anthracene	120-12-7	8270E	0.0026	U	0.0035	0.0026	0.00066	mg/Kg	1
Atrazine	1912-24-9	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
Benzaldehyde	100-52-7	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
Benzo(a)anthracene	56-55-3	8270E	0.0026	U	0.0035	0.0026	0.00076	mg/Kg	1
Benzo(a)pyrene	50-32-8	8270E	0.0026	U	0.0035	0.0026	0.00085	mg/Kg	1
Benzo(b)fluoranthene	205-99-2	8270E	0.0026	U	0.0035	0.0026	0.00065	mg/Kg	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.0026	U	0.0035	0.0026	0.00084	mg/Kg	1
Benzo(k)fluoranthene	207-08-9	8270E	0.0019	U	0.0035	0.0019	0.00062	mg/Kg	1
1,1'-Biphenyl	92-52-4	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
Butyl benzyl phthalate	85-68-7	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
Caprolactam	105-60-2	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
Carbazole	86-74-8	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
4-Chloroaniline	106-47-8	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
2-Chloronaphthalene	91-58-7	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
2-Chlorophenol	95-57-8	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
Chrysene	218-01-9	8270E	0.0019	U	0.0035	0.0019	0.00058	mg/Kg	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.0026	U	0.0035	0.0026	0.00066	mg/Kg	1
Dibenzofuran	132-64-9	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
2,4-Dichlorophenol	120-83-2	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
Diethylphthalate	84-66-2	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
Dimethyl phthalate	131-11-3	8270E	0.020	U	0.026	0.020	0.0095	mg/Kg	1
2,4-Dimethylphenol	105-67-9	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
Di-n-butyl phthalate	84-74-2	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	0.064	U	0.086	0.064	0.032	mg/Kg	1
2,4-Dinitrophenol	51-28-5	8270E	0.064	U	0.086	0.064	0.032	mg/Kg	1
2,4-Dinitrotoluene	121-14-2	8270E	0.026	U	0.035	0.026	0.013	mg/Kg	1
2,6-Dinitrotoluene	606-20-2	8270E	0.026	U	0.035	0.026	0.013	mg/Kg	1
Di-n-octylphthalate	117-84-0	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	0.064	U	0.086	0.064	0.032	mg/Kg	1
Fluoranthene	206-44-0	8270E	0.0019	U	0.0035	0.0019	0.00054	mg/Kg	1
Fluorene	86-73-7	8270E	0.0026	U	0.0035	0.0026	0.00074	mg/Kg	1
Hexachlorobenzene	118-74-1	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
Hexachlorobutadiene	87-68-3	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	0.064	U	0.086	0.064	0.032	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16029-003**	
Description: **IDW-MW-141**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1055**	Project Name: **TAMP**	% Solids: **77.0**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	1	08/19/2022 1315	CMF	08/17/2022 1255	51370

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.0026	U	0.0035	0.0026	0.0013	mg/Kg	1
Isophorone	78-59-1	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
2-Methylnaphthalene	91-57-6	8270E	0.0026	U	0.0035	0.0026	0.0013	mg/Kg	1
2-Methylphenol	95-48-7	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
3+4-Methylphenol	106-44-5	8270E	0.026	U	0.035	0.026	0.013	mg/Kg	1
Naphthalene	91-20-3	8270E	0.0026	U	0.0035	0.0026	0.0013	mg/Kg	1
2-Nitroaniline	88-74-4	8270E	0.026	U	0.035	0.026	0.013	mg/Kg	1
3-Nitroaniline	99-09-2	8270E	0.026	U	0.035	0.026	0.013	mg/Kg	1
4-Nitroaniline	100-01-6	8270E	0.026	U	0.035	0.026	0.013	mg/Kg	1
Nitrobenzene	98-95-3	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
2-Nitrophenol	88-75-5	8270E	0.026	U	0.035	0.026	0.013	mg/Kg	1
4-Nitrophenol	100-02-7	8270E	0.064	U	0.086	0.064	0.032	mg/Kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
Pentachlorophenol	87-86-5	8270E	0.064	U	0.086	0.064	0.032	mg/Kg	1
Phenanthrene	85-01-8	8270E	0.0026	U	0.0035	0.0026	0.00093	mg/Kg	1
Phenol	108-95-2	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
Pyrene	129-00-0	8270E	0.0026	U	0.0035	0.0026	0.00065	mg/Kg	1
2,4,5-Trichlorophenol	95-95-4	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	0.013	U	0.017	0.013	0.0065	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		44	44-115
2-Fluorophenol		51	35-115
Nitrobenzene-d5		44	37-122
Phenol-d5		49	33-122
Terphenyl-d14		63	54-127
2,4,6-Tribromophenol		53	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16029-003**	
Description: **IDW-MW-141**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1055**	Project Name: **TAMP**	% Solids: **77.0**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	09/01/2022 1201	BNW	08/18/2022 0053	51360
2	3050B	6020B	10	09/01/2022 1235	BNW	08/18/2022 0053	51360

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**3.0**	**J**	**4.8**	3.8	**1.9**	**mg/kg**	**2**
Barium	**7440-39-3**	**6020B**	**140**		**12**	5.8	**3.0**	**mg/kg**	**2**
Cadmium	7440-43-9	6020B	0.058	U	0.12	0.058	0.024	mg/kg	1
Chromium	**7440-47-3**	**6020B**	**130**		**12**	10	**5.3**	**mg/kg**	**2**
Lead	**7439-92-1**	**6020B**	**7.0**		**0.24**	0.13	**0.065**	**mg/kg**	**1**
Selenium	7782-49-2	6020B	8.7	U	12	8.7	4.5	mg/kg	2
Silver	7440-22-4	6020B	0.12	U	0.24	0.12	0.057	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16029-004**	
Description: **IDW-Geoprobe**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1100**	Project Name: **TAMP**	% Solids: **74.7**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	08/18/2022 1602	JM1		51536

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**0.027**	**J**	**0.029**	0.023	**0.012**	**mg/Kg**	**1**
Benzene	71-43-2	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
Bromodichloromethane	75-27-4	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
Bromoform	75-25-2	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.0090	U	0.015	0.0090	0.0044	mg/Kg	1
2-Butanone (MEK)	78-93-3	8260D	0.012	U	0.029	0.012	0.0058	mg/Kg	1
Carbon disulfide	75-15-0	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
Carbon tetrachloride	56-23-5	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
Chlorobenzene	108-90-7	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
Chloroethane	75-00-3	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
Chloroform	67-66-3	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
Chloromethane (Methyl chloride)	74-87-3	8260D	0.0090	U	0.015	0.0090	0.0044	mg/Kg	1
Cyclohexane	110-82-7	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
Dibromochloromethane	124-48-1	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
1,2-Dichlorobenzene	95-50-1	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
1,3-Dichlorobenzene	541-73-1	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
1,4-Dichlorobenzene	106-46-7	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
Dichlorodifluoromethane	75-71-8	8260D	0.0090	U	0.015	0.0090	0.0044	mg/Kg	1
1,1-Dichloroethane	75-34-3	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
1,2-Dichloroethane	107-06-2	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
1,1-Dichloroethene	75-35-4	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
1,2-Dichloropropane	78-87-5	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
Ethylbenzene	100-41-4	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
2-Hexanone	591-78-6	8260D	0.012	U	0.015	0.012	0.0058	mg/Kg	1
Isopropylbenzene	98-82-8	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
Methyl acetate	79-20-9	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
4-Methyl-2-pentanone	108-10-1	8260D	0.012	U	0.015	0.012	0.0058	mg/Kg	1
Methylcyclohexane	108-87-2	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
Methylene chloride	75-09-2	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
Styrene	100-42-5	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
Tetrachloroethene	127-18-4	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
Toluene	108-88-3	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
1,1,1-Trichloroethane	71-55-6	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
1,1,2-Trichloroethane	79-00-5	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16029-004**	
Description: **IDW-Geoprobe**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1100**	Project Name: **TAMP**	% Solids: **74.7**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260D	1	08/18/2022 1602	JM1		51536

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**0.050**		**0.0073**	0.0058	**0.0029**	**mg/Kg**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.0058	U	0.0073	0.0058	0.0029	mg/Kg	1
Vinyl chloride	75-01-4	8260D	0.0090	U	0.015	0.0090	0.0044	mg/Kg	1
Xylenes (total)	1330-20-7	8260D	0.012	U	0.015	0.012	0.0058	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		108	79-119
Dibromofluoromethane		88	78-119
1,2-Dichloroethane-d4		91	71-136
Toluene-d8		96	85-116

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH16029-004**
Description: **IDW-Geoprobe** Matrix: **Solid**
Date Sampled: **08/15/2022 1100** Project Name: **TAMP** % Solids: **74.7** **08/18/2022 2155**
Date Received: **08/16/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	5	08/19/2022 1340	CMF	08/17/2022 1255	51370

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.013	UQ	0.017	0.013	0.0053	mg/Kg	1
Acenaphthylene	208-96-8	8270E	0.013	UQ	0.017	0.013	0.0061	mg/Kg	1
Acetophenone	98-86-2	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
Anthracene	120-12-7	8270E	0.013	UQ	0.017	0.013	0.0033	mg/Kg	1
Atrazine	1912-24-9	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
Benzaldehyde	100-52-7	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
Benzo(a)anthracene	56-55-3	8270E	0.013	UQ	0.017	0.013	0.0038	mg/Kg	1
Benzo(a)pyrene	50-32-8	8270E	0.013	UQ	0.017	0.013	0.0042	mg/Kg	1
Benzo(b)fluoranthene	205-99-2	8270E	0.013	UQ	0.017	0.013	0.0032	mg/Kg	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.013	UQ	0.017	0.013	0.0042	mg/Kg	1
Benzo(k)fluoranthene	207-08-9	8270E	0.0094	UQ	0.017	0.0094	0.0031	mg/Kg	1
1,1'-Biphenyl	92-52-4	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
4-Bromophenyl phenyl ether	101-55-3	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
Butyl benzyl phthalate	85-68-7	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
Caprolactam	105-60-2	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
Carbazole	86-74-8	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
4-Chloro-3-methyl phenol	59-50-7	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
4-Chloroaniline	106-47-8	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
bis(2-Chloroethyl)ether	111-44-4	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
2-Chloronaphthalene	91-58-7	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
2-Chlorophenol	95-57-8	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
Chrysene	218-01-9	8270E	0.0094	UQ	0.017	0.0094	0.0029	mg/Kg	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.013	UQ	0.017	0.013	0.0033	mg/Kg	1
Dibenzofuran	132-64-9	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
3,3'-Dichlorobenzidine	91-94-1	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
2,4-Dichlorophenol	120-83-2	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
Diethylphthalate	84-66-2	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
Dimethyl phthalate	131-11-3	8270E	0.098	UQ	0.13	0.098	0.048	mg/Kg	1
2,4-Dimethylphenol	105-67-9	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
Di-n-butyl phthalate	84-74-2	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	0.32	UQ	0.43	0.32	0.16	mg/Kg	1
2,4-Dinitrophenol	51-28-5	8270E	0.32	UQ	0.43	0.32	0.16	mg/Kg	1
2,4-Dinitrotoluene	121-14-2	8270E	0.13	UQ	0.17	0.13	0.064	mg/Kg	1
2,6-Dinitrotoluene	606-20-2	8270E	0.13	UQ	0.17	0.13	0.064	mg/Kg	1
Di-n-octylphthalate	117-84-0	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	0.32	UQ	0.43	0.32	0.16	mg/Kg	1
Fluoranthene	206-44-0	8270E	0.0094	UQ	0.017	0.0094	0.0027	mg/Kg	1
Fluorene	86-73-7	8270E	0.013	UQ	0.017	0.013	0.0037	mg/Kg	1
Hexachlorobenzene	118-74-1	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
Hexachlorobutadiene	87-68-3	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
Hexachlorocyclopentadiene	77-47-4	8270E	0.32	UQ	0.43	0.32	0.16	mg/Kg	1

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16029-004**	
Description: **IDW-Geoprobe**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1100**	Project Name: **TAMP**	% Solids: **74.7**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270E	5	08/19/2022 1340	CMF	08/17/2022 1255	51370

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.013	UQ	0.017	0.013	0.0064	mg/Kg	1
Isophorone	78-59-1	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
2-Methylnaphthalene	91-57-6	8270E	0.013	UQ	0.017	0.013	0.0064	mg/Kg	1
2-Methylphenol	95-48-7	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
3+4-Methylphenol	106-44-5	8270E	0.13	UQ	0.17	0.13	0.064	mg/Kg	1
Naphthalene	91-20-3	8270E	0.013	UQ	0.017	0.013	0.0062	mg/Kg	1
2-Nitroaniline	88-74-4	8270E	0.13	UQ	0.17	0.13	0.064	mg/Kg	1
3-Nitroaniline	99-09-2	8270E	0.13	UQ	0.17	0.13	0.064	mg/Kg	1
4-Nitroaniline	100-01-6	8270E	0.13	UQ	0.17	0.13	0.064	mg/Kg	1
Nitrobenzene	98-95-3	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
2-Nitrophenol	88-75-5	8270E	0.13	UQ	0.17	0.13	0.064	mg/Kg	1
4-Nitrophenol	100-02-7	8270E	0.32	UQ	0.43	0.32	0.16	mg/Kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
Pentachlorophenol	87-86-5	8270E	0.32	UQ	0.43	0.32	0.16	mg/Kg	1
Phenanthrene	85-01-8	8270E	0.013	UQ	0.017	0.013	0.0046	mg/Kg	1
Phenol	108-95-2	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
Pyrene	129-00-0	8270E	0.013	UQ	0.017	0.013	0.0032	mg/Kg	1
2,4,5-Trichlorophenol	95-95-4	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1
2,4,6-Trichlorophenol	88-06-2	8270E	0.065	UQ	0.084	0.065	0.032	mg/Kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl	N	42	44-115
2-Fluorophenol		42	35-115
Nitrobenzene-d5		42	37-122
Phenol-d5		40	33-122
Terphenyl-d14		58	54-127
2,4,6-Tribromophenol		46	39-132

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

ICP-MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH16029-004**	
Description: **IDW-Geoprobe**		Matrix: **Solid**	
Date Sampled: **08/15/2022 1100**	Project Name: **TAMP**	% Solids: **74.7**	**08/18/2022 2155**
Date Received: **08/16/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	09/01/2022 1210	BNW	08/18/2022 0053	51360

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**0.55**		**0.52**	0.42	**0.21**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**61**		**1.3**	0.63	**0.32**	**mg/kg**	**1**
Cadmium	7440-43-9	6020B	0.063	U	0.13	0.063	0.026	mg/kg	1
Chromium	**7440-47-3**	**6020B**	**7.3**		**1.3**	1.1	**0.57**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**7.9**		**0.26**	0.14	**0.070**	**mg/kg**	**1**
Selenium	7782-49-2	6020B	0.95	U	1.3	0.95	0.49	mg/kg	1
Silver	7440-22-4	6020B	0.13	U	0.26	0.13	0.062	mg/kg	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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QC Summary

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51536-001
Batch: 51536
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	0.016	U	1	0.020	0.016	0.0080	mg/kg	08/18/2022 0955
Benzene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Bromodichloromethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Bromoform	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Bromomethane (Methyl bromide)	0.0060	U	1	0.010	0.0060	0.0030	mg/kg	08/18/2022 0955
2-Butanone (MEK)	0.0080	U	1	0.020	0.0080	0.0040	mg/kg	08/18/2022 0955
Carbon disulfide	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Carbon tetrachloride	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Chlorobenzene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Chloroethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Chloroform	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Chloromethane (Methyl chloride)	0.0060	U	1	0.010	0.0060	0.0030	mg/kg	08/18/2022 0955
Cyclohexane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
1,2-Dibromo-3-chloropropane (DBCP)	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Dibromochloromethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
1,2-Dibromoethane (EDB)	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
1,2-Dichlorobenzene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
1,3-Dichlorobenzene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
1,4-Dichlorobenzene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Dichlorodifluoromethane	0.0060	U	1	0.010	0.0060	0.0030	mg/kg	08/18/2022 0955
1,1-Dichloroethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
1,2-Dichloroethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
1,1-Dichloroethene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
cis-1,2-Dichloroethene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
trans-1,2-Dichloroethene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
1,2-Dichloropropane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
cis-1,3-Dichloropropene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
trans-1,3-Dichloropropene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Ethylbenzene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
2-Hexanone	0.0080	U	1	0.010	0.0080	0.0040	mg/kg	08/18/2022 0955
Isopropylbenzene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Methyl acetate	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Methyl tertiary butyl ether (MTBE)	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
4-Methyl-2-pentanone	0.0080	U	1	0.010	0.0080	0.0040	mg/kg	08/18/2022 0955
Methylcyclohexane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Methylene chloride	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Styrene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
1,1,2,2-Tetrachloroethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Tetrachloroethene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Toluene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
1,2,4-Trichlorobenzene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
1,1,1-Trichloroethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
1,1,2-Trichloroethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51536-001
Batch: 51536
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Trichlorofluoromethane	0.0040	U	1	0.0050	0.0040	0.0020	mg/kg	08/18/2022 0955
Vinyl chloride	0.0060	U	1	0.010	0.0060	0.0030	mg/kg	08/18/2022 0955
Xylenes (total)	0.0080	U	1	0.010	0.0080	0.0040	mg/kg	08/18/2022 0955

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		107	79-119
Dibromofluoromethane		86	78-119
1,2-Dichloroethane-d4		88	71-136
Toluene-d8		99	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51536-002
Batch: 51536
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	0.10	0.12		1	116	36-164	08/18/2022 0908
Benzene	0.050	0.049		1	97	77-121	08/18/2022 0908
Bromodichloromethane	0.050	0.048		1	96	75-127	08/18/2022 0908
Bromoform	0.050	0.049		1	98	67-132	08/18/2022 0908
Bromomethane (Methyl bromide)	0.050	0.051		1	101	53-143	08/18/2022 0908
2-Butanone (MEK)	0.10	0.10		1	103	51-148	08/18/2022 0908
Carbon disulfide	0.050	0.046		1	93	63-132	08/18/2022 0908
Carbon tetrachloride	0.050	0.048		1	96	70-135	08/18/2022 0908
Chlorobenzene	0.050	0.049		1	97	79-120	08/18/2022 0908
Chloroethane	0.050	0.050		1	100	59-139	08/18/2022 0908
Chloroform	0.050	0.046		1	92	78-123	08/18/2022 0908
Chloromethane (Methyl chloride)	0.050	0.054		1	107	50-136	08/18/2022 0908
Cyclohexane	0.050	0.041		1	81	67-131	08/18/2022 0908
1,2-Dibromo-3-chloropropane (DBCP)	0.050	0.044		1	87	61-132	08/18/2022 0908
Dibromochloromethane	0.050	0.048		1	96	75-127	08/18/2022 0908
1,2-Dibromoethane (EDB)	0.050	0.048		1	95	78-122	08/18/2022 0908
1,2-Dichlorobenzene	0.050	0.048		1	95	78-121	08/18/2022 0908
1,3-Dichlorobenzene	0.050	0.048		1	96	77-121	08/18/2022 0908
1,4-Dichlorobenzene	0.050	0.047		1	94	75-120	08/18/2022 0908
Dichlorodifluoromethane	0.050	0.047		1	94	29-149	08/18/2022 0908
1,1-Dichloroethane	0.050	0.047		1	94	76-125	08/18/2022 0908
1,2-Dichloroethane	0.050	0.046		1	93	73-128	08/18/2022 0908
1,1-Dichloroethene	0.050	0.047		1	95	70-131	08/18/2022 0908
cis-1,2-Dichloroethene	0.050	0.047		1	94	77-123	08/18/2022 0908
trans-1,2-Dichloroethene	0.050	0.047		1	94	74-125	08/18/2022 0908
1,2-Dichloropropane	0.050	0.047		1	94	76-123	08/18/2022 0908
cis-1,3-Dichloropropene	0.050	0.048		1	97	74-126	08/18/2022 0908
trans-1,3-Dichloropropene	0.050	0.048		1	96	71-130	08/18/2022 0908
Ethylbenzene	0.050	0.050		1	100	76-122	08/18/2022 0908
2-Hexanone	0.10	0.10		1	100	53-145	08/18/2022 0908
Isopropylbenzene	0.050	0.050		1	100	68-134	08/18/2022 0908
Methyl acetate	0.050	0.045		1	90	53-144	08/18/2022 0908
Methyl tertiary butyl ether (MTBE)	0.050	0.049		1	98	73-125	08/18/2022 0908
4-Methyl-2-pentanone	0.10	0.095		1	95	65-135	08/18/2022 0908
Methylcyclohexane	0.050	0.043		1	87	66-133	08/18/2022 0908
Methylene chloride	0.050	0.046		1	91	70-128	08/18/2022 0908
Styrene	0.050	0.050		1	100	76-124	08/18/2022 0908
1,1,2,2-Tetrachloroethane	0.050	0.046		1	92	70-124	08/18/2022 0908
Tetrachloroethene	0.050	0.050		1	100	73-128	08/18/2022 0908
Toluene	0.050	0.049		1	99	77-121	08/18/2022 0908
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.050	0.043		1	86	66-136	08/18/2022 0908
1,2,4-Trichlorobenzene	0.050	0.047		1	94	67-129	08/18/2022 0908
1,1,1-Trichloroethane	0.050	0.048		1	97	73-130	08/18/2022 0908
1,1,2-Trichloroethane	0.050	0.048		1	95	78-121	08/18/2022 0908

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51536-002
Batch: 51536
Analytical Method: 8260D

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	0.050	0.049		1	98	77-123	08/18/2022 0908
Trichlorofluoromethane	0.050	0.050		1	99	62-140	08/18/2022 0908
Vinyl chloride	0.050	0.051		1	103	56-135	08/18/2022 0908
Xylenes (total)	0.10	0.099		1	99	78-124	08/18/2022 0908

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		111	79-119
Dibromofluoromethane		99	78-119
1,2-Dichloroethane-d4		99	71-136
Toluene-d8		103	85-116

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51688-001
Batch: 51688
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	08/19/2022 1206
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	08/19/2022 1206
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	08/19/2022 1206
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	08/19/2022 1206
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	08/19/2022 1206
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	08/19/2022 1206
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	08/19/2022 1206
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	08/19/2022 1206
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	08/19/2022 1206
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	08/19/2022 1206
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	08/19/2022 1206
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51688-001
Batch: 51688
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		98	81-118
Bromofluorobenzene		94	85-114
Toluene-d8		95	89-112
Dibromofluoromethane		91	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51688-002
Batch: 51688
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	150		1	152	39-160	08/19/2022 0849
Benzene	50	49		1	98	79-120	08/19/2022 0849
Bromodichloromethane	50	43		1	86	79-125	08/19/2022 0849
Bromomethane (Methyl bromide)	50	50		1	101	53-141	08/19/2022 0849
2-Butanone (MEK)	100	110		1	109	56-143	08/19/2022 0849
Carbon disulfide	50	44		1	87	64-133	08/19/2022 0849
Carbon tetrachloride	50	42		1	83	72-136	08/19/2022 0849
Chlorobenzene	50	45		1	91	82-118	08/19/2022 0849
Chloroethane	50	42		1	84	60-138	08/19/2022 0849
Chloroform	50	46		1	92	79-124	08/19/2022 0849
Chloromethane (Methyl chloride)	50	46		1	92	50-139	08/19/2022 0849
Cyclohexane	50	45		1	89	71-130	08/19/2022 0849
Dibromochloromethane	50	42		1	83	74-126	08/19/2022 0849
1,2-Dibromoethane (EDB)	50	47		1	95	77-121	08/19/2022 0849
1,2-Dichlorobenzene	50	44		1	88	80-119	08/19/2022 0849
1,3-Dichlorobenzene	50	44		1	88	80-119	08/19/2022 0849
1,4-Dichlorobenzene	50	43		1	86	79-118	08/19/2022 0849
Dichlorodifluoromethane	50	45		1	91	32-152	08/19/2022 0849
1,1-Dichloroethane	50	45		1	90	77-125	08/19/2022 0849
1,2-Dichloroethane	50	46		1	92	73-128	08/19/2022 0849
1,1-Dichloroethene	50	44		1	89	71-131	08/19/2022 0849
cis-1,2-Dichloroethene	50	47		1	93	78-123	08/19/2022 0849
trans-1,2-Dichloroethene	50	44		1	89	75-124	08/19/2022 0849
1,2-Dichloropropane	50	46		1	92	78-122	08/19/2022 0849
cis-1,3-Dichloropropene	50	45		1	91	75-124	08/19/2022 0849
trans-1,3-Dichloropropene	50	45		1	90	73-127	08/19/2022 0849
Ethylbenzene	50	46		1	92	79-121	08/19/2022 0849
2-Hexanone	100	110		1	107	57-139	08/19/2022 0849
Isopropylbenzene	50	46		1	93	72-131	08/19/2022 0849
Methyl acetate	50	48		1	96	56-136	08/19/2022 0849
Methyl tertiary butyl ether (MTBE)	50	51		1	101	71-124	08/19/2022 0849
4-Methyl-2-pentanone	100	97		1	97	67-130	08/19/2022 0849
Methylcyclohexane	50	44		1	87	72-132	08/19/2022 0849
Methylene chloride	50	45		1	90	74-124	08/19/2022 0849
Styrene	50	48		1	96	78-123	08/19/2022 0849
1,1,2,2-Tetrachloroethane	50	49		1	98	71-121	08/19/2022 0849
Tetrachloroethene	50	46		1	91	74-129	08/19/2022 0849
Toluene	50	48		1	95	80-121	08/19/2022 0849
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	41		1	82	70-136	08/19/2022 0849
1,2,4-Trichlorobenzene	50	42		1	83	69-130	08/19/2022 0849
1,1,1-Trichloroethane	50	44		1	89	74-131	08/19/2022 0849
1,1,2-Trichloroethane	50	49		1	97	80-119	08/19/2022 0849
Trichlorofluoromethane	50	45		1	90	65-141	08/19/2022 0849
Vinyl chloride	50	50		1	100	58-137	08/19/2022 0849

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51688-002
Batch: 51688
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Xylenes (total)	100	94		1	94	79-121	08/19/2022 0849

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		88	81-118
Bromofluorobenzene		101	85-114
Toluene-d8		91	89-112
Dibromofluoromethane		88	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51770-001
Batch: 51770
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	08/20/2022 1811
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	08/20/2022 1811
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	08/20/2022 1811
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	08/20/2022 1811
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	08/20/2022 1811
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	08/20/2022 1811
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	08/20/2022 1811
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	08/20/2022 1811
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	08/20/2022 1811
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	08/20/2022 1811
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	08/20/2022 1811
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51770-001
Batch: 51770
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		98	81-118
Bromofluorobenzene		94	85-114
Toluene-d8		101	89-112
Dibromofluoromethane		99	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51770-002
Batch: 51770
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	130		1	131	39-160	08/20/2022 1703
Benzene	50	49		1	97	79-120	08/20/2022 1703
Bromodichloromethane	50	50		1	100	79-125	08/20/2022 1703
Bromoform	50	52		1	105	66-130	08/20/2022 1703
Bromomethane (Methyl bromide)	50	47		1	95	53-141	08/20/2022 1703
2-Butanone (MEK)	100	130		1	129	56-143	08/20/2022 1703
Carbon disulfide	50	48		1	96	64-133	08/20/2022 1703
Carbon tetrachloride	50	47		1	93	72-136	08/20/2022 1703
Chlorobenzene	50	50		1	99	82-118	08/20/2022 1703
Chloroethane	50	48		1	96	60-138	08/20/2022 1703
Chloroform	50	47		1	94	79-124	08/20/2022 1703
Chloromethane (Methyl chloride)	50	49		1	99	50-139	08/20/2022 1703
Cyclohexane	50	50		1	99	71-130	08/20/2022 1703
1,2-Dibromo-3-chloropropane (DBCP)	50	54		1	108	62-128	08/20/2022 1703
Dibromochloromethane	50	54		1	108	74-126	08/20/2022 1703
1,2-Dibromoethane (EDB)	50	52		1	103	77-121	08/20/2022 1703
1,2-Dichlorobenzene	50	50		1	99	80-119	08/20/2022 1703
1,3-Dichlorobenzene	50	50		1	100	80-119	08/20/2022 1703
1,4-Dichlorobenzene	50	47		1	95	79-118	08/20/2022 1703
Dichlorodifluoromethane	50	53		1	106	32-152	08/20/2022 1703
1,1-Dichloroethane	50	49		1	98	77-125	08/20/2022 1703
1,2-Dichloroethane	50	49		1	98	73-128	08/20/2022 1703
1,1-Dichloroethene	50	49		1	98	71-131	08/20/2022 1703
cis-1,2-Dichloroethene	50	49		1	98	78-123	08/20/2022 1703
trans-1,2-Dichloroethene	50	48		1	96	75-124	08/20/2022 1703
1,2-Dichloropropane	50	51		1	102	78-122	08/20/2022 1703
cis-1,3-Dichloropropene	50	56		1	113	75-124	08/20/2022 1703
trans-1,3-Dichloropropene	50	56		1	113	73-127	08/20/2022 1703
Ethylbenzene	50	51		1	103	79-121	08/20/2022 1703
2-Hexanone	100	110		1	113	57-139	08/20/2022 1703
Isopropylbenzene	50	54		1	108	72-131	08/20/2022 1703
Methyl acetate	50	56		1	112	56-136	08/20/2022 1703
Methyl tertiary butyl ether (MTBE)	50	56		1	112	71-124	08/20/2022 1703
4-Methyl-2-pentanone	100	110		1	109	67-130	08/20/2022 1703
Methylcyclohexane	50	51		1	102	72-132	08/20/2022 1703
Methylene chloride	50	48		1	96	74-124	08/20/2022 1703
Styrene	50	56		1	112	78-123	08/20/2022 1703
1,1,2,2-Tetrachloroethane	50	51		1	102	71-121	08/20/2022 1703
Tetrachloroethene	50	50		1	100	74-129	08/20/2022 1703
Toluene	50	53		1	105	80-121	08/20/2022 1703
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	48		1	97	70-136	08/20/2022 1703
1,2,4-Trichlorobenzene	50	46		1	92	69-130	08/20/2022 1703
1,1,1-Trichloroethane	50	48		1	95	74-131	08/20/2022 1703
1,1,2-Trichloroethane	50	51		1	101	80-119	08/20/2022 1703

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51770-002
Batch: 51770
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	46		1	92	79-123	08/20/2022 1703
Trichlorofluoromethane	50	48		1	95	65-141	08/20/2022 1703
Vinyl chloride	50	50		1	101	58-137	08/20/2022 1703
Xylenes (total)	100	110		1	108	79-121	08/20/2022 1703

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		96	81-118
Bromofluorobenzene		100	85-114
Toluene-d8		103	89-112
Dibromofluoromethane		95	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ52303-001
Batch: 52303
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		98	81-118
Bromofluorobenzene		103	85-114
Toluene-d8		99	89-112
Dibromofluoromethane		95	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ52303-002
Batch: 52303
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Bromoform	50	41		1	82	66-130	08/25/2022 1934
1,2-Dibromo-3-chloropropane (DBCP)	50	41		1	81	62-128	08/25/2022 1934
Trichloroethene	50	44		1	87	79-123	08/25/2022 1934

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		89	81-118
Bromofluorobenzene		95	85-114
Toluene-d8		93	89-112
Dibromofluoromethane		90	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ51370-001
Batch: 51370
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 08/17/2022 1255

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acenaphthene	0.0020	U	1	0.0027	0.0020	0.00083	mg/kg	08/19/2022 0959
Acenaphthylene	0.0020	U	1	0.0027	0.0020	0.00095	mg/kg	08/19/2022 0959
Acetophenone	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Anthracene	0.0020	U	1	0.0027	0.0020	0.00051	mg/kg	08/19/2022 0959
Atrazine	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Benzaldehyde	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Benzo(a)anthracene	0.0020	U	1	0.0027	0.0020	0.00059	mg/kg	08/19/2022 0959
Benzo(a)pyrene	0.0020	U	1	0.0027	0.0020	0.00066	mg/kg	08/19/2022 0959
Benzo(b)fluoranthene	0.0020	U	1	0.0027	0.0020	0.00050	mg/kg	08/19/2022 0959
Benzo(g,h,i)perylene	0.0020	U	1	0.0027	0.0020	0.00065	mg/kg	08/19/2022 0959
Benzo(k)fluoranthene	0.0015	U	1	0.0027	0.0015	0.00048	mg/kg	08/19/2022 0959
1,1'-Biphenyl	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
4-Bromophenyl phenyl ether	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Butyl benzyl phthalate	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Caprolactam	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Carbazole	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
bis (2-Chloro-1-methylethyl) ether	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
4-Chloro-3-methyl phenol	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
4-Chloroaniline	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
bis(2-Chloroethoxy)methane	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
bis(2-Chloroethyl)ether	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
2-Chloronaphthalene	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
2-Chlorophenol	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
4-Chlorophenyl phenyl ether	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Chrysene	0.0015	U	1	0.0027	0.0015	0.00045	mg/kg	08/19/2022 0959
Dibenzo(a,h)anthracene	0.0020	U	1	0.0027	0.0020	0.00051	mg/kg	08/19/2022 0959
Dibenzofuran	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
3,3'-Dichlorobenzidine	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
2,4-Dichlorophenol	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Diethylphthalate	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Dimethyl phthalate	0.015	U	1	0.020	0.015	0.0074	mg/kg	08/19/2022 0959
2,4-Dimethylphenol	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Di-n-butyl phthalate	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
4,6-Dinitro-2-methylphenol	0.050	U	1	0.067	0.050	0.025	mg/kg	08/19/2022 0959
2,4-Dinitrophenol	0.050	U	1	0.067	0.050	0.025	mg/kg	08/19/2022 0959
2,4-Dinitrotoluene	0.020	U	1	0.027	0.020	0.010	mg/kg	08/19/2022 0959
2,6-Dinitrotoluene	0.020	U	1	0.027	0.020	0.010	mg/kg	08/19/2022 0959
Di-n-octylphthalate	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
bis(2-Ethylhexyl)phthalate	0.050	U	1	0.067	0.050	0.025	mg/kg	08/19/2022 0959
Fluoranthene	0.0015	U	1	0.0027	0.0015	0.00042	mg/kg	08/19/2022 0959
Fluorene	0.0020	U	1	0.0027	0.0020	0.00057	mg/kg	08/19/2022 0959
Hexachlorobenzene	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Hexachlorobutadiene	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Hexachlorocyclopentadiene	0.050	U	1	0.067	0.050	0.025	mg/kg	08/19/2022 0959

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ51370-001
Batch: 51370
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 08/17/2022 1255

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Hexachloroethane	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Indeno(1,2,3-c,d)pyrene	0.0020	U	1	0.0027	0.0020	0.0010	mg/kg	08/19/2022 0959
Isophorone	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
2-Methylnaphthalene	0.0020	U	1	0.0027	0.0020	0.00099	mg/kg	08/19/2022 0959
2-Methylphenol	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
3+4-Methylphenol	0.020	U	1	0.027	0.020	0.010	mg/kg	08/19/2022 0959
Naphthalene	0.0020	U	1	0.0027	0.0020	0.00097	mg/kg	08/19/2022 0959
2-Nitroaniline	0.020	U	1	0.027	0.020	0.010	mg/kg	08/19/2022 0959
3-Nitroaniline	0.020	U	1	0.027	0.020	0.010	mg/kg	08/19/2022 0959
4-Nitroaniline	0.020	U	1	0.027	0.020	0.010	mg/kg	08/19/2022 0959
Nitrobenzene	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
2-Nitrophenol	0.020	U	1	0.027	0.020	0.010	mg/kg	08/19/2022 0959
4-Nitrophenol	0.050	U	1	0.067	0.050	0.025	mg/kg	08/19/2022 0959
N-Nitrosodi-n-propylamine	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
N-Nitrosodiphenylamine (Diphenylamine)	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Pentachlorophenol	0.050	U	1	0.067	0.050	0.025	mg/kg	08/19/2022 0959
Phenanthrene	0.0020	U	1	0.0027	0.0020	0.00072	mg/kg	08/19/2022 0959
Phenol	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
Pyrene	0.0020	U	1	0.0027	0.0020	0.00050	mg/kg	08/19/2022 0959
2,4,5-Trichlorophenol	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959
2,4,6-Trichlorophenol	0.010	U	1	0.013	0.010	0.0050	mg/kg	08/19/2022 0959

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		66	44-115
2-Fluorophenol		71	35-115
Nitrobenzene-d5		62	37-122
Phenol-d5		70	33-122
Terphenyl-d14		103	54-127
2,4,6-Tribromophenol		75	39-132

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51370-002
Batch: 51370
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 08/17/2022 1255

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acenaphthene	0.13	0.090		1	68	40-123	08/19/2022 1023
Acenaphthylene	0.13	0.10		1	76	32-132	08/19/2022 1023
Acetophenone	0.13	0.088		1	66	33-115	08/19/2022 1023
Anthracene	0.13	0.10		1	78	47-123	08/19/2022 1023
Atrazine	0.13	0.11		1	79	47-127	08/19/2022 1023
Benzaldehyde	0.13	0.077		1	58	10-110	08/19/2022 1023
Benzo(a)anthracene	0.13	0.11		1	80	49-126	08/19/2022 1023
Benzo(a)pyrene	0.13	0.11		1	83	45-129	08/19/2022 1023
Benzo(b)fluoranthene	0.13	0.11		1	80	45-132	08/19/2022 1023
Benzo(g,h,i)perylene	0.13	0.11		1	85	43-134	08/19/2022 1023
Benzo(k)fluoranthene	0.13	0.10		1	78	47-132	08/19/2022 1023
1,1'-Biphenyl	0.13	0.089		1	67	40-117	08/19/2022 1023
4-Bromophenyl phenyl ether	0.13	0.10		1	75	46-124	08/19/2022 1023
Butyl benzyl phthalate	0.13	0.11		1	85	48-132	08/19/2022 1023
Caprolactam	0.13	0.11		1	83	46-117	08/19/2022 1023
Carbazole	0.13	0.11		1	80	50-123	08/19/2022 1023
bis (2-Chloro-1-methylethyl) ether	0.13	0.085		1	64	33-131	08/19/2022 1023
4-Chloro-3-methyl phenol	0.13	0.10		1	78	45-122	08/19/2022 1023
4-Chloroaniline	0.13	0.066		1	50	17-106	08/19/2022 1023
bis(2-Chloroethoxy)methane	0.13	0.098		1	74	36-121	08/19/2022 1023
bis(2-Chloroethyl)ether	0.13	0.091		1	68	31-120	08/19/2022 1023
2-Chloronaphthalene	0.13	0.090		1	68	41-114	08/19/2022 1023
2-Chlorophenol	0.13	0.092		1	69	34-121	08/19/2022 1023
4-Chlorophenyl phenyl ether	0.13	0.10		1	75	45-121	08/19/2022 1023
Chrysene	0.13	0.10		1	76	50-124	08/19/2022 1023
Dibenzo(a,h)anthracene	0.13	0.11		1	81	45-134	08/19/2022 1023
Dibenzofuran	0.13	0.089		1	67	44-120	08/19/2022 1023
3,3'-Dichlorobenzidine	0.13	0.085		1	64	22-121	08/19/2022 1023
2,4-Dichlorophenol	0.13	0.096		1	72	40-122	08/19/2022 1023
Diethylphthalate	0.13	0.11		1	79	50-124	08/19/2022 1023
Dimethyl phthalate	0.13	0.10		1	79	48-124	08/19/2022 1023
2,4-Dimethylphenol	0.13	0.14		1	104	30-127	08/19/2022 1023
Di-n-butyl phthalate	0.13	0.11		1	81	51-128	08/19/2022 1023
4,6-Dinitro-2-methylphenol	0.13	0.086		1	65	29-132	08/19/2022 1023
2,4-Dinitrophenol	0.27	0.14		1	52	10-113	08/19/2022 1023
2,4-Dinitrotoluene	0.13	0.10		1	76	48-126	08/19/2022 1023
2,6-Dinitrotoluene	0.13	0.096		1	72	46-124	08/19/2022 1023
Di-n-octylphthalate	0.13	0.11		1	82	45-140	08/19/2022 1023
bis(2-Ethylhexyl)phthalate	0.13	0.13		1	95	51-133	08/19/2022 1023
Fluoranthene	0.13	0.10		1	76	50-127	08/19/2022 1023
Fluorene	0.13	0.095		1	72	43-125	08/19/2022 1023
Hexachlorobenzene	0.13	0.096		1	72	45-122	08/19/2022 1023
Hexachlorobutadiene	0.13	0.085		1	64	32-123	08/19/2022 1023
Hexachlorocyclopentadiene	0.67	0.39		1	58	18-121	08/19/2022 1023

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N = Recovery is out of criteria
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+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51370-002
Batch: 51370
Analytical Method: 8270E

Matrix: Solid
Prep Method: 3546
Prep Date: 08/17/2022 1255

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Hexachloroethane	0.13	0.088		1	66	28-117	08/19/2022 1023
Indeno(1,2,3-c,d)pyrene	0.13	0.11		1	82	45-133	08/19/2022 1023
Isophorone	0.13	0.094		1	71	30-122	08/19/2022 1023
2-Methylnaphthalene	0.13	0.094		1	70	38-122	08/19/2022 1023
2-Methylphenol	0.13	0.11		1	83	32-122	08/19/2022 1023
3+4-Methylphenol	0.13	0.11		1	80	34-119	08/19/2022 1023
Naphthalene	0.13	0.090		1	68	35-123	08/19/2022 1023
2-Nitroaniline	0.13	0.11		1	82	44-127	08/19/2022 1023
3-Nitroaniline	0.13	0.073		1	55	33-119	08/19/2022 1023
4-Nitroaniline	0.13	0.10		1	76	50-150	08/19/2022 1023
Nitrobenzene	0.13	0.074		1	55	34-122	08/19/2022 1023
2-Nitrophenol	0.13	0.089		1	67	36-123	08/19/2022 1023
4-Nitrophenol	0.27	0.15		1	55	30-132	08/19/2022 1023
N-Nitrosodi-n-propylamine	0.13	0.10		1	76	36-120	08/19/2022 1023
N-Nitrosodiphenylamine (Diphenylamine)	0.13	0.11		1	80	38-127	08/19/2022 1023
Pentachlorophenol	0.27	0.17		1	62	25-133	08/19/2022 1023
Phenanthrene	0.13	0.098		1	74	50-121	08/19/2022 1023
Phenol	0.13	0.097		1	73	34-121	08/19/2022 1023
Pyrene	0.13	0.11		1	81	47-127	08/19/2022 1023
2,4,5-Trichlorophenol	0.13	0.097		1	73	41-124	08/19/2022 1023
2,4,6-Trichlorophenol	0.13	0.093		1	70	39-126	08/19/2022 1023

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		70	44-115
2-Fluorophenol		69	35-115
Nitrobenzene-d5		67	37-122
Phenol-d5		70	33-122
Terphenyl-d14		97	54-127
2,4,6-Tribromophenol		74	39-132

LOQ = Limit of Quantitation
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P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ51409-001
Batch: 51409
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/17/2022 1500

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acenaphthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
Acenaphthylene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
Acetophenone	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
Anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
Atrazine	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
Benzaldehyde	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
Benzo(a)anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
Benzo(a)pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
Benzo(b)fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
Benzo(g,h,i)perylene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
Benzo(k)fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
1,1'-Biphenyl	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
4-Bromophenyl phenyl ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
Butyl benzyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
Caprolactam	2.0	U	1	3.0	2.0	1.0	ug/L	08/19/2022 0012
Carbazole	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
bis (2-Chloro-1-methylethyl) ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
4-Chloro-3-methyl phenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
4-Chloroaniline	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
bis(2-Chloroethoxy)methane	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
bis(2-Chloroethyl)ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
2-Chloronaphthalene	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
2-Chlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
4-Chlorophenyl phenyl ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
Chrysene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
Dibenzo(a,h)anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
Dibenzofuran	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
3,3'-Dichlorobenzidine	3.5	U	1	4.0	3.5	1.8	ug/L	08/19/2022 0012
2,4-Dichlorophenol	0.50	U	1	1.6	0.50	0.25	ug/L	08/19/2022 0012
Diethylphthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
Dimethyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
2,4-Dimethylphenol	1.5	U	1	2.0	1.5	0.62	ug/L	08/19/2022 0012
Di-n-butyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
4,6-Dinitro-2-methylphenol	2.0	U	1	4.0	2.0	1.0	ug/L	08/19/2022 0012
2,4-Dinitrophenol	2.0	U	1	4.0	2.0	1.0	ug/L	08/19/2022 0012
2,4-Dinitrotoluene	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
2,6-Dinitrotoluene	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
Di-n-octylphthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
bis(2-Ethylhexyl)phthalate	3.0	U	1	4.0	3.0	1.5	ug/L	08/19/2022 0012
Fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
Fluorene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
Hexachlorobenzene	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
Hexachlorobutadiene	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
Hexachlorocyclopentadiene	4.0	U	1	4.0	4.0	2.0	ug/L	08/19/2022 0012

LOQ = Limit of Quantitation
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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ51409-001
Batch: 51409
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/17/2022 1500

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Hexachloroethane	0.40	U	1	0.80	0.40	0.17	ug/L	08/19/2022 0012
Indeno(1,2,3-c,d)pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
Isophorone	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
2-Methylnaphthalene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
2-Methylphenol	1.3	U	1	1.6	1.3	0.67	ug/L	08/19/2022 0012
3+4-Methylphenol	3.0	U	1	4.0	3.0	1.5	ug/L	08/19/2022 0012
Naphthalene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
2-Nitroaniline	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
3-Nitroaniline	2.0	U	1	3.0	2.0	1.0	ug/L	08/19/2022 0012
4-Nitroaniline	3.0	U	1	4.0	3.0	1.5	ug/L	08/19/2022 0012
Nitrobenzene	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
2-Nitrophenol	2.0	U	1	3.2	2.0	1.0	ug/L	08/19/2022 0012
4-Nitrophenol	4.0	U	1	5.0	4.0	2.0	ug/L	08/19/2022 0012
N-Nitrosodi-n-propylamine	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
N-Nitrosodiphenylamine (Diphenylamine)	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
Pentachlorophenol	4.0	U	1	5.0	4.0	2.0	ug/L	08/19/2022 0012
Phenanthrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
Phenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
Pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
2,4,5-Trichlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
2,4,6-Trichlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		76	44-119
2-Fluorophenol		49	19-119
Nitrobenzene-d5		72	44-120
Phenol-d5		61	10-115
Terphenyl-d14		91	50-134
2,4,6-Tribromophenol		81	43-140

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

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* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51409-002
Batch: 51409
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/17/2022 1500

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acenaphthene	8.0	6.2		1	78	47-122	08/19/2022 0036
Acenaphthylene	8.0	7.0		1	87	41-130	08/19/2022 0036
Acetophenone	8.0	6.3		1	79	46-118	08/19/2022 0036
Anthracene	8.0	6.8		1	85	57-123	08/19/2022 0036
Atrazine	8.0	7.1		1	89	44-142	08/19/2022 0036
Benzaldehyde	8.0	6.1		1	76	20-115	08/19/2022 0036
Benzo(a)anthracene	8.0	6.9		1	86	58-125	08/19/2022 0036
Benzo(a)pyrene	8.0	6.8		1	85	54-128	08/19/2022 0036
Benzo(b)fluoranthene	8.0	7.1		1	89	53-131	08/19/2022 0036
Benzo(g,h,i)perylene	8.0	7.1		1	89	50-134	08/19/2022 0036
Benzo(k)fluoranthene	8.0	7.0		1	88	57-129	08/19/2022 0036
1,1'-Biphenyl	8.0	6.1		1	77	49-115	08/19/2022 0036
4-Bromophenyl phenyl ether	8.0	6.9		1	86	55-124	08/19/2022 0036
Butyl benzyl phthalate	8.0	7.9		1	98	53-134	08/19/2022 0036
Caprolactam	8.0	7.9		1	99	44-152	08/19/2022 0036
Carbazole	8.0	6.8		1	85	60-122	08/19/2022 0036
bis (2-Chloro-1-methylethyl) ether	8.0	5.9		1	74	37-130	08/19/2022 0036
4-Chloro-3-methyl phenol	8.0	6.7		1	84	52-119	08/19/2022 0036
4-Chloroaniline	8.0	6.4		1	80	33-117	08/19/2022 0036
bis(2-Chloroethoxy)methane	8.0	6.8		1	85	48-120	08/19/2022 0036
bis(2-Chloroethyl)ether	8.0	6.5		1	81	43-118	08/19/2022 0036
2-Chloronaphthalene	8.0	6.2		1	78	40-116	08/19/2022 0036
2-Chlorophenol	8.0	6.6		1	82	38-117	08/19/2022 0036
4-Chlorophenyl phenyl ether	8.0	6.7		1	84	53-121	08/19/2022 0036
Chrysene	8.0	6.7		1	84	59-123	08/19/2022 0036
Dibenzo(a,h)anthracene	8.0	6.9		1	86	51-134	08/19/2022 0036
Dibenzofuran	8.0	6.1		1	77	53-118	08/19/2022 0036
3,3'-Dichlorobenzidine	8.0	3.4		1	43	27-129	08/19/2022 0036
2,4-Dichlorophenol	8.0	6.5		1	81	47-121	08/19/2022 0036
Diethylphthalate	8.0	7.1		1	89	56-125	08/19/2022 0036
Dimethyl phthalate	8.0	7.2		1	90	45-127	08/19/2022 0036
2,4-Dimethylphenol	8.0	7.6		1	94	31-124	08/19/2022 0036
Di-n-butyl phthalate	8.0	7.6		1	95	59-127	08/19/2022 0036
4,6-Dinitro-2-methylphenol	8.0	5.2		1	65	44-137	08/19/2022 0036
2,4-Dinitrophenol	16	6.1		1	38	23-143	08/19/2022 0036
2,4-Dinitrotoluene	8.0	6.7		1	84	57-128	08/19/2022 0036
2,6-Dinitrotoluene	8.0	6.5		1	82	57-124	08/19/2022 0036
Di-n-octylphthalate	8.0	6.9		1	86	51-140	08/19/2022 0036
bis(2-Ethylhexyl)phthalate	8.0	8.1		1	101	55-135	08/19/2022 0036
Fluoranthene	8.0	7.1		1	89	57-128	08/19/2022 0036
Fluorene	8.0	6.6		1	82	52-124	08/19/2022 0036
Hexachlorobenzene	8.0	6.5		1	82	53-125	08/19/2022 0036
Hexachlorobutadiene	8.0	5.6		1	71	22-124	08/19/2022 0036
Hexachlorocyclopentadiene	40	19		1	47	16-96	08/19/2022 0036

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P = The RPD between two GC columns exceeds 40%
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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51409-002
Batch: 51409
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/17/2022 1500

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Hexachloroethane	8.0	5.8		1	73	21-115	08/19/2022 0036
Indeno(1,2,3-c,d)pyrene	8.0	6.7		1	84	52-134	08/19/2022 0036
Isophorone	8.0	6.4		1	80	42-124	08/19/2022 0036
2-Methylnaphthalene	8.0	6.5		1	81	40-121	08/19/2022 0036
2-Methylphenol	8.0	7.2		1	90	30-117	08/19/2022 0036
3+4-Methylphenol	8.0	6.6		1	83	29-110	08/19/2022 0036
Naphthalene	8.0	6.5		1	81	40-121	08/19/2022 0036
2-Nitroaniline	8.0	7.5		1	94	55-127	08/19/2022 0036
3-Nitroaniline	8.0	5.3		1	66	41-128	08/19/2022 0036
4-Nitroaniline	8.0	6.7		1	84	30-135	08/19/2022 0036
Nitrobenzene	8.0	5.5		1	69	45-121	08/19/2022 0036
2-Nitrophenol	8.0	6.6		1	82	47-123	08/19/2022 0036
4-Nitrophenol	16	11		1	70	53-130	08/19/2022 0036
N-Nitrosodi-n-propylamine	8.0	6.9		1	87	49-119	08/19/2022 0036
N-Nitrosodiphenylamine (Diphenylamine)	8.0	7.2		1	90	51-123	08/19/2022 0036
Pentachlorophenol	16	9.0		1	56	35-138	08/19/2022 0036
Phenanthrene	8.0	6.6		1	83	59-120	08/19/2022 0036
Phenol	8.0	6.6		1	83	49-117	08/19/2022 0036
Pyrene	8.0	7.3		1	92	57-126	08/19/2022 0036
2,4,5-Trichlorophenol	8.0	6.2		1	78	53-123	08/19/2022 0036
2,4,6-Trichlorophenol	8.0	6.6		1	82	50-125	08/19/2022 0036

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		80	44-119
2-Fluorophenol		77	19-119
Nitrobenzene-d5		82	44-120
Phenol-d5		79	10-115
Terphenyl-d14		93	50-134
2,4,6-Tribromophenol		87	43-140

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P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MB

Sample ID: XQ51351-001
Batch: 51351
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 08/18/2022 0043

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Arsenic	2.5	U	1	5.0	2.5	1.3	ug/L	08/31/2022 1655
Barium	2.5	U	1	5.0	2.5	1.3	ug/L	08/31/2022 1655
Cadmium	0.25	U	1	0.50	0.25	0.13	ug/L	08/31/2022 1655
Chromium	2.5	U	1	5.0	2.5	1.3	ug/L	08/31/2022 1655
Lead	0.50	U	1	1.0	0.50	0.25	ug/L	08/31/2022 1655
Selenium	2.5	U	1	5.0	2.5	1.3	ug/L	08/31/2022 1655
Silver	0.50	U	1	1.0	0.50	0.25	ug/L	08/31/2022 1655

LOQ = Limit of Quantitation
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N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - LCS

Sample ID: XQ51351-002
Batch: 51351
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 08/18/2022 0043

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Arsenic	100	95		1	95	84-116	08/31/2022 1704
Barium	100	99		1	99	86-114	08/31/2022 1704
Cadmium	100	95		1	95	87-115	08/31/2022 1704
Chromium	100	100		1	104	85-116	08/31/2022 1704
Lead	100	100		1	104	88-115	08/31/2022 1704
Selenium	100	85		1	85	80-120	08/31/2022 1704
Silver	100	110		1	106	85-116	08/31/2022 1704

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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MS

Sample ID: XH16029-001MS
Batch: 51351
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 08/18/2022 0043

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Arsenic	1.8	100	87		1	85	84-116	08/31/2022 1804
Barium	67	100	170		1	101	86-114	08/31/2022 1804
Cadmium	ND	100	89		1	89	87-115	08/31/2022 1804
Chromium	72	100	170		1	95	85-116	08/31/2022 1804
Lead	2.3	100	95		1	92	88-115	08/31/2022 1804
Selenium	ND	100	74	N	1	74	80-120	08/31/2022 1804
Silver	ND	100	81	N	1	81	85-116	08/31/2022 1804

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MSD

Sample ID: XH16029-001MD
Batch: 51351
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 08/18/2022 0043

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Arsenic	1.8	100	87		1	86	0.38	84-116	20	08/31/2022 1812
Barium	67	100	170		1	102	0.60	86-114	20	08/31/2022 1812
Cadmium	ND	100	90		1	90	0.96	87-115	20	08/31/2022 1812
Chromium	72	100	170		1	97	1.3	85-116	20	08/31/2022 1812
Lead	2.3	100	96		1	94	1.6	88-115	20	08/31/2022 1812
Selenium	ND	100	73	N	1	73	0.77	80-120	20	08/31/2022 1812
Silver	ND	100	82	N	1	82	1.2	85-116	20	08/31/2022 1812

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - MB

Sample ID: XQ51360-001
Batch: 51360
Analytical Method: 6020B

Matrix: Solid
Prep Method: 3050B
Prep Date: 08/18/2022 0053

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Arsenic	0.40	U	1	0.50	0.40	0.20	mg/kg	08/23/2022 1803
Barium	0.63	U	1	1.3	0.63	0.31	mg/kg	08/23/2022 1803
Cadmium	0.063	U	1	0.13	0.063	0.025	mg/kg	08/23/2022 1803
Chromium	1.1	U	1	1.3	1.1	0.55	mg/kg	08/23/2022 1803
Lead	0.14	U	1	0.25	0.14	0.068	mg/kg	08/23/2022 1803
Selenium	0.95	U	1	1.3	0.95	0.47	mg/kg	08/23/2022 1803
Silver	0.13	U	1	0.25	0.13	0.060	mg/kg	08/23/2022 1803

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - LCS

Sample ID: XQ51360-002
Batch: 51360
Analytical Method: 6020B

Matrix: Solid
Prep Method: 3050B
Prep Date: 08/18/2022 0053

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Arsenic	50	52		1	103	82-118	08/23/2022 1811
Barium	50	53		1	106	86-116	08/23/2022 1811
Cadmium	50	50		1	100	84-116	08/23/2022 1811
Chromium	50	56		1	111	83-119	08/23/2022 1811
Lead	50	55		1	110	84-118	08/23/2022 1811
Selenium	50	45		1	89	80-119	08/23/2022 1811
Silver	50	58		2	117	83-118	09/01/2022 1026

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MB

Sample ID: XQ51636-001
Batch: 51636
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 08/20/2022 0825

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Mercury	0.18	U	1	0.20	0.18	0.091	ug/L	08/20/2022 1247

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

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N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - LCS

Sample ID: XQ51636-002
Batch: 51636
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 08/20/2022 0825

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Mercury	2.0	1.9		1	93	82-119	08/20/2022 1250

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P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Chain of Custody
and
Miscellaneous Documents

Chain of Custody Record

SHEALY ENVIRONMENTAL SERVICES, INC.
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.shealylab.com

Number 94082

Client: Terrain Consultants	Report to Contact: Ethan.Dinwiddie@Terrainconsultants	Telephone No. / E-mail: Don.Malone@Terrainconsultants	Quote No. 25322
Address: 2401 Brentwood Rd, Suite 107	Sampler's Signature: X [signature]	Analysis (Attach list if more space is needed):	Page 1 of 1
City: Raleigh; State: NC; Zip Code: 27604	Printed Name: Ethan Dinwiddie		XH16029
Project Name: TAMP			CSD
Project No.: 7021PHS; P.O. No.:			

Sample ID / Description (Containers for each sample may be combined on one line.)	Date	Time	G=Grab C=Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	No of Containers by Preservative Type: Unpres.	H2SO4	HNO3	HCl	NaOH	Na2S2O3	VOCs 8260	SVOCs 8270	RCRA8 Metals	TCLP VOCs, SVOCs, Metals	Remarks / Cooler I.D.
IDW-GW (13)	8/15		C	X			3			3			X	X	X		After metals
IDW-GW (1-12)	↓		C	X			3			3			X	X	X		Filter metals
IDW-MW-M1	↓	1055	C		X		3					1	X	X	X		ON Hold for TCLP
IDW-Geoprobe	↓	1100	C		X		3					1	X	X	X		↓

Turn Around Time Required (Prior lab approval required for expedited TAT.): ☒ Standard ☐ Rush (Specify)

Sample Disposal: ☐ Return to Client ☒ Disposal by Lab

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☒ Unknown

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished by: [signature]	8/15	1445	1. Received by: [signature] 8.	8.16.22	1500
2. Relinquished by:			2. Received by:		
3. Relinquished by:			3. Received by:		
4. Relinquished by: Fed ex	08/16/22	1000	4. Laboratory received by: Kayla N Noleate	08/16/22	1000

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY: Received on ice (Circle) Yes No Ice Pack — Receipt Temp. 2.5 °C

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: F-AD-133 Effective Date: 08-01-2014

DC#_Title: ENV-FRM-WCOL-0286 v02_Samples Receipt Checklist (SRC)
Effective Date: 8/2/2022

Sample Receipt Checklist (SRC)

Client: Terracon Cooler Inspected by/date: KNR / 08/16/2022 Lot #: XH16029

Means of receipt: [ ] Pace [ ] Client [ ] UPS [✓] FedEx [ ] Other: _____ /)

[ ] Yes	[✓] No		1. Were custody seals present on the cooler?
[ ] Yes	[ ] No	[✓] NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: 22-1645 Chlorine Strip ID: NA Tested by: KNR
Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA
2.5 / 2.5 °C NA / NA °C NA / NA °C NA / NA °C
Method: [ ] Temperature Blank [✓] Against Bottles IR Gun ID: 8 IR Gun Correction Factor: 0 °C
Method of coolant: [✓] Wet Ice [ ] Ice Packs [ ] Dry Ice [ ] None

[✓] Yes	[ ] No	[ ] NA	3. Were all coolers received at or below 6.0°C? If no, was Project Manager notified? PM was Notified by: phone / email / face-to-face (circle one).
[✓] Yes	[ ] No	[ ] NA	4. Is the commercial courier's packing slip attached to this form?
[✓] Yes	[ ] No		5. Were proper custody procedures (relinquished/received) followed?
[✓] Yes	[ ] No		6. Were sample IDs listed on the COC and all sample containers?
[✓] Yes	[ ] No		7. Was collection date & time listed on the COC and all sample containers?
[✓] Yes	[ ] No		8. Did all container label information (ID, date, time) agree with the COC?
[✓] Yes	[ ] No		9. Were tests to be performed listed on the COC?
[✓] Yes	[ ] No		10. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? _____
[✓] Yes	[ ] No		11. Was adequate sample volume available?
[✓] Yes	[ ] No		12. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
[✓] Yes	[ ] No		13. Were all samples containers accounted for? (No missing/excess)
[✓] Yes	[ ] No	[ ] NA	14. Were VOA, 8015C and RSK-175 samples free of bubbles >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
[✓] Yes	[ ] No	[ ] NA	15. Were all DRO/metals/nutrient samples received at a pH of < 2?
[ ] Yes	[ ] No	[✓] NA	16. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
[ ] Yes	[ ] No	[✓] NA	17. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
[ ] Yes	[✓] No	[ ] NA	18. Was the quote number listed on the container label? If yes, Quote # _____

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA _____ were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA. [ ]
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA _____ were received with bubbles >6 mm in diameter.

Samples(s) NA _____ were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Unique ID: NA /) _____.

Comments: -001 & -002 metals received in 250-mp amber containers, poured up 250-p HNO3 at 1700

Qualtrax ID: 56360 Pace® Analytical Services, LLC Page 1 of 1

Report of Analysis

Terracon Consultants, Inc.
2401 Brentwood Road
Suite 107 I
Raleigh, NC 27604
Attention: Ethan Dinwiddie

Project Name: TAMP

Project Number: 7021P145

Lot Number:**XH10027**

Date Completed:09/02/2022

09/07/2022 5:03 PM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.
This report shall not be reproduced, except in its entirety, without the written approval of Pace Analytical Services, LLC.

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
Terracon Consultants, Inc.
Lot Number: XH10027

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Additionally, the DoD QSM version 5.3 has been followed for these samples. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs, the DoD QSM, or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

VOA 8260D

The continuing calibration verification (CCV) associated with samples XH10027-001, XH10027-002, XH10027-003, XH10027-004, XH10027-005, XH10027-006, XH10027-007, XH10027-008, XH10027-009, XH10027-010, XH10027-011, XH10027-012, and XH10027-013 for Acetone (35%) recovered above the upper control limit. The samples associated with this CCV were non-detect for the affected analyte; therefore, the data has been reported.

XH10027-001 (SW-01A) (Run 1) (Analysis Batch 51130) TCL VOCs (OLM04.3) (DOD QSM 5.4)
XH10027-002 (SW-01B) (Run 1) (Analysis Batch 51130) TCL VOCs (OLM04.3) (DOD QSM 5.4)
XH10027-003 (SW-01) (Run 1) (Analysis Batch 51130) TCL VOCs (OLM04.3) (DOD QSM 5.4)
XH10027-004 (SW-02) (Run 1) (Analysis Batch 51130) TCL VOCs (OLM04.3) (DOD QSM 5.4)
XH10027-005 (SW-02A) (Run 1) (Analysis Batch 51130) TCL VOCs (OLM04.3) (DOD QSM 5.4)
XH10027-006 (SW-03) (Run 1) (Analysis Batch 51130) TCL VOCs (OLM04.3) (DOD QSM 5.4)
XH10027-007 (DUP-SW-02) (Run 1) (Analysis Batch 51130) TCL VOCs (OLM04.3) (DOD QSM 5.4)
XH10027-008 (MW-130) (Run 1) (Analysis Batch 51130) TCL VOCs (OLM04.3) (DOD QSM 5.4)
XH10027-009 (MW-131) (Run 1) (Analysis Batch 51130) TCL VOCs (OLM04.3) (DOD QSM 5.4)
XH10027-010 (TB-01) (Run 1) (Analysis Batch 51130) TCL VOCs (OLM04.3) (DOD QSM 5.4)
XH10027-011 (MW-137) (Run 1) (Analysis Batch 51130) TCL VOCs (OLM04.3) (DOD QSM 5.4)
XH10027-012 (MW-140) (Run 1) (Analysis Batch 51130) TCL VOCs (OLM04.3) (DOD QSM 5.4)
XH10027-013 (TAMP-MW-8) (Run 1) (Analysis Batch 51130) TCL VOCs (OLM04.3) (DOD QSM 5.4)

The following samples had an air bubble > 6mm in the sample vials: XH10027-010 (TB-01) and XH10027-011 (MW-137).

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Sample Summary

Terracon Consultants, Inc.

Lot Number: XH10027

Project Name: TAMP

Project Number: 7021P145

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	SW-01A	Aqueous	08/09/2022 1015	08/10/2022
002	SW-01B	Aqueous	08/09/2022 1050	08/10/2022
003	SW-01	Aqueous	08/09/2022 0950	08/10/2022
004	SW-02	Aqueous	08/09/2022 0910	08/10/2022
005	SW-02A	Aqueous	08/09/2022 0930	08/10/2022
006	SW-03	Aqueous	08/09/2022 0900	08/10/2022
007	DUP-SW-02	Aqueous	08/09/2022	08/10/2022
008	MW-130	Aqueous	08/09/2022 1050	08/10/2022
009	MW-131	Aqueous	08/09/2022 1150	08/10/2022
010	TB-01	Aqueous	08/09/2022	08/10/2022
011	MW-137	Aqueous	08/09/2022 1600	08/10/2022
012	MW-140	Aqueous	08/09/2022 0930	08/10/2022
013	TAMP-MW-8	Aqueous	08/09/2022 1005	08/10/2022

(13 samples)

Detection Summary
Terracon Consultants, Inc.
Lot Number: XH10027
Project Name: TAMP
Project Number: 7021P145

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	SW-01A	Aqueous	cis-1,2-Dichloroethene	8260D	0.60	J	ug/L	7
002	SW-01B	Aqueous	Trichloroethene	8260D	0.64	J	ug/L	10
003	SW-01	Aqueous	cis-1,2-Dichloroethene	8260D	3.2		ug/L	11
003	SW-01	Aqueous	Tetrachloroethene	8260D	3.3		ug/L	11
003	SW-01	Aqueous	Trichloroethene	8260D	7.2		ug/L	12
004	SW-02	Aqueous	cis-1,2-Dichloroethene	8260D	3.8		ug/L	13
004	SW-02	Aqueous	Tetrachloroethene	8260D	9.4		ug/L	13
004	SW-02	Aqueous	Trichloroethene	8260D	11		ug/L	14
005	SW-02A	Aqueous	cis-1,2-Dichloroethene	8260D	13		ug/L	15
005	SW-02A	Aqueous	Tetrachloroethene	8260D	33		ug/L	15
005	SW-02A	Aqueous	1,1,2-Trichloro-1,2,2-	8260D	0.84	J	ug/L	15
005	SW-02A	Aqueous	Trichloroethene	8260D	40		ug/L	16
005	SW-02A	Aqueous	Vinyl chloride	8260D	0.69	J	ug/L	16
006	SW-03	Aqueous	Acetone	8260D	6.9	J	ug/L	17
006	SW-03	Aqueous	cis-1,2-Dichloroethene	8260D	0.96	J	ug/L	17
006	SW-03	Aqueous	Tetrachloroethene	8260D	2.5		ug/L	17
006	SW-03	Aqueous	Trichloroethene	8260D	3.5		ug/L	18
007	DUP-SW-02	Aqueous	cis-1,2-Dichloroethene	8260D	12		ug/L	19
007	DUP-SW-02	Aqueous	Tetrachloroethene	8260D	30		ug/L	19
007	DUP-SW-02	Aqueous	1,1,2-Trichloro-1,2,2-	8260D	0.86	J	ug/L	19
007	DUP-SW-02	Aqueous	Trichloroethene	8260D	37		ug/L	20
007	DUP-SW-02	Aqueous	Vinyl chloride	8260D	0.61	J	ug/L	20
008	MW-130	Aqueous	Acetone	8260D	7.1	J	ug/L	21
008	MW-130	Aqueous	Chloroform	8260D	4.0		ug/L	21
008	MW-130	Aqueous	1,1-Dichloroethane	8260D	0.43	J	ug/L	21
008	MW-130	Aqueous	1,2-Dichloroethane	8260D	0.46	J	ug/L	21
008	MW-130	Aqueous	1,1-Dichloroethene	8260D	5.3		ug/L	21
008	MW-130	Aqueous	cis-1,2-Dichloroethene	8260D	4.7		ug/L	21
008	MW-130	Aqueous	Tetrachloroethene	8260D	17		ug/L	21
008	MW-130	Aqueous	Trichloroethene	8260D	35		ug/L	22
008	MW-130	Aqueous	Trichlorofluoromethane	8260D	1.4		ug/L	22
008	MW-130	Aqueous	Di-n-butyl phthalate	8270E	0.57	J	ug/L	23
008	MW-130	Aqueous	Barium	6020B	27		ug/L	25
009	MW-131	Aqueous	Acetone	8260D	17	J	ug/L	26
009	MW-131	Aqueous	Chloroform	8260D	0.61	J	ug/L	26
009	MW-131	Aqueous	Chloromethane (Methyl	8260D	0.55	J	ug/L	26
009	MW-131	Aqueous	1,1-Dichloroethane	8260D	8.3		ug/L	26
009	MW-131	Aqueous	1,2-Dichloroethane	8260D	1.6		ug/L	26
009	MW-131	Aqueous	1,1-Dichloroethene	8260D	13		ug/L	26
009	MW-131	Aqueous	cis-1,2-Dichloroethene	8260D	2.7		ug/L	26
009	MW-131	Aqueous	Tetrachloroethene	8260D	1.7		ug/L	26
009	MW-131	Aqueous	1,1,2-Trichloro-1,2,2-	8260D	0.90	J	ug/L	26
009	MW-131	Aqueous	Trichloroethene	8260D	10		ug/L	27

Detection Summary (Continued)

Lot Number: XH10027

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
009	MW-131	Aqueous	Trichlorofluoromethane	8260D	0.78	J	ug/L	27
009	MW-131	Aqueous	Di-n-butyl phthalate	8270E	0.59	J	ug/L	28
009	MW-131	Aqueous	Barium	6020B	52		ug/L	30
009	MW-131	Aqueous	Chromium	6020B	2.2	J	ug/L	30
010	TB-01	Aqueous	Acetone	8260D	5.2	J	ug/L	31
011	MW-137	Aqueous	Acetone	8260D	5.2	J	ug/L	33
011	MW-137	Aqueous	Chloroform	8260D	0.89	J	ug/L	33
011	MW-137	Aqueous	1,1-Dichloroethane	8260D	7.1		ug/L	33
011	MW-137	Aqueous	1,2-Dichloroethane	8260D	4.2		ug/L	33
011	MW-137	Aqueous	1,1-Dichloroethene	8260D	14		ug/L	33
011	MW-137	Aqueous	1,1,2-Trichloro-1,2,2-	8260D	3.9		ug/L	33
011	MW-137	Aqueous	Trichloroethene	8260D	1.8		ug/L	34
011	MW-137	Aqueous	Di-n-butyl phthalate	8270E	0.66	J	ug/L	35
011	MW-137	Aqueous	2-Methylnaphthalene	8270E	0.13	J	ug/L	36
011	MW-137	Aqueous	Naphthalene	8270E	0.41		ug/L	36
011	MW-137	Aqueous	Barium	6020B	34		ug/L	37
012	MW-140	Aqueous	Acetone	8260D	11	J	ug/L	38
012	MW-140	Aqueous	Chloromethane (Methyl	8260D	0.70	J	ug/L	38
012	MW-140	Aqueous	1,1-Dichloroethene	8260D	0.56	J	ug/L	38
012	MW-140	Aqueous	cis-1,2-Dichloroethene	8260D	2.1		ug/L	38
012	MW-140	Aqueous	Tetrachloroethene	8260D	2.3		ug/L	38
012	MW-140	Aqueous	Trichloroethene	8260D	25		ug/L	39
012	MW-140	Aqueous	Caprolactam	8270E	1.2	J	ug/L	40
012	MW-140	Aqueous	Di-n-butyl phthalate	8270E	0.69	J	ug/L	40
012	MW-140	Aqueous	Arsenic	6020B	1.4	J	ug/L	42
012	MW-140	Aqueous	Barium	6020B	52		ug/L	42
012	MW-140	Aqueous	Chromium	6020B	4.3	J	ug/L	42
012	MW-140	Aqueous	Lead	6020B	0.76	J	ug/L	42
012	MW-140	Aqueous	Selenium	6020B	2.8	J	ug/L	42
013	TAMP-MW-8	Aqueous	Tetrachloroethene	8260D	0.43	J	ug/L	43
013	TAMP-MW-8	Aqueous	Trichloroethene	8260D	1.2		ug/L	44
013	TAMP-MW-8	Aqueous	Di-n-butyl phthalate	8270E	0.50	J	ug/L	45
013	TAMP-MW-8	Aqueous	Barium	6020B	170		ug/L	47
013	TAMP-MW-8	Aqueous	Chromium	6020B	1.9	J	ug/L	47

(77 detections)

Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10027-001**

Description: **SW-01A** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1015** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2022 1234	JWO		51130
2	5030B	8260D	1	08/17/2022 1216	JWO		51416

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**0.60**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*
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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10027-001**	
Description: **SW-01A**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 1015**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2022 1234	JWO		51130
2	5030B	8260D	1	08/17/2022 1216	JWO		51416

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		104	81-118		97	81-118
Bromofluorobenzene		100	85-114		97	85-114
Toluene-d8		100	89-112		97	89-112
Dibromofluoromethane		101	80-119		91	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10027-002**

Description: **SW-01B** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1050** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2022 1257	JWO		51130
2	5030B	8260D	1	08/17/2022 1239	JWO		51416

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10027-002**	
Description: **SW-01B**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 1050**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2022 1257	JWO		51130
2	5030B	8260D	1	08/17/2022 1239	JWO		51416

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**0.64**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		104	81-118		97	81-118
Bromofluorobenzene		100	85-114		100	85-114
Toluene-d8		99	89-112		97	89-112
Dibromofluoromethane		100	80-119		90	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10027-003**

Description: **SW-01** Matrix: **Aqueous**

Date Sampled: **08/09/2022 0950** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2022 1321	JWO		51130
2	5030B	8260D	1	08/17/2022 1303	JWO		51416

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**3.2**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**3.3**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10027-003**	
Description: **SW-01**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 0950**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2022 1321	JWO		51130
2	5030B	8260D	1	08/17/2022 1303	JWO		51416

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**7.2**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		101	81-118		97	81-118
Bromofluorobenzene		93	85-114		101	85-114
Toluene-d8		99	89-112		99	89-112
Dibromofluoromethane		98	80-119		92	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10027-004**

Description: **SW-02** Matrix: **Aqueous**

Date Sampled: **08/09/2022 0910** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2022 1344	JWO		51130
2	5030B	8260D	1	08/17/2022 1326	JWO		51416

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**3.8**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**9.4**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10027-004**	
Description: **SW-02**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 0910**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2022 1344	JWO		51130
2	5030B	8260D	1	08/17/2022 1326	JWO		51416

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**11**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		103	81-118		98	81-118
Bromofluorobenzene		97	85-114		97	85-114
Toluene-d8		98	89-112		99	89-112
Dibromofluoromethane		100	80-119		90	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10027-005**

Description: **SW-02A** Matrix: **Aqueous**

Date Sampled: **08/09/2022 0930** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2022 1407	JWO		51130
2	5030B	8260D	1	08/17/2022 1349	JWO		51416

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**13**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**33**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**0.84**	**J**	**1.0**	0.84	**0.42**	**ug/L**	**2**
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10027-005**	
Description: **SW-02A**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 0930**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2022 1407	JWO		51130
2	5030B	8260D	1	08/17/2022 1349	JWO		51416

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**40**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	**75-01-4**	**8260D**	**0.69**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		103	81-118		98	81-118
Bromofluorobenzene		104	85-114		98	85-114
Toluene-d8		100	89-112		97	89-112
Dibromofluoromethane		100	80-119		91	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10027-006**	
Description: **SW-03**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 0900**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2022 1430	JWO		51130
2	5030B	8260D	1	08/17/2022 1412	JWO		51416

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**6.9**	**J**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**0.96**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**2.5**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10027-006**	
Description: **SW-03**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 0900**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2022 1430	JWO		51130
2	5030B	8260D	1	08/17/2022 1412	JWO		51416

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**3.5**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		102	81-118		99	81-118
Bromofluorobenzene		95	85-114		101	85-114
Toluene-d8		96	89-112		100	89-112
Dibromofluoromethane		99	80-119		93	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10027-007**	
Description: **DUP-SW-02**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2022 1453	JWO		51130
2	5030B	8260D	1	08/17/2022 1435	JWO		51416

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**12**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**30**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**0.86**	**J**	**1.0**	0.84	**0.42**	**ug/L**	**2**
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10027-007**	
Description: **DUP-SW-02**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2022 1453	JWO		51130
2	5030B	8260D	1	08/17/2022 1435	JWO		51416

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**37**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	**75-01-4**	**8260D**	**0.61**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		101	81-118		97	81-118
Bromofluorobenzene		102	85-114		97	85-114
Toluene-d8		99	89-112		97	89-112
Dibromofluoromethane		99	80-119		92	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10027-008**

Description: **MW-130** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1050** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2022 1516	JWO		51130
2	5030B	8260D	1	08/17/2022 1457	JWO		51416

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**7.1**	**J**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	**67-66-3**	**8260D**	**4.0**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	**75-34-3**	**8260D**	**0.43**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
1,2-Dichloroethane	**107-06-2**	**8260D**	**0.46**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
1,1-Dichloroethene	**75-35-4**	**8260D**	**5.3**		**1.0**	0.80	**0.40**	**ug/L**	**1**
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**4.7**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**17**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10027-008**	
Description: **MW-130**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 1050**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2022 1516	JWO		51130
2	5030B	8260D	1	08/17/2022 1457	JWO		51416

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**35**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	**75-69-4**	**8260D**	**1.4**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		101	81-118		98	81-118
Bromofluorobenzene		101	85-114		96	85-114
Toluene-d8		103	89-112		100	89-112
Dibromofluoromethane		101	80-119		92	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10027-008**

Description: **MW-130** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1050** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1138	CMF	08/11/2022 1740	50831

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	**84-74-2**	**8270E**	**0.57**	**J**	**1.6**	1.0	**0.50**	**ug/L**	**1**
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation | B = Detected in the method blank | E = Quantitation of compound exceeded the calibration range | DL = Detection Limit | Q = Surrogate failure

U = Not detected at or above the LOD | N = Recovery is out of criteria | P = The RPD between two GC columns exceeds 40% | J = Estimated result < LOQ and ≥ DL | L = LCS/LCSD failure

H = Out of holding time | W = Reported on wet weight basis | LOD = Limit of Detection | S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10027-008**

Description: **MW-130** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1050** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1138	CMF	08/11/2022 1740	50831

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		72	44-119
2-Fluorophenol		43	19-119
Nitrobenzene-d5		72	44-120
Phenol-d5		60	10-115
Terphenyl-d14		103	50-134
2,4,6-Tribromophenol		93	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10027-008**

Description: **MW-130** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1050** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	08/23/2022 0411	BNW	08/15/2022 0840	50905
1		7470A	1	08/13/2022 1636	MRW2	08/13/2022 1352	50806
2	3005A	6020B	1	08/31/2022 2131	BNW	08/15/2022 0840	50905

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**27**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	7440-43-9	6020B	0.25	U	0.50	0.25	0.13	ug/L	1
Chromium	7440-47-3	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Lead	7439-92-1	6020B	0.50	U	1.0	0.50	0.25	ug/L	1
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	2
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10027-009**

Description: **MW-131** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1150** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2022 1539	JWO		51130
2	5030B	8260D	1	08/17/2022 1520	JWO		51416

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**17**	**J**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	**67-66-3**	**8260D**	**0.61**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
Chloromethane (Methyl chloride)	**74-87-3**	**8260D**	**0.55**	**J**	**2.0**	1.0	**0.50**	**ug/L**	**1**
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	**75-34-3**	**8260D**	**8.3**		**1.0**	0.80	**0.40**	**ug/L**	**1**
1,2-Dichloroethane	**107-06-2**	**8260D**	**1.6**		**1.0**	0.80	**0.40**	**ug/L**	**1**
1,1-Dichloroethene	**75-35-4**	**8260D**	**13**		**1.0**	0.80	**0.40**	**ug/L**	**1**
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**2.7**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**1.7**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**0.90**	**J**	**1.0**	0.84	**0.42**	**ug/L**	**2**
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10027-009**	
Description: **MW-131**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 1150**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2022 1539	JWO		51130
2	5030B	8260D	1	08/17/2022 1520	JWO		51416

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**10**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	**75-69-4**	**8260D**	**0.78**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		105	81-118		99	81-118
Bromofluorobenzene		100	85-114		103	85-114
Toluene-d8		100	89-112		96	89-112
Dibromofluoromethane		100	80-119		93	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10027-009**

Description: **MW-131** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1150** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1252	CMF	08/11/2022 1740	50831

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	**84-74-2**	**8270E**	**0.59**	**J**	**1.6**	1.0	**0.50**	**ug/L**	**1**
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10027-009**

Description: **MW-131** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1150** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1252	CMF	08/11/2022 1740	50831

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		71	44-119
2-Fluorophenol		43	19-119
Nitrobenzene-d5		67	44-120
Phenol-d5		54	10-115
Terphenyl-d14		106	50-134
2,4,6-Tribromophenol		94	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10027-009**

Description: **MW-131** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1150** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	08/23/2022 0419	BNW	08/15/2022 0840	50905
1		7470A	1	08/13/2022 1644	MRW2	08/13/2022 1352	50806
2	3005A	6020B	1	08/31/2022 2139	BNW	08/15/2022 0840	50905

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**52**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	7440-43-9	6020B	0.25	U	0.50	0.25	0.13	ug/L	1
Chromium	**7440-47-3**	**6020B**	**2.2**	**J**	**5.0**	2.5	**1.3**	**ug/L**	**1**
Lead	7439-92-1	6020B	0.50	U	1.0	0.50	0.25	ug/L	1
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	2
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10027-010**	
Description: **TB-01**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2022 1212	JWO		51130
2	5030B	8260D	1	08/17/2022 1543	JWO		51416

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**5.2**	**J**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10027-010**	
Description: **TB-01**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2022 1212	JWO		51130
2	5030B	8260D	1	08/17/2022 1543	JWO		51416

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		102	81-118		99	81-118
Bromofluorobenzene		102	85-114		100	85-114
Toluene-d8		99	89-112		98	89-112
Dibromofluoromethane		102	80-119		91	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10027-011**	
Description: **MW-137**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 1600**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2022 1602	JWO		51130
2	5030B	8260D	1	08/17/2022 1606	JWO		51416

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**5.2**	**J**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	**67-66-3**	**8260D**	**0.89**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	**75-34-3**	**8260D**	**7.1**		**1.0**	0.80	**0.40**	**ug/L**	**1**
1,2-Dichloroethane	**107-06-2**	**8260D**	**4.2**		**1.0**	0.80	**0.40**	**ug/L**	**1**
1,1-Dichloroethene	**75-35-4**	**8260D**	**14**		**1.0**	0.80	**0.40**	**ug/L**	**1**
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**3.9**		**1.0**	0.84	**0.42**	**ug/L**	**2**
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10027-011**	
Description: **MW-137**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 1600**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2022 1602	JWO		51130
2	5030B	8260D	1	08/17/2022 1606	JWO		51416

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**1.8**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		103	81-118		100	81-118
Bromofluorobenzene		99	85-114		100	85-114
Toluene-d8		97	89-112		98	89-112
Dibromofluoromethane		101	80-119		94	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10027-011**

Description: **MW-137** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1600** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1317	CMF	08/11/2022 1740	50831

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	**84-74-2**	**8270E**	**0.66**	**J**	**1.6**	1.0	**0.50**	**ug/L**	**1**
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation | B = Detected in the method blank | E = Quantitation of compound exceeded the calibration range | DL = Detection Limit | Q = Surrogate failure

U = Not detected at or above the LOD | N = Recovery is out of criteria | P = The RPD between two GC columns exceeds 40% | J = Estimated result < LOQ and ≥ DL | L = LCS/LCSD failure

H = Out of holding time | W = Reported on wet weight basis | LOD = Limit of Detection | S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10027-011**

Description: **MW-137** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1600** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1317	CMF	08/11/2022 1740	50831

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	**91-57-6**	**8270E**	**0.13**	**J**	**0.20**	0.10	**0.040**	**ug/L**	**1**
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	**91-20-3**	**8270E**	**0.41**		**0.20**	0.10	**0.040**	**ug/L**	**1**
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		78	44-119
2-Fluorophenol		45	19-119
Nitrobenzene-d5		76	44-120
Phenol-d5		57	10-115
Terphenyl-d14		103	50-134
2,4,6-Tribromophenol		97	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10027-011**

Description: **MW-137** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1600** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	08/23/2022 0427	BNW	08/15/2022 0840	50905
1		7470A	1	08/13/2022 1646	MRW2	08/13/2022 1352	50806
2	3005A	6020B	1	08/31/2022 2148	BNW	08/15/2022 0840	50905

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**34**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	7440-43-9	6020B	0.25	U	0.50	0.25	0.13	ug/L	1
Chromium	7440-47-3	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Lead	7439-92-1	6020B	0.50	U	1.0	0.50	0.25	ug/L	1
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	2
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10027-012**

Description: **MW-140** Matrix: **Aqueous**

Date Sampled: **08/09/2022 0930** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2022 1625	JWO		51130
2	5030B	8260D	1	08/17/2022 1629	JWO		51416

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**11**	**J**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	**74-87-3**	**8260D**	**0.70**	**J**	**2.0**	1.0	**0.50**	**ug/L**	**1**
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	**75-35-4**	**8260D**	**0.56**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**2.1**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**2.3**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10027-012**	
Description: **MW-140**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 0930**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2022 1625	JWO		51130
2	5030B	8260D	1	08/17/2022 1629	JWO		51416

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**25**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		103	81-118		97	81-118
Bromofluorobenzene		102	85-114		97	85-114
Toluene-d8		99	89-112		97	89-112
Dibromofluoromethane		100	80-119		91	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10027-012**

Description: **MW-140** Matrix: **Aqueous**

Date Sampled: **08/09/2022 0930** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1341	CMF	08/11/2022 1740	50831

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	**105-60-2**	**8270E**	**1.2**	**J**	**3.0**	2.0	**1.0**	**ug/L**	**1**
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	**84-74-2**	**8270E**	**0.69**	**J**	**1.6**	1.0	**0.50**	**ug/L**	**1**
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation | B = Detected in the method blank | E = Quantitation of compound exceeded the calibration range | DL = Detection Limit | Q = Surrogate failure

U = Not detected at or above the LOD | N = Recovery is out of criteria | P = The RPD between two GC columns exceeds 40% | J = Estimated result < LOQ and ≥ DL | L = LCS/LCSD failure

H = Out of holding time | W = Reported on wet weight basis | LOD = Limit of Detection | S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10027-012**

Description: **MW-140** Matrix: **Aqueous**

Date Sampled: **08/09/2022 0930** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1341	CMF	08/11/2022 1740	50831

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		75	44-119
2-Fluorophenol		41	19-119
Nitrobenzene-d5		73	44-120
Phenol-d5		45	10-115
Terphenyl-d14		105	50-134
2,4,6-Tribromophenol		94	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10027-012**	
Description: **MW-140**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 0930**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	08/23/2022 0436	BNW	08/15/2022 0840	50905
1		7470A	1	08/13/2022 1649	MRW2	08/13/2022 1352	50806
2	3005A	6020B	1	08/31/2022 2156	BNW	08/15/2022 0840	50905

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**1.4**	**J**	**5.0**	2.5	**1.3**	**ug/L**	**1**
Barium	**7440-39-3**	**6020B**	**52**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	7440-43-9	6020B	0.25	U	0.50	0.25	0.13	ug/L	1
Chromium	**7440-47-3**	**6020B**	**4.3**	**J**	**5.0**	2.5	**1.3**	**ug/L**	**1**
Lead	**7439-92-1**	**6020B**	**0.76**	**J**	**1.0**	0.50	**0.25**	**ug/L**	**1**
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	**7782-49-2**	**6020B**	**2.8**	**J**	**5.0**	2.5	**1.3**	**ug/L**	**2**
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10027-013**	
Description: **TAMP-MW-8**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 1005**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2022 1648	JWO		51130
2	5030B	8260D	1	08/17/2022 1652	JWO		51416

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**0.43**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10027-013**	
Description: **TAMP-MW-8**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 1005**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2022 1648	JWO		51130
2	5030B	8260D	1	08/17/2022 1652	JWO		51416

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**1.2**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		104	81-118		97	81-118
Bromofluorobenzene		102	85-114		100	85-114
Toluene-d8		101	89-112		99	89-112
Dibromofluoromethane		99	80-119		91	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10027-013**
Description: **TAMP-MW-8** Matrix: **Aqueous**
Date Sampled: **08/09/2022 1005** Project Name: **TAMP**
Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1406	CMF	08/11/2022 1740	50831

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	**84-74-2**	**8270E**	**0.50**	**J**	**1.6**	1.0	**0.50**	**ug/L**	**1**
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10027-013**

Description: **TAMP-MW-8** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1005** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1406	CMF	08/11/2022 1740	50831

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		72	44-119
2-Fluorophenol		41	19-119
Nitrobenzene-d5		70	44-120
Phenol-d5		64	10-115
Terphenyl-d14		102	50-134
2,4,6-Tribromophenol		91	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10027-013**	
Description: **TAMP-MW-8**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 1005**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	08/23/2022 0444	BNW	08/15/2022 0840	50905
1		7470A	1	08/13/2022 1652	MRW2	08/13/2022 1352	50806
2	3005A	6020B	1	08/31/2022 2205	BNW	08/15/2022 0840	50905

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**170**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	7440-43-9	6020B	0.25	U	0.50	0.25	0.13	ug/L	1
Chromium	**7440-47-3**	**6020B**	**1.9**	**J**	**5.0**	2.5	**1.3**	**ug/L**	**1**
Lead	7439-92-1	6020B	0.50	U	1.0	0.50	0.25	ug/L	1
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	2
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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QC Summary

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51130-001
Batch: 51130
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	08/15/2022 1101
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	08/15/2022 1101
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	08/15/2022 1101
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	08/15/2022 1101
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	08/15/2022 1101
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	08/15/2022 1101
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	08/15/2022 1101
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	08/15/2022 1101
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	08/15/2022 1101
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	08/15/2022 1101
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51130-001
Batch: 51130
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		102	81-118
Bromofluorobenzene		97	85-114
Toluene-d8		99	89-112
Dibromofluoromethane		98	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51130-002
Batch: 51130
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	140		1	135	39-160	08/15/2022 0952
Benzene	50	48		1	96	79-120	08/15/2022 0952
Bromodichloromethane	50	46		1	92	79-125	08/15/2022 0952
Bromoform	50	47		1	94	66-130	08/15/2022 0952
Bromomethane (Methyl bromide)	50	58		1	115	53-141	08/15/2022 0952
2-Butanone (MEK)	100	98		1	98	56-143	08/15/2022 0952
Carbon disulfide	50	42		1	83	64-133	08/15/2022 0952
Carbon tetrachloride	50	43		1	85	72-136	08/15/2022 0952
Chlorobenzene	50	44		1	88	82-118	08/15/2022 0952
Chloroethane	50	45		1	91	60-138	08/15/2022 0952
Chloroform	50	47		1	93	79-124	08/15/2022 0952
Chloromethane (Methyl chloride)	50	50		1	101	50-139	08/15/2022 0952
Cyclohexane	50	50		1	99	71-130	08/15/2022 0952
1,2-Dibromo-3-chloropropane (DBCP)	50	42		1	84	62-128	08/15/2022 0952
Dibromochloromethane	50	46		1	92	74-126	08/15/2022 0952
1,2-Dibromoethane (EDB)	50	48		1	95	77-121	08/15/2022 0952
1,2-Dichlorobenzene	50	45		1	89	80-119	08/15/2022 0952
1,3-Dichlorobenzene	50	44		1	89	80-119	08/15/2022 0952
1,4-Dichlorobenzene	50	43		1	86	79-118	08/15/2022 0952
Dichlorodifluoromethane	50	45		1	90	32-152	08/15/2022 0952
1,1-Dichloroethane	50	44		1	89	77-125	08/15/2022 0952
1,2-Dichloroethane	50	48		1	96	73-128	08/15/2022 0952
1,1-Dichloroethene	50	41		1	82	71-131	08/15/2022 0952
cis-1,2-Dichloroethene	50	47		1	94	78-123	08/15/2022 0952
trans-1,2-Dichloroethene	50	44		1	87	75-124	08/15/2022 0952
1,2-Dichloropropane	50	45		1	90	78-122	08/15/2022 0952
cis-1,3-Dichloropropene	50	48		1	95	75-124	08/15/2022 0952
trans-1,3-Dichloropropene	50	48		1	95	73-127	08/15/2022 0952
Ethylbenzene	50	45		1	89	79-121	08/15/2022 0952
2-Hexanone	100	96		1	96	57-139	08/15/2022 0952
Isopropylbenzene	50	45		1	90	72-131	08/15/2022 0952
Methyl acetate	50	52		1	104	56-136	08/15/2022 0952
Methyl tertiary butyl ether (MTBE)	50	51		1	103	71-124	08/15/2022 0952
4-Methyl-2-pentanone	100	100		1	102	67-130	08/15/2022 0952
Methylcyclohexane	50	42		1	83	72-132	08/15/2022 0952
Methylene chloride	50	43		1	86	74-124	08/15/2022 0952
Styrene	50	47		1	95	78-123	08/15/2022 0952
1,1,2,2-Tetrachloroethane	50	50		1	101	71-121	08/15/2022 0952
Tetrachloroethene	50	44		1	88	74-129	08/15/2022 0952
Toluene	50	46		1	91	80-121	08/15/2022 0952
1,2,4-Trichlorobenzene	50	43		1	85	69-130	08/15/2022 0952
1,1,1-Trichloroethane	50	44		1	89	74-131	08/15/2022 0952
1,1,2-Trichloroethane	50	48		1	96	80-119	08/15/2022 0952
Trichloroethene	50	43		1	86	79-123	08/15/2022 0952

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51130-002
Batch: 51130
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichlorofluoromethane	50	49		1	98	65-141	08/15/2022 0952
Vinyl chloride	50	59		1	118	58-137	08/15/2022 0952
Xylenes (total)	100	92		1	92	79-121	08/15/2022 0952

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		94	81-118
Bromofluorobenzene		94	85-114
Toluene-d8		92	89-112
Dibromofluoromethane		94	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51416-001
Batch: 51416
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	08/17/2022 1040

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		98	81-118
Bromofluorobenzene		95	85-114
Toluene-d8		96	89-112
Dibromofluoromethane		91	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51416-002
Batch: 51416
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	41		1	81	70-136	08/17/2022 0928

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		90	81-118
Bromofluorobenzene		92	85-114
Toluene-d8		92	89-112
Dibromofluoromethane		88	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ50831-001
Batch: 50831
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/11/2022 1740

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acenaphthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Acenaphthylene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Acetophenone	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Atrazine	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Benzaldehyde	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Benzo(a)anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Benzo(a)pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Benzo(b)fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Benzo(g,h,i)perylene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Benzo(k)fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
1,1'-Biphenyl	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
4-Bromophenyl phenyl ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Butyl benzyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Caprolactam	2.0	U	1	3.0	2.0	1.0	ug/L	08/17/2022 0959
Carbazole	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
bis (2-Chloro-1-methylethyl) ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
4-Chloro-3-methyl phenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
4-Chloroaniline	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
bis(2-Chloroethoxy)methane	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
bis(2-Chloroethyl)ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
2-Chloronaphthalene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
2-Chlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
4-Chlorophenyl phenyl ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Chrysene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Dibenzo(a,h)anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Dibenzofuran	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
3,3'-Dichlorobenzidine	3.5	U	1	4.0	3.5	1.8	ug/L	08/17/2022 0959
2,4-Dichlorophenol	0.50	U	1	1.6	0.50	0.25	ug/L	08/17/2022 0959
Diethylphthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Dimethyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
2,4-Dimethylphenol	1.5	U	1	2.0	1.5	0.62	ug/L	08/17/2022 0959
Di-n-butyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
4,6-Dinitro-2-methylphenol	2.0	U	1	4.0	2.0	1.0	ug/L	08/17/2022 0959
2,4-Dinitrophenol	2.0	U	1	4.0	2.0	1.0	ug/L	08/17/2022 0959
2,4-Dinitrotoluene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
2,6-Dinitrotoluene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Di-n-octylphthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
bis(2-Ethylhexyl)phthalate	3.0	U	1	4.0	3.0	1.5	ug/L	08/17/2022 0959
Fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Fluorene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Hexachlorobenzene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Hexachlorobutadiene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Hexachlorocyclopentadiene	4.0	U	1	4.0	4.0	2.0	ug/L	08/17/2022 0959

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ50831-001
Batch: 50831
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/11/2022 1740

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Hexachloroethane	0.40	U	1	0.80	0.40	0.17	ug/L	08/17/2022 0959
Indeno(1,2,3-c,d)pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Isophorone	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
2-Methylnaphthalene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
2-Methylphenol	1.3	U	1	1.6	1.3	0.67	ug/L	08/17/2022 0959
3+4-Methylphenol	3.0	U	1	4.0	3.0	1.5	ug/L	08/17/2022 0959
Naphthalene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
2-Nitroaniline	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
3-Nitroaniline	2.0	U	1	3.0	2.0	1.0	ug/L	08/17/2022 0959
4-Nitroaniline	3.0	U	1	4.0	3.0	1.5	ug/L	08/17/2022 0959
Nitrobenzene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
2-Nitrophenol	2.0	U	1	3.2	2.0	1.0	ug/L	08/17/2022 0959
4-Nitrophenol	4.0	U	1	5.0	4.0	2.0	ug/L	08/17/2022 0959
N-Nitrosodi-n-propylamine	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
N-Nitrosodiphenylamine (Diphenylamine)	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Pentachlorophenol	4.0	U	1	5.0	4.0	2.0	ug/L	08/17/2022 0959
Phenanthrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Phenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
2,4,5-Trichlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
2,4,6-Trichlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		76	44-119
2-Fluorophenol		47	19-119
Nitrobenzene-d5		73	44-120
Phenol-d5		63	10-115
Terphenyl-d14		104	50-134
2,4,6-Tribromophenol		89	43-140

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ50831-002
Batch: 50831
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/11/2022 1740

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acenaphthene	8.0	6.9		1	87	47-122	08/17/2022 1024
Acenaphthylene	8.0	7.6		1	95	41-130	08/17/2022 1024
Acetophenone	8.0	6.6		1	82	46-118	08/17/2022 1024
Anthracene	8.0	7.8		1	98	57-123	08/17/2022 1024
Atrazine	8.0	7.9		1	99	44-142	08/17/2022 1024
Benzaldehyde	8.0	5.2		1	65	20-115	08/17/2022 1024
Benzo(a)anthracene	8.0	8.2		1	102	58-125	08/17/2022 1024
Benzo(a)pyrene	8.0	8.2		1	102	54-128	08/17/2022 1024
Benzo(b)fluoranthene	8.0	8.4		1	105	53-131	08/17/2022 1024
Benzo(g,h,i)perylene	8.0	8.9		1	111	50-134	08/17/2022 1024
Benzo(k)fluoranthene	8.0	8.1		1	101	57-129	08/17/2022 1024
1,1'-Biphenyl	8.0	6.7		1	83	49-115	08/17/2022 1024
4-Bromophenyl phenyl ether	8.0	7.6		1	95	55-124	08/17/2022 1024
Butyl benzyl phthalate	8.0	9.4		1	117	53-134	08/17/2022 1024
Caprolactam	8.0	8.8		1	110	44-152	08/17/2022 1024
Carbazole	8.0	7.9		1	98	60-122	08/17/2022 1024
bis (2-Chloro-1-methylethyl) ether	8.0	7.3		1	91	37-130	08/17/2022 1024
4-Chloro-3-methyl phenol	8.0	7.5		1	93	52-119	08/17/2022 1024
4-Chloroaniline	8.0	6.2		1	78	33-117	08/17/2022 1024
bis(2-Chloroethoxy)methane	8.0	7.1		1	89	48-120	08/17/2022 1024
bis(2-Chloroethyl)ether	8.0	6.9		1	86	43-118	08/17/2022 1024
2-Chloronaphthalene	8.0	6.8		1	85	40-116	08/17/2022 1024
2-Chlorophenol	8.0	6.6		1	83	38-117	08/17/2022 1024
4-Chlorophenyl phenyl ether	8.0	7.3		1	91	53-121	08/17/2022 1024
Chrysene	8.0	8.1		1	101	59-123	08/17/2022 1024
Dibenzo(a,h)anthracene	8.0	8.6		1	107	51-134	08/17/2022 1024
Dibenzofuran	8.0	6.6		1	83	53-118	08/17/2022 1024
3,3'-Dichlorobenzidine	8.0	4.4		1	55	27-129	08/17/2022 1024
2,4-Dichlorophenol	8.0	6.8		1	85	47-121	08/17/2022 1024
Diethylphthalate	8.0	8.1		1	102	56-125	08/17/2022 1024
Dimethyl phthalate	8.0	7.8		1	98	45-127	08/17/2022 1024
2,4-Dimethylphenol	8.0	7.8		1	98	31-124	08/17/2022 1024
Di-n-butyl phthalate	8.0	9.0		1	112	59-127	08/17/2022 1024
4,6-Dinitro-2-methylphenol	8.0	6.8		1	85	44-137	08/17/2022 1024
2,4-Dinitrophenol	16	9.8		1	61	23-143	08/17/2022 1024
2,4-Dinitrotoluene	8.0	7.9		1	98	57-128	08/17/2022 1024
2,6-Dinitrotoluene	8.0	7.3		1	91	57-124	08/17/2022 1024
Di-n-octylphthalate	8.0	8.1		1	102	51-140	08/17/2022 1024
bis(2-Ethylhexyl)phthalate	8.0	10		1	128	55-135	08/17/2022 1024
Fluoranthene	8.0	8.3		1	104	57-128	08/17/2022 1024
Fluorene	8.0	7.2		1	90	52-124	08/17/2022 1024
Hexachlorobenzene	8.0	7.3		1	92	53-125	08/17/2022 1024
Hexachlorobutadiene	8.0	5.8		1	73	22-124	08/17/2022 1024
Hexachlorocyclopentadiene	40	20		1	50	16-96	08/17/2022 1024

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ50831-002
Batch: 50831
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/11/2022 1740

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Hexachloroethane	8.0	6.0		1	75	21-115	08/17/2022 1024
Indeno(1,2,3-c,d)pyrene	8.0	8.4		1	105	52-134	08/17/2022 1024
Isophorone	8.0	6.7		1	84	42-124	08/17/2022 1024
2-Methylnaphthalene	8.0	6.7		1	84	40-121	08/17/2022 1024
2-Methylphenol	8.0	7.3		1	91	30-117	08/17/2022 1024
3+4-Methylphenol	8.0	7.0		1	88	29-110	08/17/2022 1024
Naphthalene	8.0	6.8		1	85	40-121	08/17/2022 1024
2-Nitroaniline	8.0	7.9		1	99	55-127	08/17/2022 1024
3-Nitroaniline	8.0	5.6		1	69	41-128	08/17/2022 1024
4-Nitroaniline	8.0	6.8		1	85	30-135	08/17/2022 1024
Nitrobenzene	8.0	5.9		1	73	45-121	08/17/2022 1024
2-Nitrophenol	8.0	6.9		1	87	47-123	08/17/2022 1024
4-Nitrophenol	16	16		1	98	53-130	08/17/2022 1024
N-Nitrosodi-n-propylamine	8.0	7.1		1	89	49-119	08/17/2022 1024
N-Nitrosodiphenylamine (Diphenylamine)	8.0	7.6		1	95	51-123	08/17/2022 1024
Pentachlorophenol	16	14		1	85	35-138	08/17/2022 1024
Phenanthrene	8.0	7.5		1	94	59-120	08/17/2022 1024
Phenol	8.0	7.0		1	87	49-117	08/17/2022 1024
Pyrene	8.0	8.5		1	106	57-126	08/17/2022 1024
2,4,5-Trichlorophenol	8.0	7.0		1	88	53-123	08/17/2022 1024
2,4,6-Trichlorophenol	8.0	7.3		1	91	50-125	08/17/2022 1024

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		83	44-119
2-Fluorophenol		74	19-119
Nitrobenzene-d5		85	44-120
Phenol-d5		80	10-115
Terphenyl-d14		105	50-134
2,4,6-Tribromophenol		97	43-140

LOQ = Limit of Quantitation
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LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MS

Sample ID: XH10027-008MS
Batch: 50831
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/11/2022 1740

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acenaphthene	ND	16	14		1	85	47-122	08/17/2022 1203
Acenaphthylene	ND	16	15		1	95	41-130	08/17/2022 1203
Acetophenone	ND	16	13		1	84	46-118	08/17/2022 1203
Anthracene	ND	16	16		1	99	57-123	08/17/2022 1203
Atrazine	ND	16	16		1	99	44-142	08/17/2022 1203
Benzaldehyde	ND	16	11		1	71	20-115	08/17/2022 1203
Benzo(a)anthracene	ND	16	17		1	103	58-125	08/17/2022 1203
Benzo(a)pyrene	ND	16	16		1	102	54-128	08/17/2022 1203
Benzo(b)fluoranthene	ND	16	17		1	105	53-131	08/17/2022 1203
Benzo(g,h,i)perylene	ND	16	18		1	115	50-134	08/17/2022 1203
Benzo(k)fluoranthene	ND	16	16		1	102	57-129	08/17/2022 1203
1,1'-Biphenyl	ND	16	13		1	83	49-115	08/17/2022 1203
4-Bromophenyl phenyl ether	ND	16	16		1	98	55-124	08/17/2022 1203
Butyl benzyl phthalate	ND	16	19		1	118	53-134	08/17/2022 1203
Caprolactam	ND	16	19		1	121	44-152	08/17/2022 1203
Carbazole	ND	16	17		1	106	60-122	08/17/2022 1203
bis (2-Chloro-1-methylethyl) ether	ND	16	14		1	88	37-130	08/17/2022 1203
4-Chloro-3-methyl phenol	ND	16	15		1	97	52-119	08/17/2022 1203
4-Chloroaniline	ND	16	11		1	69	33-117	08/17/2022 1203
bis(2-Chloroethoxy)methane	ND	16	14		1	87	48-120	08/17/2022 1203
bis(2-Chloroethyl)ether	ND	16	14		1	88	43-118	08/17/2022 1203
2-Chloronaphthalene	ND	16	13		1	84	40-116	08/17/2022 1203
2-Chlorophenol	ND	16	14		1	87	38-117	08/17/2022 1203
4-Chlorophenyl phenyl ether	ND	16	15		1	94	53-121	08/17/2022 1203
Chrysene	ND	16	16		1	100	59-123	08/17/2022 1203
Dibenzo(a,h)anthracene	ND	16	18		1	111	51-134	08/17/2022 1203
Dibenzofuran	ND	16	13		1	84	53-118	08/17/2022 1203
3,3'-Dichlorobenzidine	ND	16	11		1	72	27-129	08/17/2022 1203
2,4-Dichlorophenol	ND	16	14		1	90	47-121	08/17/2022 1203
Diethylphthalate	ND	16	17		1	103	56-125	08/17/2022 1203
Dimethyl phthalate	ND	16	16		1	99	45-127	08/17/2022 1203
2,4-Dimethylphenol	ND	16	17		1	105	31-124	08/17/2022 1203
Di-n-butyl phthalate	0.57	16	19		1	113	59-127	08/17/2022 1203
4,6-Dinitro-2-methylphenol	ND	16	15		1	93	44-137	08/17/2022 1203
2,4-Dinitrophenol	ND	32	26		1	82	23-143	08/17/2022 1203
2,4-Dinitrotoluene	ND	16	16		1	97	57-128	08/17/2022 1203
2,6-Dinitrotoluene	ND	16	15		1	93	57-124	08/17/2022 1203
Di-n-octylphthalate	ND	16	16		1	100	51-140	08/17/2022 1203
bis(2-Ethylhexyl)phthalate	ND	16	20		1	127	55-135	08/17/2022 1203
Fluoranthene	ND	16	16		1	103	57-128	08/17/2022 1203
Fluorene	ND	16	14		1	89	52-124	08/17/2022 1203
Hexachlorobenzene	ND	16	15		1	94	53-125	08/17/2022 1203
Hexachlorobutadiene	ND	16	12		1	74	22-124	08/17/2022 1203
Hexachlorocyclopentadiene	ND	80	42		1	53	16-96	08/17/2022 1203

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MS

Sample ID: XH10027-008MS
Batch: 50831
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/11/2022 1740

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Hexachloroethane	ND	16	12		1	74	21-115	08/17/2022 1203
Indeno(1,2,3-c,d)pyrene	ND	16	17		1	109	52-134	08/17/2022 1203
Isophorone	ND	16	13		1	83	42-124	08/17/2022 1203
2-Methylnaphthalene	ND	16	13		1	84	40-121	08/17/2022 1203
2-Methylphenol	ND	16	15		1	97	30-117	08/17/2022 1203
3+4-Methylphenol	ND	16	15		1	92	29-110	08/17/2022 1203
Naphthalene	ND	16	14		1	85	40-121	08/17/2022 1203
2-Nitroaniline	ND	16	17		1	104	55-127	08/17/2022 1203
3-Nitroaniline	ND	16	11		1	69	41-128	08/17/2022 1203
4-Nitroaniline	ND	16	14		1	87	30-135	08/17/2022 1203
Nitrobenzene	ND	16	12		1	73	45-121	08/17/2022 1203
2-Nitrophenol	ND	16	14		1	87	47-123	08/17/2022 1203
4-Nitrophenol	ND	32	31		1	97	53-130	08/17/2022 1203
N-Nitrosodi-n-propylamine	ND	16	15		1	91	49-119	08/17/2022 1203
N-Nitrosodiphenylamine (Diphenylamine)	ND	16	16		1	102	51-123	08/17/2022 1203
Pentachlorophenol	ND	32	31		1	96	35-138	08/17/2022 1203
Phenanthrene	ND	16	15		1	94	59-120	08/17/2022 1203
Phenol	ND	16	15		1	92	49-117	08/17/2022 1203
Pyrene	ND	16	16		1	103	57-126	08/17/2022 1203
2,4,5-Trichlorophenol	ND	16	15		1	92	53-123	08/17/2022 1203
2,4,6-Trichlorophenol	ND	16	15		1	94	50-125	08/17/2022 1203

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		80	44-119
2-Fluorophenol		74	19-119
Nitrobenzene-d5		82	44-120
Phenol-d5		79	10-115
Terphenyl-d14		98	50-134
2,4,6-Tribromophenol		98	43-140

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MSD

Sample ID: XH10027-008MD
Batch: 50831
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/11/2022 1740

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acenaphthene	ND	16	13		1	81	4.8	47-122	20	08/17/2022 1227
Acenaphthylene	ND	16	14		1	90	5.5	41-130	20	08/17/2022 1227
Acetophenone	ND	16	13		1	82	2.4	46-118	20	08/17/2022 1227
Anthracene	ND	16	15		1	94	5.1	57-123	20	08/17/2022 1227
Atrazine	ND	16	16		1	98	0.44	44-142	20	08/17/2022 1227
Benzaldehyde	ND	16	11		1	72	0.82	20-115	20	08/17/2022 1227
Benzo(a)anthracene	ND	16	16		1	99	4.2	58-125	20	08/17/2022 1227
Benzo(a)pyrene	ND	16	16		1	98	3.9	54-128	20	08/17/2022 1227
Benzo(b)fluoranthene	ND	16	16		1	101	4.3	53-131	20	08/17/2022 1227
Benzo(g,h,i)perylene	ND	16	18		1	110	3.9	50-134	20	08/17/2022 1227
Benzo(k)fluoranthene	ND	16	15		1	97	5.4	57-129	20	08/17/2022 1227
1,1'-Biphenyl	ND	16	13		1	79	4.9	49-115	20	08/17/2022 1227
4-Bromophenyl phenyl ether	ND	16	15		1	93	5.1	55-124	20	08/17/2022 1227
Butyl benzyl phthalate	ND	16	18		1	113	4.4	53-134	20	08/17/2022 1227
Caprolactam	ND	16	19		1	118	2.5	44-152	20	08/17/2022 1227
Carbazole	ND	16	15		1	96	9.7	60-122	20	08/17/2022 1227
bis (2-Chloro-1-methylethyl) ether	ND	16	13		1	83	5.2	37-130	20	08/17/2022 1227
4-Chloro-3-methyl phenol	ND	16	15		1	91	5.8	52-119	20	08/17/2022 1227
4-Chloroaniline	ND	16	11		1	66	5.4	33-117	20	08/17/2022 1227
bis(2-Chloroethoxy)methane	ND	16	13		1	82	6.2	48-120	20	08/17/2022 1227
bis(2-Chloroethyl)ether	ND	16	13		1	84	5.3	43-118	20	08/17/2022 1227
2-Chloronaphthalene	ND	16	13		1	81	3.8	40-116	20	08/17/2022 1227
2-Chlorophenol	ND	16	14		1	84	3.4	38-117	20	08/17/2022 1227
4-Chlorophenyl phenyl ether	ND	16	14		1	89	5.5	53-121	20	08/17/2022 1227
Chrysene	ND	16	15		1	94	5.5	59-123	20	08/17/2022 1227
Dibenzo(a,h)anthracene	ND	16	17		1	107	4.1	51-134	20	08/17/2022 1227
Dibenzofuran	ND	16	13		1	80	4.2	53-118	20	08/17/2022 1227
3,3'-Dichlorobenzidine	ND	16	12		1	72	1.1	27-129	20	08/17/2022 1227
2,4-Dichlorophenol	ND	16	14		1	84	6.3	47-121	20	08/17/2022 1227
Diethylphthalate	ND	16	16		1	99	4.6	56-125	20	08/17/2022 1227
Dimethyl phthalate	ND	16	15		1	95	3.4	45-127	20	08/17/2022 1227
2,4-Dimethylphenol	ND	16	16		1	98	7.2	31-124	20	08/17/2022 1227
Di-n-butyl phthalate	0.57	16	18		1	107	5.4	59-127	20	08/17/2022 1227
4,6-Dinitro-2-methylphenol	ND	16	13		1	84	9.4	44-137	20	08/17/2022 1227
2,4-Dinitrophenol	ND	32	23		1	72	13	23-143	20	08/17/2022 1227
2,4-Dinitrotoluene	ND	16	15		1	94	3.7	57-128	20	08/17/2022 1227
2,6-Dinitrotoluene	ND	16	14		1	88	4.6	57-124	20	08/17/2022 1227
Di-n-octylphthalate	ND	16	15		1	94	6.4	51-140	20	08/17/2022 1227
bis(2-Ethylhexyl)phthalate	ND	16	19		1	116	8.8	55-135	20	08/17/2022 1227
Fluoranthene	ND	16	16		1	99	4.0	57-128	20	08/17/2022 1227
Fluorene	ND	16	14		1	86	4.3	52-124	20	08/17/2022 1227
Hexachlorobenzene	ND	16	14		1	90	4.4	53-125	20	08/17/2022 1227
Hexachlorobutadiene	ND	16	11		1	71	4.7	22-124	20	08/17/2022 1227
Hexachlorocyclopentadiene	ND	80	40		1	50	4.5	16-96	20	08/17/2022 1227

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MSD

Sample ID: XH10027-008MD
Batch: 50831
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/11/2022 1740

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Hexachloroethane	ND	16	11		1	72	3.2	21-115	20	08/17/2022 1227
Indeno(1,2,3-c,d)pyrene	ND	16	17		1	103	5.2	52-134	20	08/17/2022 1227
Isophorone	ND	16	13		1	78	5.4	42-124	20	08/17/2022 1227
2-Methylnaphthalene	ND	16	13		1	79	5.5	40-121	20	08/17/2022 1227
2-Methylphenol	ND	16	15		1	92	4.4	30-117	20	08/17/2022 1227
3+4-Methylphenol	ND	16	15		1	91	1.6	29-110	20	08/17/2022 1227
Naphthalene	ND	16	13		1	80	5.8	40-121	20	08/17/2022 1227
2-Nitroaniline	ND	16	17		1	104	0.11	55-127	20	08/17/2022 1227
3-Nitroaniline	ND	16	11		1	70	0.51	41-128	20	08/17/2022 1227
4-Nitroaniline	ND	16	14		1	88	1.8	30-135	20	08/17/2022 1227
Nitrobenzene	ND	16	11		1	68	6.6	45-121	20	08/17/2022 1227
2-Nitrophenol	ND	16	13		1	82	5.5	47-123	20	08/17/2022 1227
4-Nitrophenol	ND	32	30		1	92	5.0	53-130	20	08/17/2022 1227
N-Nitrosodi-n-propylamine	ND	16	14		1	89	1.8	49-119	20	08/17/2022 1227
N-Nitrosodiphenylamine (Diphenylamine)	ND	16	16		1	98	3.7	51-123	20	08/17/2022 1227
Pentachlorophenol	ND	32	29		1	89	7.5	35-138	20	08/17/2022 1227
Phenanthrene	ND	16	14		1	89	5.9	59-120	20	08/17/2022 1227
Phenol	ND	16	14		1	90	2.5	49-117	40	08/17/2022 1227
Pyrene	ND	16	16		1	98	5.5	57-126	20	08/17/2022 1227
2,4,5-Trichlorophenol	ND	16	14		1	89	2.9	53-123	20	08/17/2022 1227
2,4,6-Trichlorophenol	ND	16	15		1	91	3.5	50-125	20	08/17/2022 1227

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		79	44-119
2-Fluorophenol		72	19-119
Nitrobenzene-d5		78	44-120
Phenol-d5		80	10-115
Terphenyl-d14		94	50-134
2,4,6-Tribromophenol		95	43-140

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J = Estimated result < LOQ and ≥ DL
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N = Recovery is out of criteria
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+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MB

Sample ID: XQ50905-001
Batch: 50905
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 08/15/2022 0840

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Arsenic	2.5	U	1	5.0	2.5	1.3	ug/L	08/23/2022 0215
Barium	2.5	U	1	5.0	2.5	1.3	ug/L	08/23/2022 0215
Cadmium	0.25	U	1	0.50	0.25	0.13	ug/L	08/23/2022 0215
Chromium	2.5	U	1	5.0	2.5	1.3	ug/L	08/23/2022 0215
Lead	0.50	U	1	1.0	0.50	0.25	ug/L	08/23/2022 0215
Selenium	2.5	U	1	5.0	2.5	1.3	ug/L	08/23/2022 0215
Silver	0.50	U	1	1.0	0.50	0.25	ug/L	08/23/2022 0215

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - LCS

Sample ID: XQ50905-002
Batch: 50905
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 08/15/2022 0840

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Arsenic	100	100		1	101	84-116	08/23/2022 0223
Barium	100	100		1	103	86-114	08/23/2022 0223
Cadmium	100	96		1	96	87-115	08/23/2022 0223
Chromium	100	110		1	108	85-116	08/23/2022 0223
Lead	100	110		1	106	88-115	08/23/2022 0223
Selenium	100	86		1	86	80-120	08/31/2022 1947
Silver	100	110		1	110	85-116	08/31/2022 1947

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MB

Sample ID: XQ50806-001
Batch: 50806
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 08/13/2022 1352

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Mercury	0.18	U	1	0.20	0.18	0.091	ug/L	08/13/2022 1619

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - LCS

Sample ID: XQ50806-002
Batch: 50806
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 08/13/2022 1352

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Mercury	2.0	2.1		1	107	82-119	08/13/2022 1622

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MS

Sample ID: XH10027-008MS
Batch: 50806
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 08/13/2022 1352

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Mercury	ND	2.0	2.1		1	107	82-119	08/13/2022 1638

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MSD

Sample ID: XH10027-008MD
Batch: 50806
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 08/13/2022 1352

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Mercury	ND	2.0	2.2		1	108	0.65	82-119	20	08/13/2022 1641

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Chain of Custody
and
Miscellaneous Documents

Pace Analytical®

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www.pacelabs.com

Number 137977

Client: Terrasan Consultants	Report to Contact: Ethan Dinwiddie@Terrasan.com	Telephone No. / E-mail: Dan Malone@Terrasan.com	Quote No.: 25322
Address: 2401 Brentwood Rd, Suite 107	Sampler's Signature: X [signature]	Analysis (Attach list if more space is needed)	Page 1 of 2
City: Raleigh; State: NC; Zip Code: 27604	Printed Name: Ethan Dinwiddie		XH10027
Project Name: TAMP			csc
Project No.: 702P145; P.O. No.:			

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	G=Grab C=Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	No of Containers by Preservative Type: Unpres.	HCl	HNO3	HCl	NaOH	2025 Kit	Field Filtered	VOCs 8260	SVOCs 8270	RCRA 8 Metals	Remarks / Cooler I.D.
SW-01A	8/9	1015	G	X						3				X			
SW-01B	↓	1050	G	X						3				X			
SW-01	↓	950	G	X						3				X			
SW-02	↓	910	G	X						3				X			
SW-02A	↓	930	G	X						3				X			
SW-03	↓	900	G	X						3				X			
DUP-SW-02	↓	—	G	X						3				X			
MW-130	↓	1050	G	X			2		1	3				X	X	X	
MW-131	↓	1150	G	X			2		1	3				X	X	X	
TB-01	↓	—	G	X						2				X			

Turn Around Time Required (Prior lab approval required for expedited TAT): ☒ Standard ☐ Rush (Specify)

Sample Disposal: ☐ Return to Client ☒ Disposal by Lab

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☒ Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by: [signature]	8/9/22	1445	1. Received by: [signature]	8.9.22	1445
2. Relinquished by: [signature]	8/9/22	1503	2. Received by:		
3. Relinquished by:			3. Received by:		
4. Relinquished by: fedex	8.10.22	1000	4. Laboratory received by: [signature]	8.10.22	1000

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY: Received on ice (Circle) Yes No Ice Pack — Receipt Temp. 3.1 °C — Temp Blank ☒ Y ☐ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME003N2-01

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Telephone No. 803-791-9700 Fax No. 803-791-9111
www.pacelabs.com

Number 137978

Client: Terrasa Consultants	Report to Contact: Ethan.Dinwiddie@Terrasa.com	Telephone No. / E-mail: Dan.Malone@Terrasa.com	Quote No. 25322
Address: 2401 Brentwood Rd, Suite 107	Sampler's Signature: X [signature]	Analysis (Attach list if more space is needed)	Page 2 of 2
City: Raleigh; State: NC; Zip Code: 27604	Printed Name: Ethan Dinwiddie		XH10027
Project Name: TAMP			CSD
Project No.: 7021P145	P.O. No.		

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	Discrete C-Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	No of Containers by Preservative Type: Dropout	H2SO4	HNO3	HCl	NaOH	5035 Kit	Field Filtered	VOCs 8240	SVOCs 8270	RCRA 8 Metals							Remarks / Cooler I.D.
MW-137	8/8	1600	G	X			2		1	3				X	X	X							
MW-140	8/8/8/9	1800/930	G	X			2		2	3				X	X	X							
TAMP-MW-8	8/9	1005	G	X			2		2	3				X	X	X							

Turn Around Time Required (Prior lab approval required for expedited TAT.)	Sample Disposal	Possible Hazard Identification	QC Requirements (Specify)
☑ Standard ☐ Rush (Specify)	☐ Return to Client ☒ Disposal by Lab	☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☒ Unknown	

	Date	Time		Date	Time
1. Relinquished by [signature]	8/9		1. Received by [signature]	8.9.22	1450
2. Relinquished by [signature]	8/9	1523	2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by fedex	8.10.22	1000	4. Laboratory received by [signature]	8.10.22	1000

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on ice (Circle) Yes No Ice Pack
Receipt Temp. 3.1 °C
Temp Blank ☑ Y ☐ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME003N2-01

DC#_Title: ENV-FRM-WCOL-0286 v02_Samples Receipt Checklist (SRC)
Effective Date: 8/2/2022

Sample Receipt Checklist (SRC)

Client: Terracon Cooler Inspected by/date: KDRW / 08/10/2022 Lot #: XH10027

Means of receipt: [ ] Pace [ ] Client [ ] UPS [✓] FedEx [ ] Other:

[ ] Yes	[✓] No		1. Were custody seals present on the cooler?
[ ] Yes	[ ] No	[✓] NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: 22-1645 Chlorine Strip ID: NA Tested by: KDRW

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

3.1 / 3.1 °C NA / NA °C NA / NA °C NA / NA °C

Method: [✓] Temperature Blank [ ] Against Bottles IR Gun ID: 8 IR Gun Correction Factor: 0 °C

Method of coolant: [✓] Wet Ice [ ] Ice Packs [ ] Dry Ice [ ] None

[✓] Yes	[ ] No	[ ] NA	3. Were all coolers received at or below 6.0°C? If no, was Project Manager notified? PM was Notified by: phone / email / face-to-face (circle one).
[✓] Yes	[ ] No	[ ] NA	4. Is the commercial courier's packing slip attached to this form?
[✓] Yes	[ ] No		5. Were proper custody procedures (relinquished/received) followed?
[✓] Yes	[ ] No		6. Were sample IDs listed on the COC and all sample containers?
[✓] Yes	[ ] No		7. Was collection date & time listed on the COC and all sample containers?
[✓] Yes	[ ] No		8. Did all container label information (ID, date, time) agree with the COC?
[✓] Yes	[ ] No		9. Were tests to be performed listed on the COC?
[✓] Yes	[ ] No		10. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
[✓] Yes	[ ] No		11. Was adequate sample volume available?
[✓] Yes	[ ] No		12. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
[✓] Yes	[ ] No		13. Were all samples containers accounted for? (No missing/excess)
[✓] Yes	[ ] No	[ ] NA	14. Were VOA, 8015C and RSK-175 samples free of bubbles >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
[✓] Yes	[ ] No	[ ] NA	15. Were all DRO/metals/nutrient samples received at a pH of < 2?
[ ] Yes	[ ] No	[✓] NA	16. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
[ ] Yes	[ ] No	[✓] NA	17. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
[✓] Yes	[ ] No	[ ] NA	18. Was the quote number listed on the container label? If yes, Quote # 25322

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA. ☐
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Unique ID: NA.

Comments:

Qualtrax ID: 56360 Pace® Analytical Services, LLC Page 1 of 1

Report of Analysis

Terracon Consultants, Inc.
2401 Brentwood Road
Suite 107 I
Raleigh, NC 27604
Attention: Ethan Dinwiddie

Project Name: TAMP

Project Number: 7021P145

Lot Number:**XH10028**

Date Completed:09/02/2022

09/07/2022 4:36 PM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.
This report shall not be reproduced, except in its entirety, without the written approval of Pace Analytical Services, LLC.

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
Terracon Consultants, Inc.
Lot Number: XH10028

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Additionally, the DoD QSM version 5.3 has been followed for these samples. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs, the DoD QSM, or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

VOA 8260D

The continuing calibration verification (CCV) associated with sample XH10028-005 (TB-03) for Vinyl Chloride (21%) recovered above the upper control limit. The sample associated with this CCV were non-detect for the affected analytes; therefore, the data has been reported.

The continuing calibration verification (CCV) associated with samples XH10028-001, XH10028-002, XH10028-003, and XH10028-004 for Acetone recovered above the upper control limit. The samples associated with this CCV were non-detect for the affected analyte; therefore, the data has been reported.

XH10028-001 (MW-5) (Run 2) (Analysis Batch 51693) TCL VOCs (OLM04.3) (DOD QSM 5.4)
XH10028-002 (MW-111) (Run 2) (Analysis Batch 51693) TCL VOCs (OLM04.3) (DOD QSM 5.4)
XH10028-003 (MW-2) (Run 2) (Analysis Batch 51693) TCL VOCs (OLM04.3) (DOD QSM 5.4)
XH10028-004 (MW-102) (Run 2) (Analysis Batch 51693) TCL VOCs (OLM04.3) (DOD QSM 5.4)

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Sample Summary

Terracon Consultants, Inc.

Lot Number: XH10028

Project Name: TAMP

Project Number: 7021P145

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	MW-5	Aqueous	08/09/2022 0845	08/10/2022
002	MW-111	Aqueous	08/09/2022 1250	08/10/2022
003	MW-2	Aqueous	08/09/2022 1605	08/10/2022
004	MW-102	Aqueous	08/09/2022 1125	08/10/2022
005	TB-03	Aqueous	08/09/2022	08/10/2022

(5 samples)

Detection Summary

Terracon Consultants, Inc.

Lot Number: XH10028

Project Name: TAMP

Project Number: 7021P145

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	MW-5	Aqueous	Acetone	8260D	8.9	J	ug/L	5
001	MW-5	Aqueous	Chloromethane (Methyl	8260D	0.98	J	ug/L	5
001	MW-5	Aqueous	Di-n-butyl phthalate	8270E	0.65	J	ug/L	7
001	MW-5	Aqueous	Barium	6020B	33		ug/L	9
001	MW-5	Aqueous	Cadmium	6020B	0.21	J	ug/L	9
001	MW-5	Aqueous	Chromium	6020B	1.3	J	ug/L	9
002	MW-111	Aqueous	Acetone	8260D	5.9	J	ug/L	10
002	MW-111	Aqueous	Chloroform	8260D	0.65	J	ug/L	10
002	MW-111	Aqueous	cis-1,2-Dichloroethene	8260D	1.3		ug/L	10
002	MW-111	Aqueous	Tetrachloroethene	8260D	7.2		ug/L	10
002	MW-111	Aqueous	Trichloroethene	8260D	21		ug/L	11
002	MW-111	Aqueous	Barium	6020B	5900		ug/L	14
002	MW-111	Aqueous	Chromium	6020B	13		ug/L	14
002	MW-111	Aqueous	Lead	6020B	0.37	J	ug/L	14
002	MW-111	Aqueous	Selenium	6020B	1.7	J	ug/L	14
003	MW-2	Aqueous	Acetone	8260D	8.6	J	ug/L	15
003	MW-2	Aqueous	Chloroform	8260D	1.5		ug/L	15
003	MW-2	Aqueous	Chloromethane (Methyl	8260D	0.72	J	ug/L	15
003	MW-2	Aqueous	1,1-Dichloroethane	8260D	10		ug/L	15
003	MW-2	Aqueous	1,2-Dichloroethane	8260D	1.6		ug/L	15
003	MW-2	Aqueous	1,1-Dichloroethene	8260D	15		ug/L	15
003	MW-2	Aqueous	1,1,2-Trichloro-1,2,2-	8260D	1.9		ug/L	15
003	MW-2	Aqueous	1,1,1-Trichloroethane	8260D	4.3		ug/L	15
003	MW-2	Aqueous	Trichloroethene	8260D	0.93	J	ug/L	16
003	MW-2	Aqueous	Trichlorofluoromethane	8260D	1.4		ug/L	16
003	MW-2	Aqueous	Barium	6020B	26		ug/L	19
003	MW-2	Aqueous	Chromium	6020B	1.3	J	ug/L	19
004	MW-102	Aqueous	Acetone	8260D	5.5	J	ug/L	21
004	MW-102	Aqueous	cis-1,2-Dichloroethene	8260D	1.0		ug/L	21
004	MW-102	Aqueous	Tetrachloroethene	8260D	1.9		ug/L	21
004	MW-102	Aqueous	Trichloroethene	8260D	4.0		ug/L	22
004	MW-102	Aqueous	Barium	6020B	15		ug/L	26
004	MW-102	Aqueous	Cadmium	6020B	0.21	J	ug/L	26
004	MW-102	Aqueous	Lead	6020B	0.66	J	ug/L	26
005	TB-03	Aqueous	Acetone	8260D	13	J	ug/L	27

(35 detections)

Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10028-001**

Description: **MW-5** Matrix: **Aqueous**

Date Sampled: **08/09/2022 0845** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	1	08/19/2022 1307	BWS		51693

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**8.9**	**J**	**20**	10	**5.0**	**ug/L**	**2**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	2
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chloromethane (Methyl chloride)	**74-87-3**	**8260D**	**0.98**	**J**	**2.0**	1.0	**0.50**	**ug/L**	**2**
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	2
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	2
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10028-001**	
Description: **MW-5**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 0845**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	1	08/19/2022 1307	BWS		51693

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		91	81-118
Bromofluorobenzene		88	85-114
Toluene-d8		92	89-112
Dibromofluoromethane		91	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10028-001**

Description: **MW-5** Matrix: **Aqueous**

Date Sampled: **08/09/2022 0845** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1431	CMF	08/11/2022 1740	50831

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	**84-74-2**	**8270E**	**0.65**	**J**	**1.6**	1.0	**0.50**	**ug/L**	**1**
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation | B = Detected in the method blank | E = Quantitation of compound exceeded the calibration range | DL = Detection Limit | Q = Surrogate failure

U = Not detected at or above the LOD | N = Recovery is out of criteria | P = The RPD between two GC columns exceeds 40% | J = Estimated result < LOQ and ≥ DL | L = LCS/LCSD failure

H = Out of holding time | W = Reported on wet weight basis | LOD = Limit of Detection | S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10028-001**

Description: **MW-5** Matrix: **Aqueous**

Date Sampled: **08/09/2022 0845** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1431	CMF	08/11/2022 1740	50831

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		66	44-119
2-Fluorophenol		39	19-119
Nitrobenzene-d5		63	44-120
Phenol-d5		56	10-115
Terphenyl-d14		95	50-134
2,4,6-Tribromophenol		84	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10028-001**

Description: **MW-5** Matrix: **Aqueous**

Date Sampled: **08/09/2022 0845** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	08/23/2022 0452	BNW	08/15/2022 0840	50905
1		7470A	1	08/13/2022 1654	MRW2	08/13/2022 1352	50806
2	3005A	6020B	1	08/31/2022 2214	BNW	08/15/2022 0840	50905

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**33**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	**7440-43-9**	**6020B**	**0.21**	**J**	**0.50**	0.25	**0.13**	**ug/L**	**1**
Chromium	**7440-47-3**	**6020B**	**1.3**	**J**	**5.0**	2.5	**1.3**	**ug/L**	**1**
Lead	7439-92-1	6020B	0.50	U	1.0	0.50	0.25	ug/L	1
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	2
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10028-002**

Description: **MW-111** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1250** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	1	08/19/2022 1331	BWS		51693

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**5.9**	**J**	**20**	10	**5.0**	**ug/L**	**2**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	2
Chloroform	**67-66-3**	**8260D**	**0.65**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	2
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**1.3**		**1.0**	0.80	**0.40**	**ug/L**	**2**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	2
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	2
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Tetrachloroethene	**127-18-4**	**8260D**	**7.2**		**1.0**	0.80	**0.40**	**ug/L**	**2**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10028-002**	
Description: **MW-111**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 1250**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	1	08/19/2022 1331	BWS		51693

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**21**		**1.0**	0.80	**0.40**	**ug/L**	**2**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		98	81-118
Bromofluorobenzene		96	85-114
Toluene-d8		101	89-112
Dibromofluoromethane		98	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10028-002**

Description: **MW-111** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1250** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1455	CMF	08/11/2022 1740	50831

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	84-74-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10028-002**

Description: **MW-111** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1250** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1455	CMF	08/11/2022 1740	50831

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		70	44-119
2-Fluorophenol		39	19-119
Nitrobenzene-d5		67	44-120
Phenol-d5		52	10-115
Terphenyl-d14		96	50-134
2,4,6-Tribromophenol		86	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10028-002**

Description: **MW-111** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1250** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	08/23/2022 0517	BNW	08/15/2022 0840	50905
1		7470A	1	08/13/2022 1657	MRW2	08/13/2022 1352	50806
2	3005A	6020B	50	08/31/2022 2222	BNW	08/15/2022 0840	50905

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**5900**		**250**	130	**63**	**ug/L**	**2**
Cadmium	7440-43-9	6020B	0.25	U	0.50	0.25	0.13	ug/L	1
Chromium	**7440-47-3**	**6020B**	**13**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Lead	**7439-92-1**	**6020B**	**0.37**	**J**	**1.0**	0.50	**0.25**	**ug/L**	**1**
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	**7782-49-2**	**6020B**	**1.7**	**J**	**5.0**	2.5	**1.3**	**ug/L**	**1**
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10028-003**

Description: **MW-2** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1605** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	1	08/19/2022 1356	BWS		51693

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**8.6**	**J**	**20**	10	**5.0**	**ug/L**	**2**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	2
Chloroform	**67-66-3**	**8260D**	**1.5**		**1.0**	0.80	**0.40**	**ug/L**	**2**
Chloromethane (Methyl chloride)	**74-87-3**	**8260D**	**0.72**	**J**	**2.0**	1.0	**0.50**	**ug/L**	**2**
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	2
1,1-Dichloroethane	**75-34-3**	**8260D**	**10**		**1.0**	0.80	**0.40**	**ug/L**	**2**
1,2-Dichloroethane	**107-06-2**	**8260D**	**1.6**		**1.0**	0.80	**0.40**	**ug/L**	**2**
1,1-Dichloroethene	**75-35-4**	**8260D**	**15**		**1.0**	0.80	**0.40**	**ug/L**	**2**
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	2
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	2
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**1.9**		**1.0**	0.84	**0.42**	**ug/L**	**2**
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,1-Trichloroethane	**71-55-6**	**8260D**	**4.3**		**1.0**	0.80	**0.40**	**ug/L**	**2**
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10028-003**	
Description: **MW-2**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 1605**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	1	08/19/2022 1356	BWS		51693

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**0.93**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Trichlorofluoromethane	**75-69-4**	**8260D**	**1.4**		**1.0**	0.80	**0.40**	**ug/L**	**2**
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		95	81-118
Bromofluorobenzene		94	85-114
Toluene-d8		98	89-112
Dibromofluoromethane		93	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10028-003**

Description: **MW-2** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1605** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1520	CMF	08/11/2022 1740	50831

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	84-74-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10028-003**

Description: **MW-2** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1605** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1520	CMF	08/11/2022 1740	50831

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		81	44-119
2-Fluorophenol		49	19-119
Nitrobenzene-d5		75	44-120
Phenol-d5		63	10-115
Terphenyl-d14		104	50-134
2,4,6-Tribromophenol		93	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10028-003**

Description: **MW-2** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1605** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	08/23/2022 0525	BNW	08/15/2022 0840	50905
1		7470A	1	08/13/2022 1700	MRW2	08/13/2022 1352	50806

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**26**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	7440-43-9	6020B	0.25	U	0.50	0.25	0.13	ug/L	1
Chromium	**7440-47-3**	**6020B**	**1.3**	**J**	**5.0**	2.5	**1.3**	**ug/L**	**1**
Lead	7439-92-1	6020B	0.50	U	1.0	0.50	0.25	ug/L	1
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Inorganic non-metals

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10028-004**	
Description: **MW-102**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 1125**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2		(TOC) SM 5310C-2011	1	08/27/2022 0629	CMM		52324

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
TOC		SM 5310C-2011	1500	U	2000	1500	600	ug/L	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10028-004**

Description: **MW-102** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1125** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	1	08/19/2022 1420	BWS		51693

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**5.5**	**J**	**20**	10	**5.0**	**ug/L**	**2**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	2
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	2
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**1.0**		**1.0**	0.80	**0.40**	**ug/L**	**2**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	2
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	2
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Tetrachloroethene	**127-18-4**	**8260D**	**1.9**		**1.0**	0.80	**0.40**	**ug/L**	**2**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10028-004**	
Description: **MW-102**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 1125**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	1	08/19/2022 1420	BWS		51693

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**4.0**		**1.0**	0.80	**0.40**	**ug/L**	**2**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		91	81-118
Bromofluorobenzene		86	85-114
Toluene-d8		93	89-112
Dibromofluoromethane		94	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10028-004**

Description: **MW-102** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1125** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1545	CMF	08/11/2022 1740	50831

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	84-74-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10028-004**

Description: **MW-102** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1125** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1545	CMF	08/11/2022 1740	50831

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		67	44-119
2-Fluorophenol		38	19-119
Nitrobenzene-d5		62	44-120
Phenol-d5		52	10-115
Terphenyl-d14		95	50-134
2,4,6-Tribromophenol		84	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Dissolved Gases

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10028-004**

Description: **MW-102** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1125** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	08/15/2022 1535	JM1		51135

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Ethane	74-84-0	RSK - 175	5.0	U	10	5.0	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	5.0	U	10	5.0	2.5	ug/L	1
Methane	74-82-8	RSK - 175	5.0	U	10	5.0	2.5	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10028-004**	
Description: **MW-102**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 1125**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	08/23/2022 0533	BNW	08/15/2022 0840	50905
1		7470A	1	08/13/2022 1708	MRW2	08/13/2022 1352	50806

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**15**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	**7440-43-9**	**6020B**	**0.21**	**J**	**0.50**	0.25	**0.13**	**ug/L**	**1**
Chromium	7440-47-3	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Lead	**7439-92-1**	**6020B**	**0.66**	**J**	**1.0**	0.50	**0.25**	**ug/L**	**1**
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
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H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10028-005**	
Description: **TB-03**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/17/2022 1356	JWO		51429

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**13**	**J**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10028-005**	
Description: **TB-03**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/17/2022 1356	JWO		51429

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		106	81-118
Bromofluorobenzene		102	85-114
Toluene-d8		112	89-112
Dibromofluoromethane		113	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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QC Summary

Inorganic non-metals - MB

Sample ID: XQ52324-001
Batch: 52324
Analytical Method: SM 5310C-2011

Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
TOC	1500	U	1	2000	1500	600	ug/L	08/27/2022 0227

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCS

Sample ID: XQ52324-002
Batch: 52324
Analytical Method: SM 5310C-2011

Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
TOC	20000	20000		1	100	90-110	08/27/2022 0238

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MS

Sample ID: XH10028-004MS
Batch: 52324
Analytical Method: SM 5310C-2011

Matrix: Aqueous

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
TOC	ND	50000	51000		1	101	70-130	08/27/2022 0703

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MSD

Sample ID: XH10028-004MD
Batch: 52324
Analytical Method: SM 5310C-2011

Matrix: Aqueous

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
TOC	ND	50000	48000		1	96	5.5	70-130	20	08/27/2022 0715

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51429-001
Batch: 51429
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	08/17/2022 1100
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	08/17/2022 1100
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	08/17/2022 1100
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	08/17/2022 1100
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	08/17/2022 1100
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	08/17/2022 1100
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	08/17/2022 1100
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	08/17/2022 1100
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	08/17/2022 1100
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	08/17/2022 1100
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	08/17/2022 1100
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51429-001
Batch: 51429
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		103	81-118
Bromofluorobenzene		102	85-114
Toluene-d8		110	89-112
Dibromofluoromethane		104	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51429-002
Batch: 51429
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	95		1	95	39-160	08/17/2022 0927
Benzene	50	55		1	110	79-120	08/17/2022 0927
Bromodichloromethane	50	55		1	110	79-125	08/17/2022 0927
Bromoform	50	46		1	91	66-130	08/17/2022 0927
Bromomethane (Methyl bromide)	50	49		1	98	53-141	08/17/2022 0927
2-Butanone (MEK)	100	110		1	106	56-143	08/17/2022 0927
Carbon disulfide	50	48		1	96	64-133	08/17/2022 0927
Carbon tetrachloride	50	55		1	110	72-136	08/17/2022 0927
Chlorobenzene	50	52		1	105	82-118	08/17/2022 0927
Chloroethane	50	48		1	95	60-138	08/17/2022 0927
Chloroform	50	52		1	103	79-124	08/17/2022 0927
Chloromethane (Methyl chloride)	50	58		1	117	50-139	08/17/2022 0927
Cyclohexane	50	57		1	113	71-130	08/17/2022 0927
1,2-Dibromo-3-chloropropane (DBCP)	50	60		1	120	62-128	08/17/2022 0927
Dibromochloromethane	50	55		1	110	74-126	08/17/2022 0927
1,2-Dibromoethane (EDB)	50	54		1	109	77-121	08/17/2022 0927
1,2-Dichlorobenzene	50	51		1	103	80-119	08/17/2022 0927
1,3-Dichlorobenzene	50	51		1	103	80-119	08/17/2022 0927
1,4-Dichlorobenzene	50	50		1	100	79-118	08/17/2022 0927
Dichlorodifluoromethane	50	57		1	114	32-152	08/17/2022 0927
1,1-Dichloroethane	50	50		1	101	77-125	08/17/2022 0927
1,2-Dichloroethane	50	51		1	101	73-128	08/17/2022 0927
1,1-Dichloroethene	50	43		1	86	71-131	08/17/2022 0927
cis-1,2-Dichloroethene	50	53		1	107	78-123	08/17/2022 0927
trans-1,2-Dichloroethene	50	48		1	97	75-124	08/17/2022 0927
1,2-Dichloropropane	50	56		1	112	78-122	08/17/2022 0927
cis-1,3-Dichloropropene	50	51		1	103	75-124	08/17/2022 0927
trans-1,3-Dichloropropene	50	50		1	100	73-127	08/17/2022 0927
Ethylbenzene	50	55		1	110	79-121	08/17/2022 0927
2-Hexanone	100	100		1	104	57-139	08/17/2022 0927
Isopropylbenzene	50	48		1	96	72-131	08/17/2022 0927
Methyl acetate	50	48		1	96	56-136	08/17/2022 0927
Methyl tertiary butyl ether (MTBE)	50	51		1	103	71-124	08/17/2022 0927
4-Methyl-2-pentanone	100	110		1	106	67-130	08/17/2022 0927
Methylcyclohexane	50	56		1	112	72-132	08/17/2022 0927
Methylene chloride	50	43		1	87	74-124	08/17/2022 0927
Styrene	50	49		1	98	78-123	08/17/2022 0927
1,1,2,2-Tetrachloroethane	50	58		1	116	71-121	08/17/2022 0927
Tetrachloroethene	50	56		1	112	74-129	08/17/2022 0927
Toluene	50	56		1	113	80-121	08/17/2022 0927
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	47		1	93	70-136	08/17/2022 0927
1,2,4-Trichlorobenzene	50	53		1	107	69-130	08/17/2022 0927
1,1,1-Trichloroethane	50	53		1	107	74-131	08/17/2022 0927
1,1,2-Trichloroethane	50	56		1	112	80-119	08/17/2022 0927

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51429-002
Batch: 51429
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	54		1	108	79-123	08/17/2022 0927
Trichlorofluoromethane	50	44		1	88	65-141	08/17/2022 0927
Vinyl chloride	50	60		1	121	58-137	08/17/2022 0927
Xylenes (total)	100	100		1	105	79-121	08/17/2022 0927

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		100	81-118
Bromofluorobenzene		102	85-114
Toluene-d8		106	89-112
Dibromofluoromethane		100	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51693-001
Batch: 51693
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	08/19/2022 1225
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	08/19/2022 1225
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	08/19/2022 1225
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	08/19/2022 1225
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	08/19/2022 1225
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	08/19/2022 1225
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	08/19/2022 1225
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	08/19/2022 1225
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	08/19/2022 1225
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	08/19/2022 1225
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	08/19/2022 1225
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51693-001
Batch: 51693
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		98	81-118
Bromofluorobenzene		95	85-114
Toluene-d8		100	89-112
Dibromofluoromethane		99	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51693-002
Batch: 51693
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	150		1	145	39-160	08/19/2022 1022
Benzene	50	48		1	96	79-120	08/19/2022 1022
Bromodichloromethane	50	50		1	100	79-125	08/19/2022 1022
Bromoform	50	54		1	108	66-130	08/19/2022 1022
Bromomethane (Methyl bromide)	50	45		1	90	53-141	08/19/2022 1022
2-Butanone (MEK)	100	120		1	119	56-143	08/19/2022 1022
Carbon disulfide	50	48		1	96	64-133	08/19/2022 1022
Carbon tetrachloride	50	46		1	92	72-136	08/19/2022 1022
Chlorobenzene	50	49		1	98	82-118	08/19/2022 1022
Chloroethane	50	45		1	89	60-138	08/19/2022 1022
Chloroform	50	46		1	91	79-124	08/19/2022 1022
Chloromethane (Methyl chloride)	50	45		1	90	50-139	08/19/2022 1022
Cyclohexane	50	47		1	95	71-130	08/19/2022 1022
1,2-Dibromo-3-chloropropane (DBCP)	50	56		1	111	62-128	08/19/2022 1022
Dibromochloromethane	50	54		1	107	74-126	08/19/2022 1022
1,2-Dibromoethane (EDB)	50	52		1	103	77-121	08/19/2022 1022
1,2-Dichlorobenzene	50	50		1	100	80-119	08/19/2022 1022
1,3-Dichlorobenzene	50	51		1	102	80-119	08/19/2022 1022
1,4-Dichlorobenzene	50	48		1	95	79-118	08/19/2022 1022
Dichlorodifluoromethane	50	48		1	97	32-152	08/19/2022 1022
1,1-Dichloroethane	50	47		1	94	77-125	08/19/2022 1022
1,2-Dichloroethane	50	49		1	98	73-128	08/19/2022 1022
1,1-Dichloroethene	50	48		1	95	71-131	08/19/2022 1022
cis-1,2-Dichloroethene	50	48		1	96	78-123	08/19/2022 1022
trans-1,2-Dichloroethene	50	47		1	93	75-124	08/19/2022 1022
1,2-Dichloropropane	50	50		1	101	78-122	08/19/2022 1022
cis-1,3-Dichloropropene	50	56		1	112	75-124	08/19/2022 1022
trans-1,3-Dichloropropene	50	57		1	114	73-127	08/19/2022 1022
Ethylbenzene	50	52		1	104	79-121	08/19/2022 1022
2-Hexanone	100	110		1	112	57-139	08/19/2022 1022
Isopropylbenzene	50	54		1	109	72-131	08/19/2022 1022
Methyl acetate	50	53		1	107	56-136	08/19/2022 1022
Methyl tertiary butyl ether (MTBE)	50	56		1	113	71-124	08/19/2022 1022
4-Methyl-2-pentanone	100	110		1	109	67-130	08/19/2022 1022
Methylcyclohexane	50	49		1	99	72-132	08/19/2022 1022
Methylene chloride	50	47		1	93	74-124	08/19/2022 1022
Styrene	50	56		1	111	78-123	08/19/2022 1022
1,1,2,2-Tetrachloroethane	50	51		1	102	71-121	08/19/2022 1022
Tetrachloroethene	50	50		1	100	74-129	08/19/2022 1022
Toluene	50	52		1	105	80-121	08/19/2022 1022
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	46		1	93	70-136	08/19/2022 1022
1,2,4-Trichlorobenzene	50	49		1	98	69-130	08/19/2022 1022
1,1,1-Trichloroethane	50	47		1	95	74-131	08/19/2022 1022
1,1,2-Trichloroethane	50	50		1	100	80-119	08/19/2022 1022

LOQ = Limit of Quantitation
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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51693-002
Batch: 51693
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	47		1	95	79-123	08/19/2022 1022
Trichlorofluoromethane	50	45		1	91	65-141	08/19/2022 1022
Vinyl chloride	50	46		1	91	58-137	08/19/2022 1022
Xylenes (total)	100	110		1	109	79-121	08/19/2022 1022

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		93	81-118
Bromofluorobenzene		97	85-114
Toluene-d8		101	89-112
Dibromofluoromethane		93	80-119

LOQ = Limit of Quantitation
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+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ50831-001
Batch: 50831
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/11/2022 1740

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acenaphthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Acenaphthylene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Acetophenone	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Atrazine	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Benzaldehyde	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Benzo(a)anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Benzo(a)pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Benzo(b)fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Benzo(g,h,i)perylene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Benzo(k)fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
1,1'-Biphenyl	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
4-Bromophenyl phenyl ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Butyl benzyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Caprolactam	2.0	U	1	3.0	2.0	1.0	ug/L	08/17/2022 0959
Carbazole	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
bis (2-Chloro-1-methylethyl) ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
4-Chloro-3-methyl phenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
4-Chloroaniline	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
bis(2-Chloroethoxy)methane	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
bis(2-Chloroethyl)ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
2-Chloronaphthalene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
2-Chlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
4-Chlorophenyl phenyl ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Chrysene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Dibenzo(a,h)anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Dibenzofuran	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
3,3'-Dichlorobenzidine	3.5	U	1	4.0	3.5	1.8	ug/L	08/17/2022 0959
2,4-Dichlorophenol	0.50	U	1	1.6	0.50	0.25	ug/L	08/17/2022 0959
Diethylphthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Dimethyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
2,4-Dimethylphenol	1.5	U	1	2.0	1.5	0.62	ug/L	08/17/2022 0959
Di-n-butyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
4,6-Dinitro-2-methylphenol	2.0	U	1	4.0	2.0	1.0	ug/L	08/17/2022 0959
2,4-Dinitrophenol	2.0	U	1	4.0	2.0	1.0	ug/L	08/17/2022 0959
2,4-Dinitrotoluene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
2,6-Dinitrotoluene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Di-n-octylphthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
bis(2-Ethylhexyl)phthalate	3.0	U	1	4.0	3.0	1.5	ug/L	08/17/2022 0959
Fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Fluorene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Hexachlorobenzene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Hexachlorobutadiene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Hexachlorocyclopentadiene	4.0	U	1	4.0	4.0	2.0	ug/L	08/17/2022 0959

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P = The RPD between two GC columns exceeds 40%
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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ50831-001
Batch: 50831
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/11/2022 1740

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Hexachloroethane	0.40	U	1	0.80	0.40	0.17	ug/L	08/17/2022 0959
Indeno(1,2,3-c,d)pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Isophorone	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
2-Methylnaphthalene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
2-Methylphenol	1.3	U	1	1.6	1.3	0.67	ug/L	08/17/2022 0959
3+4-Methylphenol	3.0	U	1	4.0	3.0	1.5	ug/L	08/17/2022 0959
Naphthalene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
2-Nitroaniline	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
3-Nitroaniline	2.0	U	1	3.0	2.0	1.0	ug/L	08/17/2022 0959
4-Nitroaniline	3.0	U	1	4.0	3.0	1.5	ug/L	08/17/2022 0959
Nitrobenzene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
2-Nitrophenol	2.0	U	1	3.2	2.0	1.0	ug/L	08/17/2022 0959
4-Nitrophenol	4.0	U	1	5.0	4.0	2.0	ug/L	08/17/2022 0959
N-Nitrosodi-n-propylamine	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
N-Nitrosodiphenylamine (Diphenylamine)	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Pentachlorophenol	4.0	U	1	5.0	4.0	2.0	ug/L	08/17/2022 0959
Phenanthrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Phenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
2,4,5-Trichlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
2,4,6-Trichlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		76	44-119
2-Fluorophenol		47	19-119
Nitrobenzene-d5		73	44-120
Phenol-d5		63	10-115
Terphenyl-d14		104	50-134
2,4,6-Tribromophenol		89	43-140

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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ50831-002
Batch: 50831
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/11/2022 1740

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acenaphthene	8.0	6.9		1	87	47-122	08/17/2022 1024
Acenaphthylene	8.0	7.6		1	95	41-130	08/17/2022 1024
Acetophenone	8.0	6.6		1	82	46-118	08/17/2022 1024
Anthracene	8.0	7.8		1	98	57-123	08/17/2022 1024
Atrazine	8.0	7.9		1	99	44-142	08/17/2022 1024
Benzaldehyde	8.0	5.2		1	65	20-115	08/17/2022 1024
Benzo(a)anthracene	8.0	8.2		1	102	58-125	08/17/2022 1024
Benzo(a)pyrene	8.0	8.2		1	102	54-128	08/17/2022 1024
Benzo(b)fluoranthene	8.0	8.4		1	105	53-131	08/17/2022 1024
Benzo(g,h,i)perylene	8.0	8.9		1	111	50-134	08/17/2022 1024
Benzo(k)fluoranthene	8.0	8.1		1	101	57-129	08/17/2022 1024
1,1'-Biphenyl	8.0	6.7		1	83	49-115	08/17/2022 1024
4-Bromophenyl phenyl ether	8.0	7.6		1	95	55-124	08/17/2022 1024
Butyl benzyl phthalate	8.0	9.4		1	117	53-134	08/17/2022 1024
Caprolactam	8.0	8.8		1	110	44-152	08/17/2022 1024
Carbazole	8.0	7.9		1	98	60-122	08/17/2022 1024
bis (2-Chloro-1-methylethyl) ether	8.0	7.3		1	91	37-130	08/17/2022 1024
4-Chloro-3-methyl phenol	8.0	7.5		1	93	52-119	08/17/2022 1024
4-Chloroaniline	8.0	6.2		1	78	33-117	08/17/2022 1024
bis(2-Chloroethoxy)methane	8.0	7.1		1	89	48-120	08/17/2022 1024
bis(2-Chloroethyl)ether	8.0	6.9		1	86	43-118	08/17/2022 1024
2-Chloronaphthalene	8.0	6.8		1	85	40-116	08/17/2022 1024
2-Chlorophenol	8.0	6.6		1	83	38-117	08/17/2022 1024
4-Chlorophenyl phenyl ether	8.0	7.3		1	91	53-121	08/17/2022 1024
Chrysene	8.0	8.1		1	101	59-123	08/17/2022 1024
Dibenzo(a,h)anthracene	8.0	8.6		1	107	51-134	08/17/2022 1024
Dibenzofuran	8.0	6.6		1	83	53-118	08/17/2022 1024
3,3'-Dichlorobenzidine	8.0	4.4		1	55	27-129	08/17/2022 1024
2,4-Dichlorophenol	8.0	6.8		1	85	47-121	08/17/2022 1024
Diethylphthalate	8.0	8.1		1	102	56-125	08/17/2022 1024
Dimethyl phthalate	8.0	7.8		1	98	45-127	08/17/2022 1024
2,4-Dimethylphenol	8.0	7.8		1	98	31-124	08/17/2022 1024
Di-n-butyl phthalate	8.0	9.0		1	112	59-127	08/17/2022 1024
4,6-Dinitro-2-methylphenol	8.0	6.8		1	85	44-137	08/17/2022 1024
2,4-Dinitrophenol	16	9.8		1	61	23-143	08/17/2022 1024
2,4-Dinitrotoluene	8.0	7.9		1	98	57-128	08/17/2022 1024
2,6-Dinitrotoluene	8.0	7.3		1	91	57-124	08/17/2022 1024
Di-n-octylphthalate	8.0	8.1		1	102	51-140	08/17/2022 1024
bis(2-Ethylhexyl)phthalate	8.0	10		1	128	55-135	08/17/2022 1024
Fluoranthene	8.0	8.3		1	104	57-128	08/17/2022 1024
Fluorene	8.0	7.2		1	90	52-124	08/17/2022 1024
Hexachlorobenzene	8.0	7.3		1	92	53-125	08/17/2022 1024
Hexachlorobutadiene	8.0	5.8		1	73	22-124	08/17/2022 1024
Hexachlorocyclopentadiene	40	20		1	50	16-96	08/17/2022 1024

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ50831-002
Batch: 50831
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/11/2022 1740

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Hexachloroethane	8.0	6.0		1	75	21-115	08/17/2022 1024
Indeno(1,2,3-c,d)pyrene	8.0	8.4		1	105	52-134	08/17/2022 1024
Isophorone	8.0	6.7		1	84	42-124	08/17/2022 1024
2-Methylnaphthalene	8.0	6.7		1	84	40-121	08/17/2022 1024
2-Methylphenol	8.0	7.3		1	91	30-117	08/17/2022 1024
3+4-Methylphenol	8.0	7.0		1	88	29-110	08/17/2022 1024
Naphthalene	8.0	6.8		1	85	40-121	08/17/2022 1024
2-Nitroaniline	8.0	7.9		1	99	55-127	08/17/2022 1024
3-Nitroaniline	8.0	5.6		1	69	41-128	08/17/2022 1024
4-Nitroaniline	8.0	6.8		1	85	30-135	08/17/2022 1024
Nitrobenzene	8.0	5.9		1	73	45-121	08/17/2022 1024
2-Nitrophenol	8.0	6.9		1	87	47-123	08/17/2022 1024
4-Nitrophenol	16	16		1	98	53-130	08/17/2022 1024
N-Nitrosodi-n-propylamine	8.0	7.1		1	89	49-119	08/17/2022 1024
N-Nitrosodiphenylamine (Diphenylamine)	8.0	7.6		1	95	51-123	08/17/2022 1024
Pentachlorophenol	16	14		1	85	35-138	08/17/2022 1024
Phenanthrene	8.0	7.5		1	94	59-120	08/17/2022 1024
Phenol	8.0	7.0		1	87	49-117	08/17/2022 1024
Pyrene	8.0	8.5		1	106	57-126	08/17/2022 1024
2,4,5-Trichlorophenol	8.0	7.0		1	88	53-123	08/17/2022 1024
2,4,6-Trichlorophenol	8.0	7.3		1	91	50-125	08/17/2022 1024

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		83	44-119
2-Fluorophenol		74	19-119
Nitrobenzene-d5		85	44-120
Phenol-d5		80	10-115
Terphenyl-d14		105	50-134
2,4,6-Tribromophenol		97	43-140

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Dissolved Gases - MB

Sample ID: XQ51135-001
Batch: 51135
Analytical Method: RSK - 175
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Ethane	5.0	U	1	10	5.0	2.5	ug/L	08/15/2022 1519
Ethene	5.0	U	1	10	5.0	2.5	ug/L	08/15/2022 1519
Methane	5.0	U	1	10	5.0	2.5	ug/L	08/15/2022 1519

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Dissolved Gases - LCS

Sample ID: XQ51135-002
Batch: 51135
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Ethane	550	570		1	103	74-131	08/15/2022 1438
Ethene	520	540		1	104	72-133	08/15/2022 1438
Methane	300	330		1	111	73-125	08/15/2022 1438

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Dissolved Gases - LCSD

Sample ID: XQ51135-003
Batch: 51135
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Ethane	550	570		1	102	0.91	74-131	30	08/15/2022 1452
Ethene	520	530		1	103	0.97	72-133	30	08/15/2022 1452
Methane	300	320		1	109	2.0	73-125	30	08/15/2022 1452

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MB

Sample ID: XQ50905-001
Batch: 50905
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 08/15/2022 0840

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Arsenic	2.5	U	1	5.0	2.5	1.3	ug/L	08/23/2022 0215
Barium	2.5	U	1	5.0	2.5	1.3	ug/L	08/23/2022 0215
Cadmium	0.25	U	1	0.50	0.25	0.13	ug/L	08/23/2022 0215
Chromium	2.5	U	1	5.0	2.5	1.3	ug/L	08/23/2022 0215
Lead	0.50	U	1	1.0	0.50	0.25	ug/L	08/23/2022 0215
Selenium	2.5	U	1	5.0	2.5	1.3	ug/L	08/23/2022 0215
Silver	0.50	U	1	1.0	0.50	0.25	ug/L	08/23/2022 0215

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - LCS

Sample ID: XQ50905-002
Batch: 50905
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 08/15/2022 0840

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Arsenic	100	100		1	101	84-116	08/23/2022 0223
Barium	100	100		1	103	86-114	08/23/2022 0223
Cadmium	100	96		1	96	87-115	08/23/2022 0223
Chromium	100	110		1	108	85-116	08/23/2022 0223
Lead	100	110		1	106	88-115	08/23/2022 0223
Selenium	100	86		1	86	80-120	08/31/2022 1947
Silver	100	110		1	110	85-116	08/31/2022 1947

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MB

Sample ID: XQ50806-001
Batch: 50806
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 08/13/2022 1352

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Mercury	0.18	U	1	0.20	0.18	0.091	ug/L	08/13/2022 1619

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - LCS

Sample ID: XQ50806-002
Batch: 50806
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 08/13/2022 1352

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Mercury	2.0	2.1		1	107	82-119	08/13/2022 1622

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Chain of Custody
and
Miscellaneous Documents

Pace Analytical

PACE ANALYTICAL SERVICES, LLC
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.pacelabs.com

Number 137980

Client: Terrasan Consultants	Report to Contact: Esther.Dimsdale@Terrasan.com	Telephone No. / E-mail: Don.Malone@Terrasan.com	Quote No.
Address: 2401 Brentwood Rd Suite 107	Sampler's Signature: X	Analysis (Attach list if more space is needed)	Page 1 of 1
City: Raleigh; State: NC; Zip Code: 27604	Printed Name: Esther Dimsdale		XH10028
Project Name: TAMP			CSD
Project No.: 7021P145	P.O. No.		Remarks / Cooler I.D.

Sample ID / Description (Combine for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	G=Grab C=Composite	Matrix: Aqueous	Solid	Non-Aqueous	No of Containers by Preservative Type: Unpres	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Field Filtered	VOCs 8260	SVOCs 8270	RCRA 8 Metals	TOC 9060	Dissolved Cations Rule-1 Fe				
MW-5	8/9	845	G	X			2		1	3				X	X	X						
MW-111	8/9	1250	G	X			2	F	2	3				X	X	X						
MW-2	8/8	1605	G	X			2		1	3				X	X	X						
MW-102	8/9	1125	G	X			2	1	1	5				X	X	X	X	X				
TB-03	8/9	—	G	X						2				X								

Turn Around Time Required (Prior lab approval required for expedited TAT.)	Sample Disposal	Possible Hazard Identification	QC Requirements (Specify)
☒ Standard ☐ Rush (Specify)	☐ Return to Client ☒ Disposal by Lab	☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☒ Unknown	

	Date	Time		Date	Time
1. Relinquished by	8/9	1445	1. Received by	8.9.22	1450
2. Relinquished by	8/9	1534	2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by Fedex	8.10.22	1000	4. Laboratory received by	8.10.22	1000

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Circle): (Yes) No Ice Pack Receipt Temp. 2.6 °C
Temp Blank ☒ Y ☐ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME009N2-07

DC#_Title: ENV-FRM-WCOL-0286 v02_Samples Receipt Checklist (SRC)
Effective Date: 8/2/2022

Sample Receipt Checklist (SRC)

Client: Terracon Cooler Inspected by/date: KDRW / 08/10/2022 Lot #: XH110028

Means of receipt: [ ] Pace [ ] Client [ ] UPS [✓] FedEx [ ] Other: ____

[ ] Yes	[✓] No		1. Were custody seals present on the cooler?
[ ] Yes	[ ] No	[✓] NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: 22-1543 Chlorine Strip ID: NA Tested by: KDRW
Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA
3.1 / 3.1 °C NA / NA °C NA / NA °C NA / NA °C
Method: [✓] Temperature Blank [ ] Against Bottles IR Gun ID: 8 IR Gun Correction Factor: 0 °C
Method of coolant: [✓] Wet Ice [ ] Ice Packs [ ] Dry Ice [ ] None

[✓] Yes	[ ] No	[ ] NA	3. Were all coolers received at or below 6.0°C? If no, was Project Manager notified? PM was Notified by: phone / email / face-to-face (circle one).
[✓] Yes	[ ] No	[ ] NA	4. Is the commercial courier's packing slip attached to this form?
[✓] Yes	[ ] No		5. Were proper custody procedures (relinquished/received) followed?
[✓] Yes	[ ] No		6. Were sample IDs listed on the COC and all sample containers?
[✓] Yes	[ ] No		7. Was collection date & time listed on the COC and all sample containers?
[✓] Yes	[ ] No		8. Did all container label information (ID, date, time) agree with the COC?
[✓] Yes	[ ] No		9. Were tests to be performed listed on the COC?
[✓] Yes	[ ] No		10. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? ____
[✓] Yes	[ ] No		11. Was adequate sample volume available?
[✓] Yes	[ ] No		12. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
[✓] Yes	[ ] No		13. Were all samples containers accounted for? (No missing/excess)
[✓] Yes	[ ] No	[ ] NA	14. Were VOA, 8015C and RSK-175 samples free of bubbles >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
[✓] Yes	[ ] No	[ ] NA	15. Were all DRO/metals/nutrient samples received at a pH of < 2?
[ ] Yes	[ ] No	[✓] NA	16. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
[ ] Yes	[ ] No	[✓] NA	17. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
[✓] Yes	[ ] No	[ ] NA	18. Was the quote number listed on the container label? If yes, Quote # 25322

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA ____ were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA. ☐
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA ____ were received with bubbles >6 mm in diameter.

Samples(s) NA ____ were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Unique ID: NA.

Comments:

Qualtrax ID: 56360 Pace® Analytical Services, LLC Page 1 of 1

Report of Analysis

Terracon Consultants, Inc.
2401 Brentwood Road
Suite 107 I
Raleigh, NC 27604
Attention: Ethan Dinwiddie

Project Name: TAMP

Project Number: 7021P145

Lot Number:**XH10043**

Date Completed:08/30/2022

09/07/2022 8:20 PM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.
This report shall not be reproduced, except in its entirety, without the written approval of Pace Analytical Services, LLC.

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
Terracon Consultants, Inc.
Lot Number: XH10043

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Additionally, the DoD QSM version 5.3 has been followed for these samples. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs, the DoD QSM, or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

VOA 8260D

The continuing calibration verification (CCV) associated with samples XH10043-001 (MW-110) and XH10043-002 (MW-118) in batch for Acetone (35%) recovered above the upper control limit. The samples associated with this CCV were non-detect for the affected analyte; therefore, the data has been reported.

The matrix spike duplicate (MSD; parent sample XH10043-002 (MW-118)) associated with batch XQ51416 failed surrogate Toluene-d8 low at 85%. Since all other QC passes including the MS and associated LCS, data has been reported.

The continuing calibration verification (CCV) associated with samples XH10043-003 (MW-121) and XH10043-005 (TB-02) in batch 51429, for Vinyl Chloride (21%) recovered above the upper control limit. The samples associated with this CCV were non-detect for the affected analytes; therefore, the data has been reported.

The continuing calibration verification (CCV) associated with sample XH10043-004 (MW-115) in batch 51693 for Acetone recovered above the upper control limit. The sample associated with this CCV were non-detect for the affected analytes; therefore, the data has been reported.

The closing continuing calibration verification (CCV) associated with sample XH10043-001 (MW-110) in batch 51688 was not analyzed at end of sequence. The MSD run at the end of the sequence was copied and processed as a 8260 closing CCV. The CCV passed acceptance criteria and the data has been reported.

Sample XH10043-001 (MW-110) had an air bubble > 6mm in the sample vial.

The MSD for batch 51130 and parent sample XH10043-001 (MW-110), recovered marginally outside the lower control limit for Trichloroethane. The associated LCS and MS passed acceptance criteria.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Sample Summary

Terracon Consultants, Inc.

Lot Number: XH10043

Project Name: TAMP

Project Number: 7021P145

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	MW-110	Aqueous	08/09/2022 1050	08/10/2022
002	MW-118	Aqueous	08/08/2022 1652	08/10/2022
003	MW-121	Aqueous	08/09/2022 1005	08/10/2022
004	MW-115	Aqueous	08/08/2022 1725	08/10/2022
005	TB-02	Aqueous	08/09/2022	08/10/2022

(5 samples)

Detection Summary

Terracon Consultants, Inc.

Lot Number: XH10043

Project Name: TAMP

Project Number: 7021P145

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	MW-110	Aqueous	cis-1,2-Dichloroethene	8260D	70		ug/L	8
001	MW-110	Aqueous	Tetrachloroethene	8260D	67		ug/L	8
001	MW-110	Aqueous	Trichloroethene	8260D	750	S	ug/L	9
001	MW-110	Aqueous	Barium	6020B	12		ug/L	13
001	MW-110	Aqueous	Cadmium	6020B	0.24	J	ug/L	13
001	MW-110	Aqueous	Chromium	6020B	2.2	J	ug/L	13
002	MW-118	Aqueous	Benzene	8260D	1.4		ug/L	14
002	MW-118	Aqueous	Chloroethane	8260D	5.2		ug/L	14
002	MW-118	Aqueous	Cyclohexane	8260D	2.4		ug/L	14
002	MW-118	Aqueous	1,1-Dichloroethane	8260D	2.7		ug/L	14
002	MW-118	Aqueous	1,2-Dichloroethane	8260D	1.2		ug/L	14
002	MW-118	Aqueous	1,1-Dichloroethene	8260D	1.5		ug/L	14
002	MW-118	Aqueous	cis-1,2-Dichloroethene	8260D	490		ug/L	14
002	MW-118	Aqueous	trans-1,2-Dichloroethene	8260D	17		ug/L	14
002	MW-118	Aqueous	Methyl tertiary butyl ether	8260D	32		ug/L	14
002	MW-118	Aqueous	Methylcyclohexane	8260D	1.2	J	ug/L	14
002	MW-118	Aqueous	Trichloroethene	8260D	3.9		ug/L	15
002	MW-118	Aqueous	Vinyl chloride	8260D	100		ug/L	15
002	MW-118	Aqueous	Barium	6020B	120		ug/L	18
002	MW-118	Aqueous	Cadmium	6020B	4.7		ug/L	18
002	MW-118	Aqueous	Lead	6020B	2.4		ug/L	18
003	MW-121	Aqueous	Chloroform	8260D	0.64	J	ug/L	20
003	MW-121	Aqueous	Chloromethane (Methyl	8260D	0.58	J	ug/L	20
003	MW-121	Aqueous	1,1-Dichloroethene	8260D	0.46	J	ug/L	20
003	MW-121	Aqueous	cis-1,2-Dichloroethene	8260D	5.1		ug/L	20
003	MW-121	Aqueous	Tetrachloroethene	8260D	17		ug/L	20
003	MW-121	Aqueous	Trichloroethene	8260D	38		ug/L	21
003	MW-121	Aqueous	Methane	RSK - 175	4.1	J	ug/L	24
003	MW-121	Aqueous	Barium	6020B	17		ug/L	25
003	MW-121	Aqueous	Chromium	6020B	1.3	J	ug/L	25
004	MW-115	Aqueous	TOC	SM 5310C-	2800		ug/L	26
004	MW-115	Aqueous	cis-1,2-Dichloroethene	8260D	910		ug/L	27
004	MW-115	Aqueous	trans-1,2-Dichloroethene	8260D	24		ug/L	27
004	MW-115	Aqueous	Methyl tertiary butyl ether	8260D	41		ug/L	27
004	MW-115	Aqueous	Trichloroethene	8260D	78		ug/L	28
004	MW-115	Aqueous	Vinyl chloride	8260D	150		ug/L	28
004	MW-115	Aqueous	Di-n-butyl phthalate	8270E	0.56	J	ug/L	29
004	MW-115	Aqueous	Ethane	RSK - 175	14		ug/L	31
004	MW-115	Aqueous	Ethene	RSK - 175	42		ug/L	31
004	MW-115	Aqueous	Methane	RSK - 175	2400		ug/L	31
004	MW-115	Aqueous	Arsenic	6020B	1.6	J	ug/L	32
004	MW-115	Aqueous	Barium	6020B	92		ug/L	32
005	TB-02	Aqueous	Acetone	8260D	7.6	J	ug/L	33

Detection Summary (Continued)

Lot Number: XH10043

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page

(43 detections)

Inorganic non-metals

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10043-001**	
Description: **MW-110**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 1050**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2		(TOC) SM 5310C-2011	1	08/27/2022 0726	CMM		52324

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
TOC		SM 5310C-2011	1500	U	2000	1500	600	ug/L	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10043-001**

Description: **MW-110** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1050** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	5	08/15/2022 1758	JWO		51130
2	5030B	8260D	5	08/19/2022 1723	JWO		51688

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	50	U	100	50	25	ug/L	1
Benzene	71-43-2	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Bromodichloromethane	75-27-4	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Bromoform	75-25-2	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	4.0	U	10	4.0	2.0	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	20	U	50	20	10	ug/L	1
Carbon disulfide	75-15-0	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Carbon tetrachloride	56-23-5	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Chlorobenzene	108-90-7	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Chloroethane	75-00-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Chloroform	67-66-3	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	5.0	U	10	5.0	2.5	ug/L	1
Cyclohexane	110-82-7	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Dibromochloromethane	124-48-1	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	6.0	U	10	6.0	3.0	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**70**		**5.0**	4.0	**2.0**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Ethylbenzene	100-41-4	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
2-Hexanone	591-78-6	8260D	20	U	50	20	10	ug/L	1
Isopropylbenzene	98-82-8	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Methyl acetate	79-20-9	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	20	U	50	20	10	ug/L	1
Methylcyclohexane	108-87-2	8260D	4.0	U	25	4.0	2.0	ug/L	1
Methylene chloride	75-09-2	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Styrene	100-42-5	8260D	4.1	U	5.0	4.1	2.1	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**67**		**5.0**	4.0	**2.0**	**ug/L**	**1**
Toluene	108-88-3	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	4.2	U	5.0	4.2	2.1	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	4.0	U	5.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10043-001**	
Description: **MW-110**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 1050**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	5	08/15/2022 1758	JWO		51130
2	5030B	8260D	5	08/19/2022 1723	JWO		51688

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**750**	**S**	**5.0**	4.0	**2.0**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Vinyl chloride	75-01-4	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Xylenes (total)	1330-20-7	8260D	4.0	U	5.0	4.0	2.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		102	81-118		98	81-118
Bromofluorobenzene		98	85-114		104	85-114
Toluene-d8		98	89-112		100	89-112
Dibromofluoromethane		100	80-119		94	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10043-001**

Description: **MW-110** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1050** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1609	CMF	08/11/2022 1740	50831

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	84-74-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10043-001**
Description: **MW-110** Matrix: **Aqueous**
Date Sampled: **08/09/2022 1050** Project Name: **TAMP**
Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1609	CMF	08/11/2022 1740	50831

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		72	44-119
2-Fluorophenol		40	19-119
Nitrobenzene-d5		68	44-120
Phenol-d5		57	10-115
Terphenyl-d14		97	50-134
2,4,6-Tribromophenol		88	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Dissolved Gases

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10043-001**	
Description: **MW-110**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 1050**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	08/15/2022 1551	JM1		51135

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Ethane	74-84-0	RSK - 175	5.0	U	10	5.0	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	5.0	U	10	5.0	2.5	ug/L	1
Methane	74-82-8	RSK - 175	5.0	U	10	5.0	2.5	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10043-001**	
Description: **MW-110**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 1050**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	08/23/2022 0542	BNW	08/15/2022 0840	50905
1		7470A	1	08/13/2022 1710	MRW2	08/13/2022 1352	50806

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**12**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	**7440-43-9**	**6020B**	**0.24**	**J**	**0.50**	0.25	**0.13**	**ug/L**	**1**
Chromium	**7440-47-3**	**6020B**	**2.2**	**J**	**5.0**	2.5	**1.3**	**ug/L**	**1**
Lead	7439-92-1	6020B	0.50	U	1.0	0.50	0.25	ug/L	1
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10043-002**	
Description: **MW-118**		Matrix: **Aqueous**	
Date Sampled: **08/08/2022 1652**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2022 1821	JWO		51130
2	5030B	8260D	10	08/17/2022 1800	JWO		51416

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	**71-43-2**	**8260D**	**1.4**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	**75-00-3**	**8260D**	**5.2**		**2.0**	0.80	**0.40**	**ug/L**	**1**
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	**110-82-7**	**8260D**	**2.4**		**1.0**	0.80	**0.40**	**ug/L**	**1**
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	**75-34-3**	**8260D**	**2.7**		**1.0**	0.80	**0.40**	**ug/L**	**1**
1,2-Dichloroethane	**107-06-2**	**8260D**	**1.2**		**1.0**	0.80	**0.40**	**ug/L**	**1**
1,1-Dichloroethene	**75-35-4**	**8260D**	**1.5**		**1.0**	0.80	**0.40**	**ug/L**	**1**
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**490**		**10**	8.0	**4.0**	**ug/L**	**2**
trans-1,2-Dichloroethene	**156-60-5**	**8260D**	**17**		**1.0**	0.80	**0.40**	**ug/L**	**1**
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260D**	**32**		**1.0**	0.80	**0.40**	**ug/L**	**1**
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	**108-87-2**	**8260D**	**1.2**	**J**	**5.0**	0.80	**0.40**	**ug/L**	**1**
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	8.4	U	10	8.4	4.2	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10043-002**	
Description: **MW-118**		Matrix: **Aqueous**	
Date Sampled: **08/08/2022 1652**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/15/2022 1821	JWO		51130
2	5030B	8260D	10	08/17/2022 1800	JWO		51416

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**3.9**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	**75-01-4**	**8260D**	**100**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		102	81-118		97	81-118
Bromofluorobenzene		102	85-114		95	85-114
Toluene-d8		102	89-112		97	89-112
Dibromofluoromethane		100	80-119		91	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10043-002**

Description: **MW-118** Matrix: **Aqueous**

Date Sampled: **08/08/2022 1652** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1634	CMF	08/11/2022 1740	50831

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	84-74-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation | B = Detected in the method blank | E = Quantitation of compound exceeded the calibration range | DL = Detection Limit | Q = Surrogate failure

U = Not detected at or above the LOD | N = Recovery is out of criteria | P = The RPD between two GC columns exceeds 40% | J = Estimated result < LOQ and ≥ DL | L = LCS/LCSD failure

H = Out of holding time | W = Reported on wet weight basis | LOD = Limit of Detection | S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10043-002**

Description: **MW-118** Matrix: **Aqueous**

Date Sampled: **08/08/2022 1652** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1634	CMF	08/11/2022 1740	50831

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		82	44-119
2-Fluorophenol		44	19-119
Nitrobenzene-d5		75	44-120
Phenol-d5		66	10-115
Terphenyl-d14		106	50-134
2,4,6-Tribromophenol		98	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10043-002**	
Description: **MW-118**		Matrix: **Aqueous**	
Date Sampled: **08/08/2022 1652**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	08/23/2022 0550	BNW	08/15/2022 0840	50905
1		7470A	1	08/13/2022 1713	MRW2	08/13/2022 1352	50806

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**120**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	**7440-43-9**	**6020B**	**4.7**		**0.50**	0.25	**0.13**	**ug/L**	**1**
Chromium	7440-47-3	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Lead	**7439-92-1**	**6020B**	**2.4**		**1.0**	0.50	**0.25**	**ug/L**	**1**
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Inorganic non-metals

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10043-003**	
Description: **MW-121**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 1005**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2		(TOC) SM 5310C-2011	1	08/27/2022 0737	CMM		52324

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
TOC		SM 5310C-2011	1500	U	2000	1500	600	ug/L	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10043-003**

Description: **MW-121** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1005** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/17/2022 1612	JWO		51429

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	**67-66-3**	**8260D**	**0.64**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
Chloromethane (Methyl chloride)	**74-87-3**	**8260D**	**0.58**	**J**	**2.0**	1.0	**0.50**	**ug/L**	**1**
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	**75-35-4**	**8260D**	**0.46**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**5.1**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**17**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10043-003**	
Description: **MW-121**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 1005**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/17/2022 1612	JWO		51429

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**38**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		101	81-118
Bromofluorobenzene		97	85-114
Toluene-d8		109	89-112
Dibromofluoromethane		106	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10043-003**

Description: **MW-121** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1005** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1659	CMF	08/11/2022 1740	50831

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	84-74-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
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LOD = Limit of Detection
S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10043-003**
Description: **MW-121** Matrix: **Aqueous**
Date Sampled: **08/09/2022 1005** Project Name: **TAMP**
Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1659	CMF	08/11/2022 1740	50831

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		83	44-119
2-Fluorophenol		45	19-119
Nitrobenzene-d5		78	44-120
Phenol-d5		62	10-115
Terphenyl-d14		109	50-134
2,4,6-Tribromophenol		97	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Dissolved Gases

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH10043-003**
Description: **MW-121**
Matrix: **Aqueous**
Date Sampled: **08/09/2022 1005**
Project Name: **TAMP**
Date Received: **08/10/2022**
Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	08/15/2022 1607	JM1		51135

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Ethane	74-84-0	RSK - 175	5.0	U	10	5.0	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	5.0	U	10	5.0	2.5	ug/L	1
Methane	**74-82-8**	**RSK - 175**	**4.1**	**J**	**10**	5.0	**2.5**	**ug/L**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10043-003**	
Description: **MW-121**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 1005**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	08/23/2022 0558	BNW	08/15/2022 0840	50905
1		7470A	1	08/13/2022 1716	MRW2	08/13/2022 1352	50806

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**17**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	7440-43-9	6020B	0.25	U	0.50	0.25	0.13	ug/L	1
Chromium	**7440-47-3**	**6020B**	**1.3**	**J**	**5.0**	2.5	**1.3**	**ug/L**	**1**
Lead	7439-92-1	6020B	0.50	U	1.0	0.50	0.25	ug/L	1
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Inorganic non-metals

Client: **Terracon Consultants, Inc.**			Laboratory ID: **XH10043-004**
Description: **MW-115**			Matrix: **Aqueous**
Date Sampled: **08/08/2022 1725**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2		(TOC) SM 5310C-2011	1	08/27/2022 0749	CMM		52324

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
TOC		**SM 5310C-2011**	**2800**		**2000**	1500	**600**	**ug/L**	**2**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10043-004**

Description: **MW-115** Matrix: **Aqueous**

Date Sampled: **08/08/2022 1725** Project Name: **TAMP**

Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	20	08/19/2022 1826	BWS		51693

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	200	U	400	200	100	ug/L	2
Benzene	71-43-2	8260D	16	U	20	16	8.0	ug/L	2
Bromodichloromethane	75-27-4	8260D	16	U	20	16	8.0	ug/L	2
Bromoform	75-25-2	8260D	16	U	20	16	8.0	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	16	U	40	16	8.0	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	80	U	200	80	40	ug/L	2
Carbon disulfide	75-15-0	8260D	16	U	20	16	8.0	ug/L	2
Carbon tetrachloride	56-23-5	8260D	16	U	20	16	8.0	ug/L	2
Chlorobenzene	108-90-7	8260D	16	U	20	16	8.0	ug/L	2
Chloroethane	75-00-3	8260D	16	U	40	16	8.0	ug/L	2
Chloroform	67-66-3	8260D	16	U	20	16	8.0	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	20	U	40	20	10	ug/L	2
Cyclohexane	110-82-7	8260D	16	U	20	16	8.0	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	16	U	20	16	8.0	ug/L	2
Dibromochloromethane	124-48-1	8260D	16	U	20	16	8.0	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	16	U	20	16	8.0	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	16	U	20	16	8.0	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	16	U	20	16	8.0	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	16	U	20	16	8.0	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	24	U	40	24	12	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	16	U	20	16	8.0	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	16	U	20	16	8.0	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	16	U	20	16	8.0	ug/L	2
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**910**		**20**	16	**8.0**	**ug/L**	**2**
trans-1,2-Dichloroethene	**156-60-5**	**8260D**	**24**		**20**	16	**8.0**	**ug/L**	**2**
1,2-Dichloropropane	78-87-5	8260D	16	U	20	16	8.0	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	16	U	20	16	8.0	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	16	U	20	16	8.0	ug/L	2
Ethylbenzene	100-41-4	8260D	16	U	20	16	8.0	ug/L	2
2-Hexanone	591-78-6	8260D	80	U	200	80	40	ug/L	2
Isopropylbenzene	98-82-8	8260D	16	U	20	16	8.0	ug/L	2
Methyl acetate	79-20-9	8260D	16	U	20	16	8.0	ug/L	2
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260D**	**41**		**20**	16	**8.0**	**ug/L**	**2**
4-Methyl-2-pentanone	108-10-1	8260D	80	U	200	80	40	ug/L	2
Methylcyclohexane	108-87-2	8260D	16	U	100	16	8.0	ug/L	2
Methylene chloride	75-09-2	8260D	16	U	20	16	8.0	ug/L	2
Styrene	100-42-5	8260D	16	U	20	16	8.2	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	16	U	20	16	8.0	ug/L	2
Tetrachloroethene	127-18-4	8260D	16	U	20	16	8.0	ug/L	2
Toluene	108-88-3	8260D	16	U	20	16	8.0	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	17	U	20	17	8.4	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	16	U	20	16	8.0	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	16	U	20	16	8.0	ug/L	2
1,1,2-Trichloroethane	79-00-5	8260D	16	U	20	16	8.0	ug/L	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10043-004**	
Description: **MW-115**		Matrix: **Aqueous**	
Date Sampled: **08/08/2022 1725**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	20	08/19/2022 1826	BWS		51693

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**78**		**20**	16	**8.0**	**ug/L**	**2**
Trichlorofluoromethane	75-69-4	8260D	16	U	20	16	8.0	ug/L	2
Vinyl chloride	**75-01-4**	**8260D**	**150**		**20**	16	**8.0**	**ug/L**	**2**
Xylenes (total)	1330-20-7	8260D	16	U	20	16	8.0	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		98	81-118
Bromofluorobenzene		94	85-114
Toluene-d8		100	89-112
Dibromofluoromethane		99	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10043-004**
Description: **MW-115** Matrix: **Aqueous**
Date Sampled: **08/08/2022 1725** Project Name: **TAMP**
Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1723	CMF	08/11/2022 1740	50831

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	**84-74-2**	**8270E**	**0.56**	**J**	**1.6**	1.0	**0.50**	**ug/L**	**1**
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH10043-004**
Description: **MW-115** Matrix: **Aqueous**
Date Sampled: **08/08/2022 1725** Project Name: **TAMP**
Date Received: **08/10/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1723	CMF	08/11/2022 1740	50831

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		81	44-119
2-Fluorophenol		45	19-119
Nitrobenzene-d5		74	44-120
Phenol-d5		54	10-115
Terphenyl-d14		106	50-134
2,4,6-Tribromophenol		103	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Dissolved Gases

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10043-004**	
Description: **MW-115**		Matrix: **Aqueous**	
Date Sampled: **08/08/2022 1725**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	08/15/2022 1622	JM1		51135

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Ethane	**74-84-0**	**RSK - 175**	**14**		**10**	5.0	**2.5**	**ug/L**	**1**
Ethene	**74-85-1**	**RSK - 175**	**42**		**10**	5.0	**2.5**	**ug/L**	**1**
Methane	**74-82-8**	**RSK - 175**	**2400**		**10**	5.0	**2.5**	**ug/L**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10043-004**	
Description: **MW-115**		Matrix: **Aqueous**	
Date Sampled: **08/08/2022 1725**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	08/23/2022 0607	BNW	08/15/2022 0840	50905
1		7470A	1	08/13/2022 1719	MRW2	08/13/2022 1352	50806

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**1.6**	**J**	**5.0**	2.5	**1.3**	**ug/L**	**1**
Barium	**7440-39-3**	**6020B**	**92**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	7440-43-9	6020B	0.25	U	0.50	0.25	0.13	ug/L	1
Chromium	7440-47-3	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Lead	7439-92-1	6020B	0.50	U	1.0	0.50	0.25	ug/L	1
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10043-005**	
Description: **TB-02**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/17/2022 1419	JWO		51429

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**7.6**	**J**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH10043-005**	
Description: **TB-02**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022**	Project Name: **TAMP**		
Date Received: **08/10/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/17/2022 1419	JWO		51429

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		100	81-118
Bromofluorobenzene		103	85-114
Toluene-d8		112	89-112
Dibromofluoromethane		104	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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QC Summary

Inorganic non-metals - MB

Sample ID: XQ52324-001
Batch: 52324
Analytical Method: SM 5310C-2011

Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
TOC	1500	U	1	2000	1500	600	ug/L	08/27/2022 0227

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCS

Sample ID: XQ52324-002
Batch: 52324
Analytical Method: SM 5310C-2011

Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
TOC	20000	20000		1	100	90-110	08/27/2022 0238

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51130-001
Batch: 51130
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	08/15/2022 1101
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	08/15/2022 1101
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	08/15/2022 1101
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	08/15/2022 1101
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	08/15/2022 1101
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	08/15/2022 1101
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	08/15/2022 1101
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	08/15/2022 1101
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	08/15/2022 1101
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	08/15/2022 1101
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51130-001
Batch: 51130
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	08/15/2022 1101

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		102	81-118
Bromofluorobenzene		97	85-114
Toluene-d8		99	89-112
Dibromofluoromethane		98	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51130-002
Batch: 51130
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	140		1	135	39-160	08/15/2022 0952
Benzene	50	48		1	96	79-120	08/15/2022 0952
Bromodichloromethane	50	46		1	92	79-125	08/15/2022 0952
Bromoform	50	47		1	94	66-130	08/15/2022 0952
Bromomethane (Methyl bromide)	50	58		1	115	53-141	08/15/2022 0952
2-Butanone (MEK)	100	98		1	98	56-143	08/15/2022 0952
Carbon disulfide	50	42		1	83	64-133	08/15/2022 0952
Carbon tetrachloride	50	43		1	85	72-136	08/15/2022 0952
Chlorobenzene	50	44		1	88	82-118	08/15/2022 0952
Chloroethane	50	45		1	91	60-138	08/15/2022 0952
Chloroform	50	47		1	93	79-124	08/15/2022 0952
Chloromethane (Methyl chloride)	50	50		1	101	50-139	08/15/2022 0952
Cyclohexane	50	50		1	99	71-130	08/15/2022 0952
1,2-Dibromo-3-chloropropane (DBCP)	50	42		1	84	62-128	08/15/2022 0952
Dibromochloromethane	50	46		1	92	74-126	08/15/2022 0952
1,2-Dibromoethane (EDB)	50	48		1	95	77-121	08/15/2022 0952
1,2-Dichlorobenzene	50	45		1	89	80-119	08/15/2022 0952
1,3-Dichlorobenzene	50	44		1	89	80-119	08/15/2022 0952
1,4-Dichlorobenzene	50	43		1	86	79-118	08/15/2022 0952
Dichlorodifluoromethane	50	45		1	90	32-152	08/15/2022 0952
1,1-Dichloroethane	50	44		1	89	77-125	08/15/2022 0952
1,2-Dichloroethane	50	48		1	96	73-128	08/15/2022 0952
1,1-Dichloroethene	50	41		1	82	71-131	08/15/2022 0952
cis-1,2-Dichloroethene	50	47		1	94	78-123	08/15/2022 0952
trans-1,2-Dichloroethene	50	44		1	87	75-124	08/15/2022 0952
1,2-Dichloropropane	50	45		1	90	78-122	08/15/2022 0952
cis-1,3-Dichloropropene	50	48		1	95	75-124	08/15/2022 0952
trans-1,3-Dichloropropene	50	48		1	95	73-127	08/15/2022 0952
Ethylbenzene	50	45		1	89	79-121	08/15/2022 0952
2-Hexanone	100	96		1	96	57-139	08/15/2022 0952
Isopropylbenzene	50	45		1	90	72-131	08/15/2022 0952
Methyl acetate	50	52		1	104	56-136	08/15/2022 0952
Methyl tertiary butyl ether (MTBE)	50	51		1	103	71-124	08/15/2022 0952
4-Methyl-2-pentanone	100	100		1	102	67-130	08/15/2022 0952
Methylcyclohexane	50	42		1	83	72-132	08/15/2022 0952
Methylene chloride	50	43		1	86	74-124	08/15/2022 0952
Styrene	50	47		1	95	78-123	08/15/2022 0952
1,1,2,2-Tetrachloroethane	50	50		1	101	71-121	08/15/2022 0952
Tetrachloroethene	50	44		1	88	74-129	08/15/2022 0952
Toluene	50	46		1	91	80-121	08/15/2022 0952
1,2,4-Trichlorobenzene	50	43		1	85	69-130	08/15/2022 0952
1,1,1-Trichloroethane	50	44		1	89	74-131	08/15/2022 0952
1,1,2-Trichloroethane	50	48		1	96	80-119	08/15/2022 0952
Trichloroethene	50	43		1	86	79-123	08/15/2022 0952

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51130-002
Batch: 51130
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichlorofluoromethane	50	49		1	98	65-141	08/15/2022 0952
Vinyl chloride	50	59		1	118	58-137	08/15/2022 0952
Xylenes (total)	100	92		1	92	79-121	08/15/2022 0952

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		94	81-118
Bromofluorobenzene		94	85-114
Toluene-d8		92	89-112
Dibromofluoromethane		94	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MS

Sample ID: XH10043-001MS
Batch: 51130
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	ND	500	520		5	105	39-160	08/15/2022 1843
Benzene	ND	250	270		5	107	79-120	08/15/2022 1843
Bromodichloromethane	ND	250	230		5	92	79-125	08/15/2022 1843
Bromoform	ND	250	200		5	79	66-130	08/15/2022 1843
Bromomethane (Methyl bromide)	ND	250	280		5	112	53-141	08/15/2022 1843
2-Butanone (MEK)	ND	500	470		5	95	56-143	08/15/2022 1843
Carbon disulfide	ND	250	210		5	86	64-133	08/15/2022 1843
Carbon tetrachloride	ND	250	240		5	97	72-136	08/15/2022 1843
Chlorobenzene	ND	250	240		5	95	82-118	08/15/2022 1843
Chloroethane	ND	250	230		5	93	60-138	08/15/2022 1843
Chloroform	ND	250	250		5	101	79-124	08/15/2022 1843
Chloromethane (Methyl chloride)	ND	250	240		5	95	50-139	08/15/2022 1843
Cyclohexane	ND	250	240		5	97	71-130	08/15/2022 1843
1,2-Dibromo-3-chloropropane (DBCP)	ND	250	190		5	75	62-128	08/15/2022 1843
Dibromochloromethane	ND	250	210		5	86	74-126	08/15/2022 1843
1,2-Dibromoethane (EDB)	ND	250	240		5	96	77-121	08/15/2022 1843
1,2-Dichlorobenzene	ND	250	230		5	90	80-119	08/15/2022 1843
1,3-Dichlorobenzene	ND	250	230		5	92	80-119	08/15/2022 1843
1,4-Dichlorobenzene	ND	250	220		5	89	79-118	08/15/2022 1843
Dichlorodifluoromethane	ND	250	220		5	88	32-152	08/15/2022 1843
1,1-Dichloroethane	ND	250	240		5	96	77-125	08/15/2022 1843
1,2-Dichloroethane	ND	250	250		5	99	73-128	08/15/2022 1843
1,1-Dichloroethene	ND	250	240		5	97	71-131	08/15/2022 1843
cis-1,2-Dichloroethene	70	250	330		5	103	78-123	08/15/2022 1843
trans-1,2-Dichloroethene	ND	250	250		5	99	75-124	08/15/2022 1843
1,2-Dichloropropane	ND	250	230		5	94	78-122	08/15/2022 1843
cis-1,3-Dichloropropene	ND	250	230		5	91	75-124	08/15/2022 1843
trans-1,3-Dichloropropene	ND	250	220		5	88	73-127	08/15/2022 1843
Ethylbenzene	ND	250	250		5	99	79-121	08/15/2022 1843
2-Hexanone	ND	500	490		5	99	57-139	08/15/2022 1843
Isopropylbenzene	ND	250	240		5	97	72-131	08/15/2022 1843
Methyl acetate	ND	250	240		5	95	56-136	08/15/2022 1843
Methyl tertiary butyl ether (MTBE)	ND	250	250		5	101	71-124	08/15/2022 1843
4-Methyl-2-pentanone	ND	500	480		5	96	67-130	08/15/2022 1843
Methylcyclohexane	ND	250	250		5	101	72-132	08/15/2022 1843
Methylene chloride	ND	250	230		5	93	74-124	08/15/2022 1843
Styrene	ND	250	250		5	98	78-123	08/15/2022 1843
1,1,2,2-Tetrachloroethane	ND	250	240		5	94	71-121	08/15/2022 1843
Tetrachloroethene	67	250	330		5	104	74-129	08/15/2022 1843
Toluene	ND	250	250		5	100	80-121	08/15/2022 1843
1,2,4-Trichlorobenzene	ND	250	220		5	88	69-130	08/15/2022 1843
1,1,1-Trichloroethane	ND	250	250		5	101	74-131	08/15/2022 1843
1,1,2-Trichloroethane	ND	250	240		5	97	80-119	08/15/2022 1843
Trichloroethene	750	250	980		5	93	79-123	08/15/2022 1843

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MS

Sample ID: XH10043-001MS
Batch: 51130
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichlorofluoromethane	ND	250	250		5	99	65-141	08/15/2022 1843
Vinyl chloride	ND	250	280		5	114	58-137	08/15/2022 1843
Xylenes (total)	ND	500	490		5	99	79-121	08/15/2022 1843

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		94	81-118
Bromofluorobenzene		96	85-114
Toluene-d8		97	89-112
Dibromofluoromethane		97	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XH10043-001MD
Batch: 51130
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acetone	ND	500	530		5	107	1.7	39-160	20	08/15/2022 1906
Benzene	ND	250	260		5	103	3.8	79-120	20	08/15/2022 1906
Bromodichloromethane	ND	250	220		5	90	2.1	79-125	20	08/15/2022 1906
Bromoform	ND	250	200		5	78	0.24	66-130	20	08/15/2022 1906
Bromomethane (Methyl bromide)	ND	250	270		5	107	4.2	53-141	20	08/15/2022 1906
2-Butanone (MEK)	ND	500	470		5	94	0.95	56-143	20	08/15/2022 1906
Carbon disulfide	ND	250	210		5	84	2.0	64-133	20	08/15/2022 1906
Carbon tetrachloride	ND	250	240		5	95	1.6	72-136	20	08/15/2022 1906
Chlorobenzene	ND	250	230		5	92	3.4	82-118	20	08/15/2022 1906
Chloroethane	ND	250	210		5	85	8.6	60-138	20	08/15/2022 1906
Chloroform	ND	250	250		5	98	3.2	79-124	20	08/15/2022 1906
Chloromethane (Methyl chloride)	ND	250	220		5	89	5.9	50-139	20	08/15/2022 1906
Cyclohexane	ND	250	240		5	95	2.3	71-130	20	08/15/2022 1906
1,2-Dibromo-3-chloropropane (DBCP)	ND	250	180		5	72	3.2	62-128	20	08/15/2022 1906
Dibromochloromethane	ND	250	210		5	84	2.4	74-126	20	08/15/2022 1906
1,2-Dibromoethane (EDB)	ND	250	230		5	91	5.0	77-121	20	08/15/2022 1906
1,2-Dichlorobenzene	ND	250	220		5	88	2.6	80-119	20	08/15/2022 1906
1,3-Dichlorobenzene	ND	250	220		5	89	3.6	80-119	20	08/15/2022 1906
1,4-Dichlorobenzene	ND	250	210		5	85	4.6	79-118	20	08/15/2022 1906
Dichlorodifluoromethane	ND	250	200		5	79	11	32-152	20	08/15/2022 1906
1,1-Dichloroethane	ND	250	230		5	93	3.0	77-125	20	08/15/2022 1906
1,2-Dichloroethane	ND	250	240		5	95	3.9	73-128	20	08/15/2022 1906
1,1-Dichloroethene	ND	250	230		5	93	4.2	71-131	20	08/15/2022 1906
cis-1,2-Dichloroethene	70	250	320		5	98	3.7	78-123	20	08/15/2022 1906
trans-1,2-Dichloroethene	ND	250	240		5	96	3.7	75-124	20	08/15/2022 1906
1,2-Dichloropropane	ND	250	230		5	93	1.1	78-122	20	08/15/2022 1906
cis-1,3-Dichloropropene	ND	250	230		5	91	0.55	75-124	20	08/15/2022 1906
trans-1,3-Dichloropropene	ND	250	210		5	85	3.4	73-127	20	08/15/2022 1906
Ethylbenzene	ND	250	240		5	96	3.2	79-121	20	08/15/2022 1906
2-Hexanone	ND	500	470		5	95	4.4	57-139	20	08/15/2022 1906
Isopropylbenzene	ND	250	240		5	95	1.7	72-131	20	08/15/2022 1906
Methyl acetate	ND	250	230		5	92	2.8	56-136	20	08/15/2022 1906
Methyl tertiary butyl ether (MTBE)	ND	250	240		5	97	3.8	71-124	20	08/15/2022 1906
4-Methyl-2-pentanone	ND	500	470		5	94	1.8	67-130	20	08/15/2022 1906
Methylcyclohexane	ND	250	240		5	98	3.6	72-132	20	08/15/2022 1906
Methylene chloride	ND	250	230		5	91	2.1	74-124	20	08/15/2022 1906
Styrene	ND	250	240		5	95	3.0	78-123	20	08/15/2022 1906
1,1,2,2-Tetrachloroethane	ND	250	230		5	91	3.1	71-121	20	08/15/2022 1906
Tetrachloroethene	67	250	310		5	98	4.8	74-129	20	08/15/2022 1906
Toluene	ND	250	240		5	96	4.2	80-121	20	08/15/2022 1906
1,2,4-Trichlorobenzene	ND	250	210		5	85	3.7	69-130	20	08/15/2022 1906
1,1,1-Trichloroethane	ND	250	250		5	98	2.7	74-131	20	08/15/2022 1906
1,1,2-Trichloroethane	ND	250	230		5	94	3.0	80-119	20	08/15/2022 1906
Trichloroethene	750	250	930	N	5	71	5.7	79-123	20	08/15/2022 1906

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XH10043-001MD
Batch: 51130
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Trichlorofluoromethane	ND	250	240		5	94	5.0	65-141	20	08/15/2022 1906
Vinyl chloride	ND	250	270		5	108	5.3	58-137	20	08/15/2022 1906
Xylenes (total)	ND	500	480		5	95	3.2	79-121	20	08/15/2022 1906

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		93	81-118
Bromofluorobenzene		92	85-114
Toluene-d8		92	89-112
Dibromofluoromethane		94	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51416-001
Batch: 51416
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1040
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	08/17/2022 1040

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		98	81-118
Bromofluorobenzene		95	85-114
Toluene-d8		96	89-112
Dibromofluoromethane		91	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51416-002
Batch: 51416
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
cis-1,2-Dichloroethene	50	46		1	91	78-123	08/17/2022 0928
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	41		1	81	70-136	08/17/2022 0928

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		90	81-118
Bromofluorobenzene		92	85-114
Toluene-d8		92	89-112
Dibromofluoromethane		88	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MS

Sample ID: XH10043-002MS
Batch: 51416
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
cis-1,2-Dichloroethene	490	500	950		10	92	78-123	08/17/2022 1910
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	500	450		10	90	70-136	08/17/2022 1910

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		87	81-118
Bromofluorobenzene		88	85-114
Toluene-d8		89	89-112
Dibromofluoromethane		82	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XH10043-002MD
Batch: 51416
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
cis-1,2-Dichloroethene	490	500	920		10	86	3.5	78-123	20	08/17/2022 1933
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	500	420		10	83	7.3	70-136	20	08/17/2022 1933

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		82	81-118
Bromofluorobenzene		86	85-114
Toluene-d8	N	85	89-112
Dibromofluoromethane		81	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51429-001
Batch: 51429
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	08/17/2022 1100
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	08/17/2022 1100
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	08/17/2022 1100
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	08/17/2022 1100
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	08/17/2022 1100
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	08/17/2022 1100
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	08/17/2022 1100
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	08/17/2022 1100
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	08/17/2022 1100
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	08/17/2022 1100
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	08/17/2022 1100
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51429-001
Batch: 51429
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		103	81-118
Bromofluorobenzene		102	85-114
Toluene-d8		110	89-112
Dibromofluoromethane		104	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51429-002
Batch: 51429
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	95		1	95	39-160	08/17/2022 0927
Benzene	50	55		1	110	79-120	08/17/2022 0927
Bromodichloromethane	50	55		1	110	79-125	08/17/2022 0927
Bromoform	50	46		1	91	66-130	08/17/2022 0927
Bromomethane (Methyl bromide)	50	49		1	98	53-141	08/17/2022 0927
2-Butanone (MEK)	100	110		1	106	56-143	08/17/2022 0927
Carbon disulfide	50	48		1	96	64-133	08/17/2022 0927
Carbon tetrachloride	50	55		1	110	72-136	08/17/2022 0927
Chlorobenzene	50	52		1	105	82-118	08/17/2022 0927
Chloroethane	50	48		1	95	60-138	08/17/2022 0927
Chloroform	50	52		1	103	79-124	08/17/2022 0927
Chloromethane (Methyl chloride)	50	58		1	117	50-139	08/17/2022 0927
Cyclohexane	50	57		1	113	71-130	08/17/2022 0927
1,2-Dibromo-3-chloropropane (DBCP)	50	60		1	120	62-128	08/17/2022 0927
Dibromochloromethane	50	55		1	110	74-126	08/17/2022 0927
1,2-Dibromoethane (EDB)	50	54		1	109	77-121	08/17/2022 0927
1,2-Dichlorobenzene	50	51		1	103	80-119	08/17/2022 0927
1,3-Dichlorobenzene	50	51		1	103	80-119	08/17/2022 0927
1,4-Dichlorobenzene	50	50		1	100	79-118	08/17/2022 0927
Dichlorodifluoromethane	50	57		1	114	32-152	08/17/2022 0927
1,1-Dichloroethane	50	50		1	101	77-125	08/17/2022 0927
1,2-Dichloroethane	50	51		1	101	73-128	08/17/2022 0927
1,1-Dichloroethene	50	43		1	86	71-131	08/17/2022 0927
cis-1,2-Dichloroethene	50	53		1	107	78-123	08/17/2022 0927
trans-1,2-Dichloroethene	50	48		1	97	75-124	08/17/2022 0927
1,2-Dichloropropane	50	56		1	112	78-122	08/17/2022 0927
cis-1,3-Dichloropropene	50	51		1	103	75-124	08/17/2022 0927
trans-1,3-Dichloropropene	50	50		1	100	73-127	08/17/2022 0927
Ethylbenzene	50	55		1	110	79-121	08/17/2022 0927
2-Hexanone	100	100		1	104	57-139	08/17/2022 0927
Isopropylbenzene	50	48		1	96	72-131	08/17/2022 0927
Methyl acetate	50	48		1	96	56-136	08/17/2022 0927
Methyl tertiary butyl ether (MTBE)	50	51		1	103	71-124	08/17/2022 0927
4-Methyl-2-pentanone	100	110		1	106	67-130	08/17/2022 0927
Methylcyclohexane	50	56		1	112	72-132	08/17/2022 0927
Methylene chloride	50	43		1	87	74-124	08/17/2022 0927
Styrene	50	49		1	98	78-123	08/17/2022 0927
1,1,2,2-Tetrachloroethane	50	58		1	116	71-121	08/17/2022 0927
Tetrachloroethene	50	56		1	112	74-129	08/17/2022 0927
Toluene	50	56		1	113	80-121	08/17/2022 0927
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	47		1	93	70-136	08/17/2022 0927
1,2,4-Trichlorobenzene	50	53		1	107	69-130	08/17/2022 0927
1,1,1-Trichloroethane	50	53		1	107	74-131	08/17/2022 0927
1,1,2-Trichloroethane	50	56		1	112	80-119	08/17/2022 0927

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51429-002
Batch: 51429
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	54		1	108	79-123	08/17/2022 0927
Trichlorofluoromethane	50	44		1	88	65-141	08/17/2022 0927
Vinyl chloride	50	60		1	121	58-137	08/17/2022 0927
Xylenes (total)	100	100		1	105	79-121	08/17/2022 0927

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		100	81-118
Bromofluorobenzene		102	85-114
Toluene-d8		106	89-112
Dibromofluoromethane		100	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51688-001
Batch: 51688
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	08/19/2022 1206

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		98	81-118
Bromofluorobenzene		94	85-114
Toluene-d8		95	89-112
Dibromofluoromethane		91	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51688-002
Batch: 51688
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	41		1	82	70-136	08/19/2022 0849

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		88	81-118
Bromofluorobenzene		101	85-114
Toluene-d8		91	89-112
Dibromofluoromethane		88	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51693-001
Batch: 51693
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	08/19/2022 1225
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	08/19/2022 1225
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	08/19/2022 1225
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	08/19/2022 1225
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	08/19/2022 1225
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	08/19/2022 1225
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	08/19/2022 1225
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	08/19/2022 1225
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	08/19/2022 1225
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	08/19/2022 1225
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	08/19/2022 1225
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225

LOQ = Limit of Quantitation
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LOD = Limit of Detection

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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51693-001
Batch: 51693
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1225

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		98	81-118
Bromofluorobenzene		95	85-114
Toluene-d8		100	89-112
Dibromofluoromethane		99	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51693-002
Batch: 51693
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	150		1	145	39-160	08/19/2022 1022
Benzene	50	48		1	96	79-120	08/19/2022 1022
Bromodichloromethane	50	50		1	100	79-125	08/19/2022 1022
Bromoform	50	54		1	108	66-130	08/19/2022 1022
Bromomethane (Methyl bromide)	50	45		1	90	53-141	08/19/2022 1022
2-Butanone (MEK)	100	120		1	119	56-143	08/19/2022 1022
Carbon disulfide	50	48		1	96	64-133	08/19/2022 1022
Carbon tetrachloride	50	46		1	92	72-136	08/19/2022 1022
Chlorobenzene	50	49		1	98	82-118	08/19/2022 1022
Chloroethane	50	45		1	89	60-138	08/19/2022 1022
Chloroform	50	46		1	91	79-124	08/19/2022 1022
Chloromethane (Methyl chloride)	50	45		1	90	50-139	08/19/2022 1022
Cyclohexane	50	47		1	95	71-130	08/19/2022 1022
1,2-Dibromo-3-chloropropane (DBCP)	50	56		1	111	62-128	08/19/2022 1022
Dibromochloromethane	50	54		1	107	74-126	08/19/2022 1022
1,2-Dibromoethane (EDB)	50	52		1	103	77-121	08/19/2022 1022
1,2-Dichlorobenzene	50	50		1	100	80-119	08/19/2022 1022
1,3-Dichlorobenzene	50	51		1	102	80-119	08/19/2022 1022
1,4-Dichlorobenzene	50	48		1	95	79-118	08/19/2022 1022
Dichlorodifluoromethane	50	48		1	97	32-152	08/19/2022 1022
1,1-Dichloroethane	50	47		1	94	77-125	08/19/2022 1022
1,2-Dichloroethane	50	49		1	98	73-128	08/19/2022 1022
1,1-Dichloroethene	50	48		1	95	71-131	08/19/2022 1022
cis-1,2-Dichloroethene	50	48		1	96	78-123	08/19/2022 1022
trans-1,2-Dichloroethene	50	47		1	93	75-124	08/19/2022 1022
1,2-Dichloropropane	50	50		1	101	78-122	08/19/2022 1022
cis-1,3-Dichloropropene	50	56		1	112	75-124	08/19/2022 1022
trans-1,3-Dichloropropene	50	57		1	114	73-127	08/19/2022 1022
Ethylbenzene	50	52		1	104	79-121	08/19/2022 1022
2-Hexanone	100	110		1	112	57-139	08/19/2022 1022
Isopropylbenzene	50	54		1	109	72-131	08/19/2022 1022
Methyl acetate	50	53		1	107	56-136	08/19/2022 1022
Methyl tertiary butyl ether (MTBE)	50	56		1	113	71-124	08/19/2022 1022
4-Methyl-2-pentanone	100	110		1	109	67-130	08/19/2022 1022
Methylcyclohexane	50	49		1	99	72-132	08/19/2022 1022
Methylene chloride	50	47		1	93	74-124	08/19/2022 1022
Styrene	50	56		1	111	78-123	08/19/2022 1022
1,1,2,2-Tetrachloroethane	50	51		1	102	71-121	08/19/2022 1022
Tetrachloroethene	50	50		1	100	74-129	08/19/2022 1022
Toluene	50	52		1	105	80-121	08/19/2022 1022
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	46		1	93	70-136	08/19/2022 1022
1,2,4-Trichlorobenzene	50	49		1	98	69-130	08/19/2022 1022
1,1,1-Trichloroethane	50	47		1	95	74-131	08/19/2022 1022
1,1,2-Trichloroethane	50	50		1	100	80-119	08/19/2022 1022

LOQ = Limit of Quantitation
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LOD = Limit of Detection

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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51693-002
Batch: 51693
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	47		1	95	79-123	08/19/2022 1022
Trichlorofluoromethane	50	45		1	91	65-141	08/19/2022 1022
Vinyl chloride	50	46		1	91	58-137	08/19/2022 1022
Xylenes (total)	100	110		1	109	79-121	08/19/2022 1022

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		93	81-118
Bromofluorobenzene		97	85-114
Toluene-d8		101	89-112
Dibromofluoromethane		93	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ50831-001
Batch: 50831
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/11/2022 1740

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acenaphthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Acenaphthylene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Acetophenone	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Atrazine	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Benzaldehyde	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Benzo(a)anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Benzo(a)pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Benzo(b)fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Benzo(g,h,i)perylene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Benzo(k)fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
1,1'-Biphenyl	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
4-Bromophenyl phenyl ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Butyl benzyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Caprolactam	2.0	U	1	3.0	2.0	1.0	ug/L	08/17/2022 0959
Carbazole	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
bis (2-Chloro-1-methylethyl) ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
4-Chloro-3-methyl phenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
4-Chloroaniline	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
bis(2-Chloroethoxy)methane	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
bis(2-Chloroethyl)ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
2-Chloronaphthalene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
2-Chlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
4-Chlorophenyl phenyl ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Chrysene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Dibenzo(a,h)anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Dibenzofuran	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
3,3'-Dichlorobenzidine	3.5	U	1	4.0	3.5	1.8	ug/L	08/17/2022 0959
2,4-Dichlorophenol	0.50	U	1	1.6	0.50	0.25	ug/L	08/17/2022 0959
Diethylphthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Dimethyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
2,4-Dimethylphenol	1.5	U	1	2.0	1.5	0.62	ug/L	08/17/2022 0959
Di-n-butyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
4,6-Dinitro-2-methylphenol	2.0	U	1	4.0	2.0	1.0	ug/L	08/17/2022 0959
2,4-Dinitrophenol	2.0	U	1	4.0	2.0	1.0	ug/L	08/17/2022 0959
2,4-Dinitrotoluene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
2,6-Dinitrotoluene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Di-n-octylphthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
bis(2-Ethylhexyl)phthalate	3.0	U	1	4.0	3.0	1.5	ug/L	08/17/2022 0959
Fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Fluorene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Hexachlorobenzene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Hexachlorobutadiene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Hexachlorocyclopentadiene	4.0	U	1	4.0	4.0	2.0	ug/L	08/17/2022 0959

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ50831-001
Batch: 50831
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/11/2022 1740

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Hexachloroethane	0.40	U	1	0.80	0.40	0.17	ug/L	08/17/2022 0959
Indeno(1,2,3-c,d)pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Isophorone	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
2-Methylnaphthalene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
2-Methylphenol	1.3	U	1	1.6	1.3	0.67	ug/L	08/17/2022 0959
3+4-Methylphenol	3.0	U	1	4.0	3.0	1.5	ug/L	08/17/2022 0959
Naphthalene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
2-Nitroaniline	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
3-Nitroaniline	2.0	U	1	3.0	2.0	1.0	ug/L	08/17/2022 0959
4-Nitroaniline	3.0	U	1	4.0	3.0	1.5	ug/L	08/17/2022 0959
Nitrobenzene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
2-Nitrophenol	2.0	U	1	3.2	2.0	1.0	ug/L	08/17/2022 0959
4-Nitrophenol	4.0	U	1	5.0	4.0	2.0	ug/L	08/17/2022 0959
N-Nitrosodi-n-propylamine	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
N-Nitrosodiphenylamine (Diphenylamine)	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Pentachlorophenol	4.0	U	1	5.0	4.0	2.0	ug/L	08/17/2022 0959
Phenanthrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
Phenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
Pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 0959
2,4,5-Trichlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959
2,4,6-Trichlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 0959

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		76	44-119
2-Fluorophenol		47	19-119
Nitrobenzene-d5		73	44-120
Phenol-d5		63	10-115
Terphenyl-d14		104	50-134
2,4,6-Tribromophenol		89	43-140

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* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ50831-002
Batch: 50831
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/11/2022 1740

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acenaphthene	8.0	6.9		1	87	47-122	08/17/2022 1024
Acenaphthylene	8.0	7.6		1	95	41-130	08/17/2022 1024
Acetophenone	8.0	6.6		1	82	46-118	08/17/2022 1024
Anthracene	8.0	7.8		1	98	57-123	08/17/2022 1024
Atrazine	8.0	7.9		1	99	44-142	08/17/2022 1024
Benzaldehyde	8.0	5.2		1	65	20-115	08/17/2022 1024
Benzo(a)anthracene	8.0	8.2		1	102	58-125	08/17/2022 1024
Benzo(a)pyrene	8.0	8.2		1	102	54-128	08/17/2022 1024
Benzo(b)fluoranthene	8.0	8.4		1	105	53-131	08/17/2022 1024
Benzo(g,h,i)perylene	8.0	8.9		1	111	50-134	08/17/2022 1024
Benzo(k)fluoranthene	8.0	8.1		1	101	57-129	08/17/2022 1024
1,1'-Biphenyl	8.0	6.7		1	83	49-115	08/17/2022 1024
4-Bromophenyl phenyl ether	8.0	7.6		1	95	55-124	08/17/2022 1024
Butyl benzyl phthalate	8.0	9.4		1	117	53-134	08/17/2022 1024
Caprolactam	8.0	8.8		1	110	44-152	08/17/2022 1024
Carbazole	8.0	7.9		1	98	60-122	08/17/2022 1024
bis (2-Chloro-1-methylethyl) ether	8.0	7.3		1	91	37-130	08/17/2022 1024
4-Chloro-3-methyl phenol	8.0	7.5		1	93	52-119	08/17/2022 1024
4-Chloroaniline	8.0	6.2		1	78	33-117	08/17/2022 1024
bis(2-Chloroethoxy)methane	8.0	7.1		1	89	48-120	08/17/2022 1024
bis(2-Chloroethyl)ether	8.0	6.9		1	86	43-118	08/17/2022 1024
2-Chloronaphthalene	8.0	6.8		1	85	40-116	08/17/2022 1024
2-Chlorophenol	8.0	6.6		1	83	38-117	08/17/2022 1024
4-Chlorophenyl phenyl ether	8.0	7.3		1	91	53-121	08/17/2022 1024
Chrysene	8.0	8.1		1	101	59-123	08/17/2022 1024
Dibenzo(a,h)anthracene	8.0	8.6		1	107	51-134	08/17/2022 1024
Dibenzofuran	8.0	6.6		1	83	53-118	08/17/2022 1024
3,3'-Dichlorobenzidine	8.0	4.4		1	55	27-129	08/17/2022 1024
2,4-Dichlorophenol	8.0	6.8		1	85	47-121	08/17/2022 1024
Diethylphthalate	8.0	8.1		1	102	56-125	08/17/2022 1024
Dimethyl phthalate	8.0	7.8		1	98	45-127	08/17/2022 1024
2,4-Dimethylphenol	8.0	7.8		1	98	31-124	08/17/2022 1024
Di-n-butyl phthalate	8.0	9.0		1	112	59-127	08/17/2022 1024
4,6-Dinitro-2-methylphenol	8.0	6.8		1	85	44-137	08/17/2022 1024
2,4-Dinitrophenol	16	9.8		1	61	23-143	08/17/2022 1024
2,4-Dinitrotoluene	8.0	7.9		1	98	57-128	08/17/2022 1024
2,6-Dinitrotoluene	8.0	7.3		1	91	57-124	08/17/2022 1024
Di-n-octylphthalate	8.0	8.1		1	102	51-140	08/17/2022 1024
bis(2-Ethylhexyl)phthalate	8.0	10		1	128	55-135	08/17/2022 1024
Fluoranthene	8.0	8.3		1	104	57-128	08/17/2022 1024
Fluorene	8.0	7.2		1	90	52-124	08/17/2022 1024
Hexachlorobenzene	8.0	7.3		1	92	53-125	08/17/2022 1024
Hexachlorobutadiene	8.0	5.8		1	73	22-124	08/17/2022 1024
Hexachlorocyclopentadiene	40	20		1	50	16-96	08/17/2022 1024

LOQ = Limit of Quantitation
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LOD = Limit of Detection

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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ50831-002
Batch: 50831
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/11/2022 1740

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Hexachloroethane	8.0	6.0		1	75	21-115	08/17/2022 1024
Indeno(1,2,3-c,d)pyrene	8.0	8.4		1	105	52-134	08/17/2022 1024
Isophorone	8.0	6.7		1	84	42-124	08/17/2022 1024
2-Methylnaphthalene	8.0	6.7		1	84	40-121	08/17/2022 1024
2-Methylphenol	8.0	7.3		1	91	30-117	08/17/2022 1024
3+4-Methylphenol	8.0	7.0		1	88	29-110	08/17/2022 1024
Naphthalene	8.0	6.8		1	85	40-121	08/17/2022 1024
2-Nitroaniline	8.0	7.9		1	99	55-127	08/17/2022 1024
3-Nitroaniline	8.0	5.6		1	69	41-128	08/17/2022 1024
4-Nitroaniline	8.0	6.8		1	85	30-135	08/17/2022 1024
Nitrobenzene	8.0	5.9		1	73	45-121	08/17/2022 1024
2-Nitrophenol	8.0	6.9		1	87	47-123	08/17/2022 1024
4-Nitrophenol	16	16		1	98	53-130	08/17/2022 1024
N-Nitrosodi-n-propylamine	8.0	7.1		1	89	49-119	08/17/2022 1024
N-Nitrosodiphenylamine (Diphenylamine)	8.0	7.6		1	95	51-123	08/17/2022 1024
Pentachlorophenol	16	14		1	85	35-138	08/17/2022 1024
Phenanthrene	8.0	7.5		1	94	59-120	08/17/2022 1024
Phenol	8.0	7.0		1	87	49-117	08/17/2022 1024
Pyrene	8.0	8.5		1	106	57-126	08/17/2022 1024
2,4,5-Trichlorophenol	8.0	7.0		1	88	53-123	08/17/2022 1024
2,4,6-Trichlorophenol	8.0	7.3		1	91	50-125	08/17/2022 1024

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		83	44-119
2-Fluorophenol		74	19-119
Nitrobenzene-d5		85	44-120
Phenol-d5		80	10-115
Terphenyl-d14		105	50-134
2,4,6-Tribromophenol		97	43-140

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Dissolved Gases - MB

Sample ID: XQ51135-001
Batch: 51135
Analytical Method: RSK - 175
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Ethane	5.0	U	1	10	5.0	2.5	ug/L	08/15/2022 1519
Ethene	5.0	U	1	10	5.0	2.5	ug/L	08/15/2022 1519
Methane	5.0	U	1	10	5.0	2.5	ug/L	08/15/2022 1519

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Dissolved Gases - LCS

Sample ID: XQ51135-002
Batch: 51135
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Ethane	550	570		1	103	74-131	08/15/2022 1438
Ethene	520	540		1	104	72-133	08/15/2022 1438
Methane	300	330		1	111	73-125	08/15/2022 1438

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Dissolved Gases - LCSD

Sample ID: XQ51135-003
Batch: 51135
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Ethane	550	570		1	102	0.91	74-131	30	08/15/2022 1452
Ethene	520	530		1	103	0.97	72-133	30	08/15/2022 1452
Methane	300	320		1	109	2.0	73-125	30	08/15/2022 1452

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MB

Sample ID: XQ50905-001
Batch: 50905
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 08/15/2022 0840

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Arsenic	2.5	U	1	5.0	2.5	1.3	ug/L	08/23/2022 0215
Barium	2.5	U	1	5.0	2.5	1.3	ug/L	08/23/2022 0215
Cadmium	0.25	U	1	0.50	0.25	0.13	ug/L	08/23/2022 0215
Chromium	2.5	U	1	5.0	2.5	1.3	ug/L	08/23/2022 0215
Lead	0.50	U	1	1.0	0.50	0.25	ug/L	08/23/2022 0215
Selenium	2.5	U	1	5.0	2.5	1.3	ug/L	08/23/2022 0215
Silver	0.50	U	1	1.0	0.50	0.25	ug/L	08/23/2022 0215

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - LCS

Sample ID: XQ50905-002
Batch: 50905
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 08/15/2022 0840

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Arsenic	100	100		1	101	84-116	08/23/2022 0223
Barium	100	100		1	103	86-114	08/23/2022 0223
Cadmium	100	96		1	96	87-115	08/23/2022 0223
Chromium	100	110		1	108	85-116	08/23/2022 0223
Lead	100	110		1	106	88-115	08/23/2022 0223

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MB

Sample ID: XQ50806-001
Batch: 50806
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 08/13/2022 1352

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Mercury	0.18	U	1	0.20	0.18	0.091	ug/L	08/13/2022 1619

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - LCS

Sample ID: XQ50806-002
Batch: 50806
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 08/13/2022 1352

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Mercury	2.0	2.1		1	107	82-119	08/13/2022 1622

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Chain of Custody
and
Miscellaneous Documents

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www.pacelabs.com

Number 137979

Client: Terrain Consultants
Address: 2401 Brentwood Rd, Suite 107
City: Raleigh | State: NC | Zip Code: 27604
Project Name: TAMP
Project No.: 7021P175
P.O. No.:

Report to Contact: Ethan.Dinwiddie@Terrain.com
Sampler's Signature: [signature]
Printed Name: Ethan Dinwiddie

Telephone No. / E-mail: Dan.Malone@Terrain.com
Analysis (Attach list if more space is needed)

Quote No.: 25322
Page 1 of 1

XH10043
CSD

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	Grab C-Composite	Matrix: Aqueous	Matrix: Soil	Matrix: Non-Aqueous	No of Containers by Preservative Type: Unpres.	H2SO4	HNO3	HCl	NaOH	5035 Kit	Field Filtered	VOCs 8260	SVOCs 8270	RCRA 8 Metals	TOC 9060	Dissolved Gases RSK-175					Remarks / Cooler I.D.
~~MW-111~~	~~8/9~~	~~1250~~	~~G~~	~~X~~			~~2~~		~~2~~	~~3~~	~~2~~												
MW-100	8/9	1050	G	X			2	1	1	5				X	X	X	X	X					
MW-118	8/8	1652	G	X			2		1	3				X	X	X							
MW-121	8/9	1005	G	X			2	1	1	5				X	X	X	X	X					
MW-115	8/8	1725	G	X			2	1	1	5				X	X	X	X	X					
~~MW-5~~	~~8/9~~																						
TB-02	8/9	—	G	X						2				X									

Turn Around Time Required (Prior lab approval required for expedited TAT.) ☒ Standard ☐ Rush (Specify)

Sample Disposal: ☐ Return to Client ☒ Disposal by Lab

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☒ Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by: [signature]	8/9	1445	1. Received by: [signature]	8.9.22	1445
2. Relinquished by: [signature]	8/9	1541	2. Received by:		
3. Relinquished by:			3. Received by:		
4. Relinquished by: fedex	8.10.22	1000	4. Laboratory received by: [signature]	8.10.22	1000

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Circle) Yes No Ice Pack | Receipt Temp 1.4 °C | Temp Blank ☒ Y ☐ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME003N2-01

DC#_Title: ENV-FRM-WCOL-0286 v02_Samples Receipt Checklist (SRC)
Effective Date: 8/2/2022

Sample Receipt Checklist (SRC)

Client: Terracon Cooler Inspected by/date: CER / 08/10/2022 Lot #: XH10043

Means of receipt: [ ] Pace [ ] Client [ ] UPS [✓] FedEx [ ] Other: _____

[ ] Yes	[✓] No		1. Were custody seals present on the cooler?
[ ] Yes	[ ] No	[✓] NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: 22-1645 Chlorine Strip ID: NA Tested by: CER
Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA
1.4 / 1.4 °C NA / NA °C NA / NA °C NA / NA °C
Method: [✓] Temperature Blank [ ] Against Bottles IR Gun ID: 8 IR Gun Correction Factor: 0 °C
Method of coolant: [✓] Wet Ice [ ] Ice Packs [ ] Dry Ice [ ] None

[✓] Yes	[ ] No	[ ] NA	3. Were all coolers received at or below 6.0°C? If no, was Project Manager notified? PM was Notified by: phone / email / face-to-face (circle one).
[✓] Yes	[ ] No	[ ] NA	4. Is the commercial courier's packing slip attached to this form?
[✓] Yes	[ ] No		5. Were proper custody procedures (relinquished/received) followed?
[✓] Yes	[ ] No		6. Were sample IDs listed on the COC and all sample containers?
[✓] Yes	[ ] No		7. Was collection date & time listed on the COC and all sample containers?
[✓] Yes	[ ] No		8. Did all container label information (ID, date, time) agree with the COC?
[✓] Yes	[ ] No		9. Were tests to be performed listed on the COC?
[✓] Yes	[ ] No		10. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? _____
[✓] Yes	[ ] No		11. Was adequate sample volume available?
[✓] Yes	[ ] No		12. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
[✓] Yes	[ ] No		13. Were all samples containers accounted for? (No missing/excess)
[✓] Yes	[ ] No	[ ] NA	14. Were VOA, 8015C and RSK-175 samples free of bubbles >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
[✓] Yes	[ ] No	[ ] NA	15. Were all DRO/metals/nutrient samples received at a pH of < 2?
[ ] Yes	[ ] No	[✓] NA	16. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
[ ] Yes	[ ] No	[✓] NA	17. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
[✓] Yes	[ ] No	[ ] NA	18. Was the quote number listed on the container label? If yes, Quote # 25322

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA _____ were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA. ☐
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA _____ were received with bubbles >6 mm in diameter.

Samples(s) NA _____ were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Unique ID: NA.

Comments:

Qualtrax ID: 56360 Pace® Analytical Services, LLC Page 1 of 1

Report of Analysis

Terracon Consultants, Inc.
2401 Brentwood Road
Suite 107 I
Raleigh, NC 27604
Attention: Ethan Dinwiddie

Project Name: TAMP

Project Number: 7021P145

Lot Number:**XH11018**

Date Completed:09/02/2022

09/07/2022 8:52 PM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.
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Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
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Case Narrative
Terracon Consultants, Inc.
Lot Number: XH11018

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Additionally, the DoD QSM version 5.3 has been followed for these samples. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs, the DoD QSM, or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

VOA 8260D
The MS for batch 51429 and parent sample XH11018-003 (MW-108) had surrogate 1,2-Dixhloroethane-d4 and Toluene-d8 was outside the lower control limit. The MSD had surrogate 1,2-Dichloroethane-d4 was outside the lower control limit. The CCV and LCS associated with batch 51429 passed acceptance criteria; therefore the data has been reported.

The continuing calibration verification (CCV) associated with samples XH11018-001 (MW-112) and XH11018-005 (TB-09) for Vinyl Chloride (21%) recovered above the upper control limit. The samples associated with this CCV were non-detect for the affected analyte; therefore, the data has been reported.

Sample XH11018-002 (MW-103) was received with an air bubble > 6mm in the sample vials.

The MS for batch 51429 and parent sample XH11018-003 (MW-108), recovered outside the lower control limit for Bromoform. The associated LCS and MSD passed acceptance criteria. The RPD for DCDFM and Methyl Acetate was > 20%.

Dissolved Gases (RSK 175)
Sample XH11018-002 (MW-103) was received with an air bubble > 6mm in the sample vials.

The method blank associated with batch 51425 had Methane detected at a concentration that was above the DL but below the LOQ. All samples associated with this method blank that have detections for Methane have been flagged with a "B”.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

PACE ANALYTICAL SERVICES, LLC

Sample Summary

Terracon Consultants, Inc.

Lot Number: XH11018

Project Name: TAMP

Project Number: 7021P145

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	MW-112	Aqueous	08/09/2022 1715	08/11/2022
002	MW-103	Aqueous	08/10/2022 1335	08/11/2022
003	MW-108	Aqueous	08/10/2022 1305	08/11/2022
004	MW-11	Aqueous	08/10/2022 1450	08/11/2022
005	TB-09	Aqueous	08/10/2022	08/11/2022

(5 samples)

Detection Summary

Terracon Consultants, Inc.

Lot Number: XH11018

Project Name: TAMP

Project Number: 7021P145

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	MW-112	Aqueous	TOC	SM 5310C-	670	J	ug/L	6
001	MW-112	Aqueous	Carbon tetrachloride	8260D	0.42	J	ug/L	7
001	MW-112	Aqueous	Chloroform	8260D	0.60	J	ug/L	7
001	MW-112	Aqueous	Chloromethane (Methyl	8260D	0.53	J	ug/L	7
001	MW-112	Aqueous	1,1-Dichloroethene	8260D	0.48	J	ug/L	7
001	MW-112	Aqueous	cis-1,2-Dichloroethene	8260D	3.6		ug/L	7
001	MW-112	Aqueous	Tetrachloroethene	8260D	10		ug/L	7
001	MW-112	Aqueous	Trichloroethene	8260D	79		ug/L	8
001	MW-112	Aqueous	Di-n-butyl phthalate	8270E	0.91	J	ug/L	9
001	MW-112	Aqueous	Methane	RSK - 175	3.0	BJ	ug/L	11
001	MW-112	Aqueous	Barium	6020B	23		ug/L	12
001	MW-112	Aqueous	Chromium	6020B	2.9	J	ug/L	12
002	MW-103	Aqueous	Acetone	8260D	11	J	ug/L	14
002	MW-103	Aqueous	Chloroform	8260D	3.1		ug/L	14
002	MW-103	Aqueous	1,1-Dichloroethane	8260D	0.59	J	ug/L	14
002	MW-103	Aqueous	1,1-Dichloroethene	8260D	3.4		ug/L	14
002	MW-103	Aqueous	cis-1,2-Dichloroethene	8260D	0.78	J	ug/L	14
002	MW-103	Aqueous	Tetrachloroethene	8260D	34		ug/L	14
002	MW-103	Aqueous	1,1,2-Trichloro-1,2,2-	8260D	18		ug/L	14
002	MW-103	Aqueous	1,1,1-Trichloroethane	8260D	1.4		ug/L	14
002	MW-103	Aqueous	Trichloroethene	8260D	120		ug/L	15
002	MW-103	Aqueous	Trichlorofluoromethane	8260D	49		ug/L	15
002	MW-103	Aqueous	Di-n-butyl phthalate	8270E	0.75	J	ug/L	16
002	MW-103	Aqueous	Methane	RSK - 175	4.4	BJ	ug/L	18
002	MW-103	Aqueous	Barium	6020B	47		ug/L	19
002	MW-103	Aqueous	Cadmium	6020B	0.58		ug/L	19
002	MW-103	Aqueous	Chromium	6020B	2.5	J	ug/L	19
003	MW-108	Aqueous	TOC	SM 5310C-	3100		ug/L	20
003	MW-108	Aqueous	Benzene	8260D	4.4	J	ug/L	21
003	MW-108	Aqueous	1,1-Dichloroethane	8260D	8.1		ug/L	21
003	MW-108	Aqueous	1,1-Dichloroethene	8260D	3.0	J	ug/L	21
003	MW-108	Aqueous	cis-1,2-Dichloroethene	8260D	890		ug/L	21
003	MW-108	Aqueous	trans-1,2-Dichloroethene	8260D	51		ug/L	21
003	MW-108	Aqueous	Methyl tertiary butyl ether	8260D	7.1		ug/L	21
003	MW-108	Aqueous	Trichloroethene	8260D	67		ug/L	22
003	MW-108	Aqueous	Vinyl chloride	8260D	310		ug/L	22
003	MW-108	Aqueous	Acenaphthene	8270E	0.15	J	ug/L	23
003	MW-108	Aqueous	Di-n-butyl phthalate	8270E	0.79	J	ug/L	23
003	MW-108	Aqueous	Ethane	RSK - 175	8.9	J	ug/L	25
003	MW-108	Aqueous	Ethene	RSK - 175	140		ug/L	25
003	MW-108	Aqueous	Methane	RSK - 175	6100		ug/L	25
003	MW-108	Aqueous	Barium	6020B	110		ug/L	26
004	MW-11	Aqueous	TOC	SM 5310C-	730	J	ug/L	27

Detection Summary (Continued)

Lot Number: XH11018

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
004	MW-11	Aqueous	Acetone	8260D	5.1	J	ug/L	28
004	MW-11	Aqueous	Chloroform	8260D	0.96	J	ug/L	28
004	MW-11	Aqueous	cis-1,2-Dichloroethene	8260D	23		ug/L	28
004	MW-11	Aqueous	trans-1,2-Dichloroethene	8260D	0.41	J	ug/L	28
004	MW-11	Aqueous	Tetrachloroethene	8260D	11		ug/L	28
004	MW-11	Aqueous	1,1,2-Trichloro-1,2,2-	8260D	0.73	J	ug/L	28
004	MW-11	Aqueous	Trichloroethene	8260D	93		ug/L	29
004	MW-11	Aqueous	Di-n-butyl phthalate	8270E	0.75	J	ug/L	30
004	MW-11	Aqueous	Methane	RSK - 175	56	B	ug/L	32
004	MW-11	Aqueous	Barium	6020B	42		ug/L	33
004	MW-11	Aqueous	Chromium	6020B	79		ug/L	33
004	MW-11	Aqueous	Lead	6020B	0.53	J	ug/L	33

(55 detections)

Inorganic non-metals

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH11018-001**	
Description: **MW-112**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 1715**	Project Name: **TAMP**		
Date Received: **08/11/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(TOC) SM 5310C-2011	1	08/29/2022 2152	CMM		52525

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
TOC		**SM 5310C-2011**	**670**	**J**	**2000**	1500	**600**	**ug/L**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11018-001**

Description: **MW-112** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1715** Project Name: **TAMP**

Date Received: **08/11/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/17/2022 1635	JWO		51429

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	**56-23-5**	**8260D**	**0.42**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	**67-66-3**	**8260D**	**0.60**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
Chloromethane (Methyl chloride)	**74-87-3**	**8260D**	**0.53**	**J**	**2.0**	1.0	**0.50**	**ug/L**	**1**
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	**75-35-4**	**8260D**	**0.48**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**3.6**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**10**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH11018-001**	
Description: **MW-112**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 1715**	Project Name: **TAMP**		
Date Received: **08/11/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/17/2022 1635	JWO		51429

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**79**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		109	81-118
Bromofluorobenzene		103	85-114
Toluene-d8		111	89-112
Dibromofluoromethane		112	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11018-001**

Description: **MW-112** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1715** Project Name: **TAMP**

Date Received: **08/11/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1748	CMF		50961

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	**84-74-2**	**8270E**	**0.91**	**J**	**1.6**	1.0	**0.50**	**ug/L**	**1**
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation | B = Detected in the method blank | E = Quantitation of compound exceeded the calibration range | DL = Detection Limit | Q = Surrogate failure

U = Not detected at or above the LOD | N = Recovery is out of criteria | P = The RPD between two GC columns exceeds 40% | J = Estimated result < LOQ and ≥ DL | L = LCS/LCSD failure

H = Out of holding time | W = Reported on wet weight basis | LOD = Limit of Detection | S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11018-001**
Description: **MW-112** Matrix: **Aqueous**
Date Sampled: **08/09/2022 1715** Project Name: **TAMP**
Date Received: **08/11/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1748	CMF		50961

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		46	44-119
2-Fluorophenol		26	19-119
Nitrobenzene-d5		45	44-120
Phenol-d5		37	10-115
Terphenyl-d14		85	50-134
2,4,6-Tribromophenol		75	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Dissolved Gases

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH11018-001**	
Description: **MW-112**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 1715**	Project Name: **TAMP**		
Date Received: **08/11/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	08/17/2022 1555	JM1		51425

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Ethane	74-84-0	RSK - 175	5.0	U	10	5.0	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	5.0	U	10	5.0	2.5	ug/L	1
Methane	**74-82-8**	**RSK - 175**	**3.0**	**BJ**	**10**	5.0	**2.5**	**ug/L**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH11018-001**	
Description: **MW-112**		Matrix: **Aqueous**	
Date Sampled: **08/09/2022 1715**	Project Name: **TAMP**		
Date Received: **08/11/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	08/23/2022 0615	BNW	08/15/2022 0840	50905
1		7470A	1	08/13/2022 1828	MRW2	08/13/2022 1352	51007

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**23**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	7440-43-9	6020B	0.25	U	0.50	0.25	0.13	ug/L	1
Chromium	**7440-47-3**	**6020B**	**2.9**	**J**	**5.0**	2.5	**1.3**	**ug/L**	**1**
Lead	7439-92-1	6020B	0.50	U	1.0	0.50	0.25	ug/L	1
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Inorganic non-metals

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH11018-002**	
Description: **MW-103**		Matrix: **Aqueous**	
Date Sampled: **08/10/2022 1335**	Project Name: **TAMP**		
Date Received: **08/11/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(TOC) SM 5310C-2011	1	08/29/2022 2203	CMM		52525

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
TOC		SM 5310C-2011	1500	U	2000	1500	600	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11018-002**

Description: **MW-103** Matrix: **Aqueous**

Date Sampled: **08/10/2022 1335** Project Name: **TAMP**

Date Received: **08/11/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	1	08/21/2022 1601	JMM2		51772

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**11**	**J**	**20**	10	**5.0**	**ug/L**	**2**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	2
Chloroform	**67-66-3**	**8260D**	**3.1**		**1.0**	0.80	**0.40**	**ug/L**	**2**
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	2
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	2
1,1-Dichloroethane	**75-34-3**	**8260D**	**0.59**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**2**
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1-Dichloroethene	**75-35-4**	**8260D**	**3.4**		**1.0**	0.80	**0.40**	**ug/L**	**2**
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**0.78**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**2**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	2
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	2
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Tetrachloroethene	**127-18-4**	**8260D**	**34**		**1.0**	0.80	**0.40**	**ug/L**	**2**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**18**		**1.0**	0.84	**0.42**	**ug/L**	**2**
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,1-Trichloroethane	**71-55-6**	**8260D**	**1.4**		**1.0**	0.80	**0.40**	**ug/L**	**2**
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH11018-002**	
Description: **MW-103**		Matrix: **Aqueous**	
Date Sampled: **08/10/2022 1335**	Project Name: **TAMP**		
Date Received: **08/11/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	1	08/21/2022 1601	JMM2		51772

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**120**		**1.0**	0.80	**0.40**	**ug/L**	**2**
Trichlorofluoromethane	**75-69-4**	**8260D**	**49**		**1.0**	0.80	**0.40**	**ug/L**	**2**
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		100	81-118
Bromofluorobenzene		94	85-114
Toluene-d8		101	89-112
Dibromofluoromethane		98	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11018-002**

Description: **MW-103** Matrix: **Aqueous**

Date Sampled: **08/10/2022 1335** Project Name: **TAMP**

Date Received: **08/11/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1812	CMF		50961

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	**84-74-2**	**8270E**	**0.75**	**J**	**1.6**	1.0	**0.50**	**ug/L**	**1**
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation | B = Detected in the method blank | E = Quantitation of compound exceeded the calibration range | DL = Detection Limit | Q = Surrogate failure

U = Not detected at or above the LOD | N = Recovery is out of criteria | P = The RPD between two GC columns exceeds 40% | J = Estimated result < LOQ and ≥ DL | L = LCS/LCSD failure

H = Out of holding time | W = Reported on wet weight basis | LOD = Limit of Detection | S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11018-002**

Description: **MW-103** Matrix: **Aqueous**

Date Sampled: **08/10/2022 1335** Project Name: **TAMP**

Date Received: **08/11/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1812	CMF		50961

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		48	44-119
2-Fluorophenol		29	19-119
Nitrobenzene-d5		45	44-120
Phenol-d5		32	10-115
Terphenyl-d14		80	50-134
2,4,6-Tribromophenol		69	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Dissolved Gases

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH11018-002**	
Description: **MW-103**		Matrix: **Aqueous**	
Date Sampled: **08/10/2022 1335**	Project Name: **TAMP**		
Date Received: **08/11/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	08/17/2022 1611	JM1		51425

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Ethane	74-84-0	RSK - 175	5.0	U	10	5.0	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	5.0	U	10	5.0	2.5	ug/L	1
Methane	**74-82-8**	**RSK - 175**	**4.4**	**BJ**	**10**	5.0	**2.5**	**ug/L**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH11018-002**	
Description: **MW-103**		Matrix: **Aqueous**	
Date Sampled: **08/10/2022 1335**	Project Name: **TAMP**		
Date Received: **08/11/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	09/01/2022 0140	BNW	08/15/2022 0850	50907
1		7470A	1	08/13/2022 1826	MRW2	08/13/2022 1352	51007

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**47**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	**7440-43-9**	**6020B**	**0.58**		**0.50**	0.25	**0.13**	**ug/L**	**1**
Chromium	**7440-47-3**	**6020B**	**2.5**	**J**	**5.0**	2.5	**1.3**	**ug/L**	**1**
Lead	7439-92-1	6020B	0.50	U	1.0	0.50	0.25	ug/L	1
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Inorganic non-metals

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH11018-003**	
Description: **MW-108**		Matrix: **Aqueous**	
Date Sampled: **08/10/2022 1305**	Project Name: **TAMP**		
Date Received: **08/11/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(TOC) SM 5310C-2011	1	08/29/2022 2214	CMM		52525

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
TOC		**SM 5310C-2011**	**3100**		**2000**	1500	**600**	**ug/L**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11018-003**

Description: **MW-108** Matrix: **Aqueous**

Date Sampled: **08/10/2022 1305** Project Name: **TAMP**

Date Received: **08/11/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	5	08/17/2022 1807	JWO		51429
2	5030B	8260D	5	08/20/2022 0451	SDC		51741

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	50	U	100	50	25	ug/L	1
Benzene	**71-43-2**	**8260D**	**4.4**	**J**	**5.0**	4.0	**2.0**	**ug/L**	**1**
Bromodichloromethane	75-27-4	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Bromoform	75-25-2	8260D	4.0	US	5.0	4.0	2.0	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	4.0	U	10	4.0	2.0	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	20	U	50	20	10	ug/L	1
Carbon disulfide	75-15-0	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Carbon tetrachloride	56-23-5	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Chlorobenzene	108-90-7	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Chloroethane	75-00-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Chloroform	67-66-3	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	5.0	U	10	5.0	2.5	ug/L	1
Cyclohexane	110-82-7	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Dibromochloromethane	124-48-1	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	6.0	U	10	6.0	3.0	ug/L	1
1,1-Dichloroethane	**75-34-3**	**8260D**	**8.1**		**5.0**	4.0	**2.0**	**ug/L**	**1**
1,2-Dichloroethane	107-06-2	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
1,1-Dichloroethene	**75-35-4**	**8260D**	**3.0**	**J**	**5.0**	4.0	**2.0**	**ug/L**	**1**
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**890**		**5.0**	4.0	**2.0**	**ug/L**	**1**
trans-1,2-Dichloroethene	**156-60-5**	**8260D**	**51**		**5.0**	4.0	**2.0**	**ug/L**	**1**
1,2-Dichloropropane	78-87-5	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Ethylbenzene	100-41-4	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
2-Hexanone	591-78-6	8260D	20	U	50	20	10	ug/L	1
Isopropylbenzene	98-82-8	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Methyl acetate	79-20-9	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260D**	**7.1**		**5.0**	4.0	**2.0**	**ug/L**	**1**
4-Methyl-2-pentanone	108-10-1	8260D	20	U	50	20	10	ug/L	1
Methylcyclohexane	108-87-2	8260D	4.0	U	25	4.0	2.0	ug/L	1
Methylene chloride	75-09-2	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Styrene	100-42-5	8260D	4.1	U	5.0	4.1	2.1	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Toluene	108-88-3	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	4.2	U	5.0	4.2	2.1	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	4.0	U	5.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH11018-003**	
Description: **MW-108**		Matrix: **Aqueous**	
Date Sampled: **08/10/2022 1305**	Project Name: **TAMP**		
Date Received: **08/11/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	5	08/17/2022 1807	JWO		51429
2	5030B	8260D	5	08/20/2022 0451	SDC		51741

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**67**		**5.0**	4.0	**2.0**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	4.0	U	5.0	4.0	2.0	ug/L	1
Vinyl chloride	**75-01-4**	**8260D**	**310**		**5.0**	4.0	**2.0**	**ug/L**	**2**
Xylenes (total)	1330-20-7	8260D	4.0	U	5.0	4.0	2.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		100	81-118		94	81-118
Bromofluorobenzene		92	85-114		89	85-114
Toluene-d8		108	89-112		94	89-112
Dibromofluoromethane		106	80-119		95	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11018-003**

Description: **MW-108** Matrix: **Aqueous**

Date Sampled: **08/10/2022 1305** Project Name: **TAMP**

Date Received: **08/11/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1837	CMF		50961

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	**83-32-9**	**8270E**	**0.15**	**J**	**0.20**	0.10	**0.040**	**ug/L**	**1**
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	**84-74-2**	**8270E**	**0.79**	**J**	**1.6**	1.0	**0.50**	**ug/L**	**1**
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11018-003**
Description: **MW-108** Matrix: **Aqueous**
Date Sampled: **08/10/2022 1305** Project Name: **TAMP**
Date Received: **08/11/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1837	CMF		50961

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		62	44-119
2-Fluorophenol		32	19-119
Nitrobenzene-d5		58	44-120
Phenol-d5		46	10-115
Terphenyl-d14		88	50-134
2,4,6-Tribromophenol		83	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Dissolved Gases

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11018-003**

Description: **MW-108** Matrix: **Aqueous**

Date Sampled: **08/10/2022 1305** Project Name: **TAMP**

Date Received: **08/11/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	08/17/2022 1929	JM1		51425
2		RSK - 175	5	08/18/2022 1822	BBW		51617

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Ethane	**74-84-0**	**RSK - 175**	**8.9**	**J**	**10**	5.0	**2.5**	**ug/L**	**1**
Ethene	**74-85-1**	**RSK - 175**	**140**		**10**	5.0	**2.5**	**ug/L**	**1**
Methane	**74-82-8**	**RSK - 175**	**6100**		**50**	25	**13**	**ug/L**	**2**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH11018-003**	
Description: **MW-108**		Matrix: **Aqueous**	
Date Sampled: **08/10/2022 1305**	Project Name: **TAMP**		
Date Received: **08/11/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	09/01/2022 0149	BNW	08/15/2022 0850	50907
1		7470A	1	08/13/2022 1823	MRW2	08/13/2022 1352	51007

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**110**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	7440-43-9	6020B	0.25	U	0.50	0.25	0.13	ug/L	1
Chromium	7440-47-3	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Lead	7439-92-1	6020B	0.50	U	1.0	0.50	0.25	ug/L	1
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Inorganic non-metals

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH11018-004**	
Description: **MW-11**		Matrix: **Aqueous**	
Date Sampled: **08/10/2022 1450**	Project Name: **TAMP**		
Date Received: **08/11/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(TOC) SM 5310C-2011	1	08/29/2022 2226	CMM		52525

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
TOC		**SM 5310C-2011**	**730**	**J**	**2000**	1500	**600**	**ug/L**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11018-004**
Description: **MW-11** Matrix: **Aqueous**
Date Sampled: **08/10/2022 1450** Project Name: **TAMP**
Date Received: **08/11/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	1	08/21/2022 1625	JMM2		51772

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**5.1**	**J**	**20**	10	**5.0**	**ug/L**	**2**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	2
Chloroform	**67-66-3**	**8260D**	**0.96**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	2
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**23**		**1.0**	0.80	**0.40**	**ug/L**	**2**
trans-1,2-Dichloroethene	**156-60-5**	**8260D**	**0.41**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**2**
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	2
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	2
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Tetrachloroethene	**127-18-4**	**8260D**	**11**		**1.0**	0.80	**0.40**	**ug/L**	**2**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**0.73**	**J**	**1.0**	0.84	**0.42**	**ug/L**	**2**
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	2

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH11018-004**	
Description: **MW-11**		Matrix: **Aqueous**	
Date Sampled: **08/10/2022 1450**	Project Name: **TAMP**		
Date Received: **08/11/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	1	08/21/2022 1625	JMM2		51772

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**93**		**1.0**	0.80	**0.40**	**ug/L**	**2**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		101	81-118
Bromofluorobenzene		92	85-114
Toluene-d8		100	89-112
Dibromofluoromethane		104	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11018-004**

Description: **MW-11** Matrix: **Aqueous**

Date Sampled: **08/10/2022 1450** Project Name: **TAMP**

Date Received: **08/11/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1902	CMF		50961

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	**84-74-2**	**8270E**	**0.75**	**J**	**1.6**	1.0	**0.50**	**ug/L**	**1**
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation | B = Detected in the method blank | E = Quantitation of compound exceeded the calibration range | DL = Detection Limit | Q = Surrogate failure

U = Not detected at or above the LOD | N = Recovery is out of criteria | P = The RPD between two GC columns exceeds 40% | J = Estimated result < LOQ and ≥ DL | L = LCS/LCSD failure

H = Out of holding time | W = Reported on wet weight basis | LOD = Limit of Detection | S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11018-004**
Description: **MW-11** Matrix: **Aqueous**
Date Sampled: **08/10/2022 1450** Project Name: **TAMP**
Date Received: **08/11/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1902	CMF		50961

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		54	44-119
2-Fluorophenol		30	19-119
Nitrobenzene-d5		53	44-120
Phenol-d5		40	10-115
Terphenyl-d14		84	50-134
2,4,6-Tribromophenol		69	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Dissolved Gases

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH11018-004**	
Description: **MW-11**		Matrix: **Aqueous**	
Date Sampled: **08/10/2022 1450**	Project Name: **TAMP**		
Date Received: **08/11/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	08/17/2022 1945	JM1		51425

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Ethane	74-84-0	RSK - 175	5.0	U	10	5.0	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	5.0	U	10	5.0	2.5	ug/L	1
Methane	**74-82-8**	**RSK - 175**	**56**	**B**	**10**	5.0	**2.5**	**ug/L**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11018-004**

Description: **MW-11** Matrix: **Aqueous**

Date Sampled: **08/10/2022 1450** Project Name: **TAMP**

Date Received: **08/11/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	09/01/2022 0158	BNW	08/15/2022 0850	50907
1		7470A	1	08/13/2022 1820	MRW2	08/13/2022 1352	51007

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**42**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	7440-43-9	6020B	0.25	U	0.50	0.25	0.13	ug/L	1
Chromium	**7440-47-3**	**6020B**	**79**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Lead	**7439-92-1**	**6020B**	**0.53**	**J**	**1.0**	0.50	**0.25**	**ug/L**	**1**
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11018-005**

Description: **TB-09** Matrix: **Aqueous**

Date Sampled: **08/10/2022** Project Name: **TAMP**

Date Received: **08/11/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/17/2022 1442	JWO		51429

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH11018-005**	
Description: **TB-09**		Matrix: **Aqueous**	
Date Sampled: **08/10/2022**	Project Name: **TAMP**		
Date Received: **08/11/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/17/2022 1442	JWO		51429

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		105	81-118
Bromofluorobenzene		99	85-114
Toluene-d8		102	89-112
Dibromofluoromethane		106	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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QC Summary

Inorganic non-metals - MB

Sample ID: XQ52525-001
Batch: 52525
Analytical Method: SM 5310C-2011
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
TOC	1500	U	1	2000	1500	600	ug/L	08/29/2022 2129

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCS

Sample ID: XQ52525-002
Batch: 52525
Analytical Method: SM 5310C-2011

Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
TOC	20000	20000		1	99	90-110	08/29/2022 2140

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51429-001
Batch: 51429
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	08/17/2022 1100
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	08/17/2022 1100
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	08/17/2022 1100
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	08/17/2022 1100
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	08/17/2022 1100
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	08/17/2022 1100
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	08/17/2022 1100
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	08/17/2022 1100
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	08/17/2022 1100
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	08/17/2022 1100
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	08/17/2022 1100
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51429-001
Batch: 51429
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		103	81-118
Bromofluorobenzene		102	85-114
Toluene-d8		110	89-112
Dibromofluoromethane		104	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51429-002
Batch: 51429
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	95		1	95	39-160	08/17/2022 0927
Benzene	50	55		1	110	79-120	08/17/2022 0927
Bromodichloromethane	50	55		1	110	79-125	08/17/2022 0927
Bromoform	50	46		1	91	66-130	08/17/2022 0927
Bromomethane (Methyl bromide)	50	49		1	98	53-141	08/17/2022 0927
2-Butanone (MEK)	100	110		1	106	56-143	08/17/2022 0927
Carbon disulfide	50	48		1	96	64-133	08/17/2022 0927
Carbon tetrachloride	50	55		1	110	72-136	08/17/2022 0927
Chlorobenzene	50	52		1	105	82-118	08/17/2022 0927
Chloroethane	50	48		1	95	60-138	08/17/2022 0927
Chloroform	50	52		1	103	79-124	08/17/2022 0927
Chloromethane (Methyl chloride)	50	58		1	117	50-139	08/17/2022 0927
Cyclohexane	50	57		1	113	71-130	08/17/2022 0927
1,2-Dibromo-3-chloropropane (DBCP)	50	60		1	120	62-128	08/17/2022 0927
Dibromochloromethane	50	55		1	110	74-126	08/17/2022 0927
1,2-Dibromoethane (EDB)	50	54		1	109	77-121	08/17/2022 0927
1,2-Dichlorobenzene	50	51		1	103	80-119	08/17/2022 0927
1,3-Dichlorobenzene	50	51		1	103	80-119	08/17/2022 0927
1,4-Dichlorobenzene	50	50		1	100	79-118	08/17/2022 0927
Dichlorodifluoromethane	50	57		1	114	32-152	08/17/2022 0927
1,1-Dichloroethane	50	50		1	101	77-125	08/17/2022 0927
1,2-Dichloroethane	50	51		1	101	73-128	08/17/2022 0927
1,1-Dichloroethene	50	43		1	86	71-131	08/17/2022 0927
cis-1,2-Dichloroethene	50	53		1	107	78-123	08/17/2022 0927
trans-1,2-Dichloroethene	50	48		1	97	75-124	08/17/2022 0927
1,2-Dichloropropane	50	56		1	112	78-122	08/17/2022 0927
cis-1,3-Dichloropropene	50	51		1	103	75-124	08/17/2022 0927
trans-1,3-Dichloropropene	50	50		1	100	73-127	08/17/2022 0927
Ethylbenzene	50	55		1	110	79-121	08/17/2022 0927
2-Hexanone	100	100		1	104	57-139	08/17/2022 0927
Isopropylbenzene	50	48		1	96	72-131	08/17/2022 0927
Methyl acetate	50	48		1	96	56-136	08/17/2022 0927
Methyl tertiary butyl ether (MTBE)	50	51		1	103	71-124	08/17/2022 0927
4-Methyl-2-pentanone	100	110		1	106	67-130	08/17/2022 0927
Methylcyclohexane	50	56		1	112	72-132	08/17/2022 0927
Methylene chloride	50	43		1	87	74-124	08/17/2022 0927
Styrene	50	49		1	98	78-123	08/17/2022 0927
1,1,2,2-Tetrachloroethane	50	58		1	116	71-121	08/17/2022 0927
Tetrachloroethene	50	56		1	112	74-129	08/17/2022 0927
Toluene	50	56		1	113	80-121	08/17/2022 0927
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	47		1	93	70-136	08/17/2022 0927
1,2,4-Trichlorobenzene	50	53		1	107	69-130	08/17/2022 0927
1,1,1-Trichloroethane	50	53		1	107	74-131	08/17/2022 0927
1,1,2-Trichloroethane	50	56		1	112	80-119	08/17/2022 0927

LOQ = Limit of Quantitation
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LOD = Limit of Detection

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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51429-002
Batch: 51429
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	54		1	108	79-123	08/17/2022 0927
Trichlorofluoromethane	50	44		1	88	65-141	08/17/2022 0927
Vinyl chloride	50	60		1	121	58-137	08/17/2022 0927
Xylenes (total)	100	100		1	105	79-121	08/17/2022 0927

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		100	81-118
Bromofluorobenzene		102	85-114
Toluene-d8		106	89-112
Dibromofluoromethane		100	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MS

Sample ID: XH11018-003MS
Batch: 51429
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	ND	500	470		5	93	39-160	08/17/2022 1915
Benzene	4.4	250	290		5	115	79-120	08/17/2022 1915
Bromodichloromethane	ND	250	280		5	110	79-125	08/17/2022 1915
Bromoform	ND	250	160	N	5	65	66-130	08/17/2022 1915
Bromomethane (Methyl bromide)	ND	250	240		5	96	53-141	08/17/2022 1915
2-Butanone (MEK)	ND	500	540		5	109	56-143	08/17/2022 1915
Carbon disulfide	ND	250	290		5	117	64-133	08/17/2022 1915
Carbon tetrachloride	ND	250	290		5	115	72-136	08/17/2022 1915
Chlorobenzene	ND	250	250		5	100	82-118	08/17/2022 1915
Chloroethane	ND	250	240		5	97	60-138	08/17/2022 1915
Chloroform	ND	250	290		5	114	79-124	08/17/2022 1915
Chloromethane (Methyl chloride)	ND	250	290		5	115	50-139	08/17/2022 1915
Cyclohexane	ND	250	320		5	127	71-130	08/17/2022 1915
1,2-Dibromo-3-chloropropane (DBCP)	ND	250	250		5	100	62-128	08/17/2022 1915
Dibromochloromethane	ND	250	220		5	88	74-126	08/17/2022 1915
1,2-Dibromoethane (EDB)	ND	250	230		5	91	77-121	08/17/2022 1915
1,2-Dichlorobenzene	ND	250	240		5	96	80-119	08/17/2022 1915
1,3-Dichlorobenzene	ND	250	250		5	99	80-119	08/17/2022 1915
1,4-Dichlorobenzene	ND	250	250		5	99	79-118	08/17/2022 1915
Dichlorodifluoromethane	ND	250	290		5	117	32-152	08/17/2022 1915
1,1-Dichloroethane	8.1	250	300		5	116	77-125	08/17/2022 1915
1,2-Dichloroethane	ND	250	270		5	108	73-128	08/17/2022 1915
1,1-Dichloroethene	3.0	250	290		5	113	71-131	08/17/2022 1915
cis-1,2-Dichloroethene	890	250	1200	E	5	105	78-123	08/17/2022 1915
trans-1,2-Dichloroethene	51	250	340		5	116	75-124	08/17/2022 1915
1,2-Dichloropropane	ND	250	280		5	111	78-122	08/17/2022 1915
cis-1,3-Dichloropropene	ND	250	250		5	100	75-124	08/17/2022 1915
trans-1,3-Dichloropropene	ND	250	220		5	87	73-127	08/17/2022 1915
Ethylbenzene	ND	250	300		5	120	79-121	08/17/2022 1915
2-Hexanone	ND	500	480		5	96	57-139	08/17/2022 1915
Isopropylbenzene	ND	250	210		5	85	72-131	08/17/2022 1915
Methyl acetate	ND	250	260		5	104	56-136	08/17/2022 1915
Methyl tertiary butyl ether (MTBE)	7.1	250	280		5	107	71-124	08/17/2022 1915
4-Methyl-2-pentanone	ND	500	500		5	100	67-130	08/17/2022 1915
Methylcyclohexane	ND	250	300		5	120	72-132	08/17/2022 1915
Methylene chloride	ND	250	260		5	104	74-124	08/17/2022 1915
Styrene	ND	250	240		5	95	78-123	08/17/2022 1915
1,1,2,2-Tetrachloroethane	ND	250	230		5	93	71-121	08/17/2022 1915
Tetrachloroethene	ND	250	240		5	94	74-129	08/17/2022 1915
Toluene	ND	250	250		5	101	80-121	08/17/2022 1915
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	250	300		5	121	70-136	08/17/2022 1915
1,2,4-Trichlorobenzene	ND	250	240		5	98	69-130	08/17/2022 1915
1,1,1-Trichloroethane	ND	250	290		5	118	74-131	08/17/2022 1915
1,1,2-Trichloroethane	ND	250	240		5	97	80-119	08/17/2022 1915

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MS

Sample ID: XH11018-003MS
Batch: 51429
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	67	250	330		5	103	79-123	08/17/2022 1915
Trichlorofluoromethane	ND	250	230		5	91	65-141	08/17/2022 1915
Vinyl chloride	370	250	700		5	133	58-137	08/17/2022 1915
Xylenes (total)	ND	500	540		5	107	79-121	08/17/2022 1915

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4	N	76	81-118
Bromofluorobenzene		89	85-114
Toluene-d8	N	76	89-112
Dibromofluoromethane		80	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XH11018-003MD
Batch: 51429
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acetone	ND	500	470		5	93	0.27	39-160	20	08/17/2022 1938
Benzene	4.4	250	270		5	107	7.0	79-120	20	08/17/2022 1938
Bromodichloromethane	ND	250	260		5	103	6.7	79-125	20	08/17/2022 1938
Bromoform	ND	250	170		5	67	2.2	66-130	20	08/17/2022 1938
Bromomethane (Methyl bromide)	ND	250	210		5	85	12	53-141	20	08/17/2022 1938
2-Butanone (MEK)	ND	500	540		5	108	0.77	56-143	20	08/17/2022 1938
Carbon disulfide	ND	250	270		5	107	9.2	64-133	20	08/17/2022 1938
Carbon tetrachloride	ND	250	280		5	111	3.6	72-136	20	08/17/2022 1938
Chlorobenzene	ND	250	250		5	98	2.1	82-118	20	08/17/2022 1938
Chloroethane	ND	250	210		5	84	14	60-138	20	08/17/2022 1938
Chloroform	ND	250	260		5	106	7.4	79-124	20	08/17/2022 1938
Chloromethane (Methyl chloride)	ND	250	250		5	99	14	50-139	20	08/17/2022 1938
Cyclohexane	ND	250	290		5	117	8.5	71-130	20	08/17/2022 1938
1,2-Dibromo-3-chloropropane (DBCP)	ND	250	270		5	107	6.9	62-128	20	08/17/2022 1938
Dibromochloromethane	ND	250	230		5	92	5.3	74-126	20	08/17/2022 1938
1,2-Dibromoethane (EDB)	ND	250	250		5	99	8.3	77-121	20	08/17/2022 1938
1,2-Dichlorobenzene	ND	250	240		5	97	0.51	80-119	20	08/17/2022 1938
1,3-Dichlorobenzene	ND	250	240		5	94	5.2	80-119	20	08/17/2022 1938
1,4-Dichlorobenzene	ND	250	230		5	93	5.9	79-118	20	08/17/2022 1938
Dichlorodifluoromethane	ND	250	230	+	5	93	23	32-152	20	08/17/2022 1938
1,1-Dichloroethane	8.1	250	280		5	107	8.1	77-125	20	08/17/2022 1938
1,2-Dichloroethane	ND	250	260		5	102	5.0	73-128	20	08/17/2022 1938
1,1-Dichloroethene	3.0	250	260		5	104	7.9	71-131	20	08/17/2022 1938
cis-1,2-Dichloroethene	890	250	1100	E	5	96	2.1	78-123	20	08/17/2022 1938
trans-1,2-Dichloroethene	51	250	320		5	107	7.2	75-124	20	08/17/2022 1938
1,2-Dichloropropane	ND	250	270		5	107	4.5	78-122	20	08/17/2022 1938
cis-1,3-Dichloropropene	ND	250	270		5	107	6.9	75-124	20	08/17/2022 1938
trans-1,3-Dichloropropene	ND	250	230		5	92	5.6	73-127	20	08/17/2022 1938
Ethylbenzene	ND	250	270		5	106	12	79-121	20	08/17/2022 1938
2-Hexanone	ND	500	500		5	101	5.5	57-139	20	08/17/2022 1938
Isopropylbenzene	ND	250	230		5	92	7.2	72-131	20	08/17/2022 1938
Methyl acetate	ND	250	200	+	5	80	26	56-136	20	08/17/2022 1938
Methyl tertiary butyl ether (MTBE)	7.1	250	270		5	106	1.5	71-124	20	08/17/2022 1938
4-Methyl-2-pentanone	ND	500	520		5	104	4.0	67-130	20	08/17/2022 1938
Methylcyclohexane	ND	250	280		5	113	6.7	72-132	20	08/17/2022 1938
Methylene chloride	ND	250	240		5	97	7.1	74-124	20	08/17/2022 1938
Styrene	ND	250	230		5	94	1.3	78-123	20	08/17/2022 1938
1,1,2,2-Tetrachloroethane	ND	250	270		5	109	15	71-121	20	08/17/2022 1938
Tetrachloroethene	ND	250	250		5	99	4.8	74-129	20	08/17/2022 1938
Toluene	ND	250	280		5	114	11	80-121	20	08/17/2022 1938
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	250	280		5	111	8.9	70-136	20	08/17/2022 1938
1,2,4-Trichlorobenzene	ND	250	220		5	90	8.6	69-130	20	08/17/2022 1938
1,1,1-Trichloroethane	ND	250	280		5	112	4.9	74-131	20	08/17/2022 1938
1,1,2-Trichloroethane	ND	250	260		5	103	5.9	80-119	20	08/17/2022 1938

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XH11018-003MD
Batch: 51429
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Trichloroethene	67	250	310		5	97	5.0	79-123	20	08/17/2022 1938
Trichlorofluoromethane	ND	250	200		5	78	15	65-141	20	08/17/2022 1938
Vinyl chloride	370	250	640		5	111	8.2	58-137	20	08/17/2022 1938
Xylenes (total)	ND	500	500		5	99	7.8	79-121	20	08/17/2022 1938

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4	N	76	81-118
Bromofluorobenzene		101	85-114
Toluene-d8		100	89-112
Dibromofluoromethane		80	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51741-001
Batch: 51741
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 2216

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		102	81-118
Bromofluorobenzene		96	85-114
Toluene-d8		103	89-112
Dibromofluoromethane		103	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51741-002
Batch: 51741
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Vinyl chloride	50	51		1	101	58-137	08/19/2022 2108

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		98	81-118
Bromofluorobenzene		97	85-114
Toluene-d8		102	89-112
Dibromofluoromethane		99	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MS

Sample ID: XH11018-003MS
Batch: 51741
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Vinyl chloride	310	250	580		5	108	58-137	08/20/2022 0515

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		100	81-118
Bromofluorobenzene		102	85-114
Toluene-d8		109	89-112
Dibromofluoromethane		103	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XH11018-003MD
Batch: 51741
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Vinyl chloride	310	250	540		5	92	7.2	58-137	20	08/20/2022 0540

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		98	81-118
Bromofluorobenzene		102	85-114
Toluene-d8		109	89-112
Dibromofluoromethane		102	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51772-001
Batch: 51772
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	08/21/2022 1225
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	08/21/2022 1225
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	08/21/2022 1225
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	08/21/2022 1225
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	08/21/2022 1225
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	08/21/2022 1225
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	08/21/2022 1225
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	08/21/2022 1225
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	08/21/2022 1225
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	08/21/2022 1225
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	08/21/2022 1225
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225

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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51772-001
Batch: 51772
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		97	81-118
Bromofluorobenzene		93	85-114
Toluene-d8		101	89-112
Dibromofluoromethane		100	80-119

LOQ = Limit of Quantitation
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LOD = Limit of Detection

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N = Recovery is out of criteria
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+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51772-002
Batch: 51772
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	110		1	113	39-160	08/21/2022 1119
Benzene	50	49		1	98	79-120	08/21/2022 1119
Bromodichloromethane	50	49		1	99	79-125	08/21/2022 1119
Bromoform	50	52		1	104	66-130	08/21/2022 1119
Bromomethane (Methyl bromide)	50	46		1	93	53-141	08/21/2022 1119
2-Butanone (MEK)	100	96		1	96	56-143	08/21/2022 1119
Carbon disulfide	50	48		1	97	64-133	08/21/2022 1119
Carbon tetrachloride	50	47		1	94	72-136	08/21/2022 1119
Chlorobenzene	50	50		1	99	82-118	08/21/2022 1119
Chloroethane	50	48		1	97	60-138	08/21/2022 1119
Chloroform	50	47		1	94	79-124	08/21/2022 1119
Chloromethane (Methyl chloride)	50	49		1	98	50-139	08/21/2022 1119
Cyclohexane	50	49		1	99	71-130	08/21/2022 1119
1,2-Dibromo-3-chloropropane (DBCP)	50	56		1	111	62-128	08/21/2022 1119
Dibromochloromethane	50	54		1	107	74-126	08/21/2022 1119
1,2-Dibromoethane (EDB)	50	51		1	101	77-121	08/21/2022 1119
1,2-Dichlorobenzene	50	51		1	102	80-119	08/21/2022 1119
1,3-Dichlorobenzene	50	51		1	102	80-119	08/21/2022 1119
1,4-Dichlorobenzene	50	48		1	96	79-118	08/21/2022 1119
Dichlorodifluoromethane	50	55		1	109	32-152	08/21/2022 1119
1,1-Dichloroethane	50	49		1	98	77-125	08/21/2022 1119
1,2-Dichloroethane	50	48		1	97	73-128	08/21/2022 1119
1,1-Dichloroethene	50	49		1	97	71-131	08/21/2022 1119
cis-1,2-Dichloroethene	50	49		1	97	78-123	08/21/2022 1119
trans-1,2-Dichloroethene	50	48		1	96	75-124	08/21/2022 1119
1,2-Dichloropropane	50	50		1	100	78-122	08/21/2022 1119
cis-1,3-Dichloropropene	50	54		1	107	75-124	08/21/2022 1119
trans-1,3-Dichloropropene	50	55		1	111	73-127	08/21/2022 1119
Ethylbenzene	50	52		1	103	79-121	08/21/2022 1119
2-Hexanone	100	99		1	99	57-139	08/21/2022 1119
Isopropylbenzene	50	56		1	112	72-131	08/21/2022 1119
Methyl acetate	50	54		1	108	56-136	08/21/2022 1119
Methyl tertiary butyl ether (MTBE)	50	54		1	108	71-124	08/21/2022 1119
4-Methyl-2-pentanone	100	99		1	99	67-130	08/21/2022 1119
Methylcyclohexane	50	51		1	102	72-132	08/21/2022 1119
Methylene chloride	50	48		1	95	74-124	08/21/2022 1119
Styrene	50	56		1	112	78-123	08/21/2022 1119
1,1,2,2-Tetrachloroethane	50	52		1	104	71-121	08/21/2022 1119
Tetrachloroethene	50	50		1	101	74-129	08/21/2022 1119
Toluene	50	54		1	107	80-121	08/21/2022 1119
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	48		1	97	70-136	08/21/2022 1119
1,2,4-Trichlorobenzene	50	49		1	99	69-130	08/21/2022 1119
1,1,1-Trichloroethane	50	48		1	95	74-131	08/21/2022 1119
1,1,2-Trichloroethane	50	51		1	101	80-119	08/21/2022 1119

LOQ = Limit of Quantitation
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P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51772-002
Batch: 51772
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	46		1	93	79-123	08/21/2022 1119
Trichlorofluoromethane	50	49		1	98	65-141	08/21/2022 1119
Vinyl chloride	50	51		1	101	58-137	08/21/2022 1119
Xylenes (total)	100	110		1	109	79-121	08/21/2022 1119

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		91	81-118
Bromofluorobenzene		96	85-114
Toluene-d8		100	89-112
Dibromofluoromethane		93	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ50961-001
Batch: 50961
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 12/30/1899 0000

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acenaphthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Acenaphthylene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Acetophenone	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Atrazine	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Benzaldehyde	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Benzo(a)anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Benzo(a)pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Benzo(b)fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Benzo(g,h,i)perylene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Benzo(k)fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
1,1'-Biphenyl	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
4-Bromophenyl phenyl ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Butyl benzyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Caprolactam	2.0	U	1	3.0	2.0	1.0	ug/L	08/17/2022 1049
Carbazole	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
bis (2-Chloro-1-methylethyl) ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
4-Chloro-3-methyl phenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
4-Chloroaniline	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
bis(2-Chloroethoxy)methane	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
bis(2-Chloroethyl)ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
2-Chloronaphthalene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
2-Chlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
4-Chlorophenyl phenyl ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Chrysene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Dibenzo(a,h)anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Dibenzofuran	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
3,3'-Dichlorobenzidine	3.5	U	1	4.0	3.5	1.8	ug/L	08/17/2022 1049
2,4-Dichlorophenol	0.50	U	1	1.6	0.50	0.25	ug/L	08/17/2022 1049
Diethylphthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Dimethyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
2,4-Dimethylphenol	1.5	U	1	2.0	1.5	0.62	ug/L	08/17/2022 1049
Di-n-butyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
4,6-Dinitro-2-methylphenol	2.0	U	1	4.0	2.0	1.0	ug/L	08/17/2022 1049
2,4-Dinitrophenol	2.0	U	1	4.0	2.0	1.0	ug/L	08/17/2022 1049
2,4-Dinitrotoluene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
2,6-Dinitrotoluene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Di-n-octylphthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
bis(2-Ethylhexyl)phthalate	3.0	U	1	4.0	3.0	1.5	ug/L	08/17/2022 1049
Fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Fluorene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Hexachlorobenzene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Hexachlorobutadiene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Hexachlorocyclopentadiene	4.0	U	1	4.0	4.0	2.0	ug/L	08/17/2022 1049

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ50961-001
Batch: 50961
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 12/30/1899 0000

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Hexachloroethane	0.40	U	1	0.80	0.40	0.17	ug/L	08/17/2022 1049
Indeno(1,2,3-c,d)pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Isophorone	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
2-Methylnaphthalene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
2-Methylphenol	1.3	U	1	1.6	1.3	0.67	ug/L	08/17/2022 1049
3+4-Methylphenol	3.0	U	1	4.0	3.0	1.5	ug/L	08/17/2022 1049
Naphthalene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
2-Nitroaniline	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
3-Nitroaniline	2.0	U	1	3.0	2.0	1.0	ug/L	08/17/2022 1049
4-Nitroaniline	3.0	U	1	4.0	3.0	1.5	ug/L	08/17/2022 1049
Nitrobenzene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
2-Nitrophenol	2.0	U	1	3.2	2.0	1.0	ug/L	08/17/2022 1049
4-Nitrophenol	4.0	U	1	5.0	4.0	2.0	ug/L	08/17/2022 1049
N-Nitrosodi-n-propylamine	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
N-Nitrosodiphenylamine (Diphenylamine)	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Pentachlorophenol	4.0	U	1	5.0	4.0	2.0	ug/L	08/17/2022 1049
Phenanthrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Phenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
2,4,5-Trichlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
2,4,6-Trichlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		84	44-119
2-Fluorophenol		46	19-119
Nitrobenzene-d5		81	44-120
Phenol-d5		58	10-115
Terphenyl-d14		101	50-134
2,4,6-Tribromophenol		86	43-140

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ50961-002
Batch: 50961
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 12/30/1899 0000

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acenaphthene	8.0	6.2		1	77	47-122	08/17/2022 1114
Acenaphthylene	8.0	6.8		1	85	41-130	08/17/2022 1114
Acetophenone	8.0	6.7		1	83	46-118	08/17/2022 1114
Anthracene	8.0	6.9		1	87	57-123	08/17/2022 1114
Atrazine	8.0	7.3		1	91	44-142	08/17/2022 1114
Benzaldehyde	8.0	6.2		1	78	20-115	08/17/2022 1114
Benzo(a)anthracene	8.0	7.3		1	91	58-125	08/17/2022 1114
Benzo(a)pyrene	8.0	7.1		1	88	54-128	08/17/2022 1114
Benzo(b)fluoranthene	8.0	7.3		1	91	53-131	08/17/2022 1114
Benzo(g,h,i)perylene	8.0	8.2		1	103	50-134	08/17/2022 1114
Benzo(k)fluoranthene	8.0	7.1		1	89	57-129	08/17/2022 1114
1,1'-Biphenyl	8.0	6.0		1	75	49-115	08/17/2022 1114
4-Bromophenyl phenyl ether	8.0	6.9		1	86	55-124	08/17/2022 1114
Butyl benzyl phthalate	8.0	8.4		1	105	53-134	08/17/2022 1114
Caprolactam	8.0	7.6		1	95	44-152	08/17/2022 1114
Carbazole	8.0	7.5		1	94	60-122	08/17/2022 1114
bis (2-Chloro-1-methylethyl) ether	8.0	7.3		1	91	37-130	08/17/2022 1114
4-Chloro-3-methyl phenol	8.0	6.6		1	83	52-119	08/17/2022 1114
4-Chloroaniline	8.0	6.1		1	77	33-117	08/17/2022 1114
bis(2-Chloroethoxy)methane	8.0	6.2		1	78	48-120	08/17/2022 1114
bis(2-Chloroethyl)ether	8.0	7.0		1	87	43-118	08/17/2022 1114
2-Chloronaphthalene	8.0	6.1		1	76	40-116	08/17/2022 1114
2-Chlorophenol	8.0	6.7		1	84	38-117	08/17/2022 1114
4-Chlorophenyl phenyl ether	8.0	6.7		1	83	53-121	08/17/2022 1114
Chrysene	8.0	6.9		1	87	59-123	08/17/2022 1114
Dibenzo(a,h)anthracene	8.0	7.8		1	97	51-134	08/17/2022 1114
Dibenzofuran	8.0	6.0		1	74	53-118	08/17/2022 1114
3,3'-Dichlorobenzidine	8.0	4.8		1	60	27-129	08/17/2022 1114
2,4-Dichlorophenol	8.0	6.2		1	77	47-121	08/17/2022 1114
Diethylphthalate	8.0	7.2		1	90	56-125	08/17/2022 1114
Dimethyl phthalate	8.0	7.0		1	88	45-127	08/17/2022 1114
2,4-Dimethylphenol	8.0	6.2		1	78	31-124	08/17/2022 1114
Di-n-butyl phthalate	8.0	7.9		1	98	59-127	08/17/2022 1114
4,6-Dinitro-2-methylphenol	8.0	5.3		1	66	44-137	08/17/2022 1114
2,4-Dinitrophenol	16	4.6		1	28	23-143	08/17/2022 1114
2,4-Dinitrotoluene	8.0	6.9		1	86	57-128	08/17/2022 1114
2,6-Dinitrotoluene	8.0	6.5		1	82	57-124	08/17/2022 1114
Di-n-octylphthalate	8.0	7.4		1	92	51-140	08/17/2022 1114
bis(2-Ethylhexyl)phthalate	8.0	9.6		1	119	55-135	08/17/2022 1114
Fluoranthene	8.0	7.3		1	91	57-128	08/17/2022 1114
Fluorene	8.0	6.4		1	80	52-124	08/17/2022 1114
Hexachlorobenzene	8.0	6.5		1	81	53-125	08/17/2022 1114
Hexachlorobutadiene	8.0	5.3		1	66	22-124	08/17/2022 1114
Hexachlorocyclopentadiene	40	20		1	50	16-96	08/17/2022 1114

LOQ = Limit of Quantitation
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LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ50961-002
Batch: 50961
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 12/30/1899 0000

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Hexachloroethane	8.0	5.5		1	69	21-115	08/17/2022 1114
Indeno(1,2,3-c,d)pyrene	8.0	7.7		1	96	52-134	08/17/2022 1114
Isophorone	8.0	5.9		1	73	42-124	08/17/2022 1114
2-Methylnaphthalene	8.0	6.0		1	75	40-121	08/17/2022 1114
2-Methylphenol	8.0	7.1		1	89	30-117	08/17/2022 1114
3+4-Methylphenol	8.0	7.0		1	88	29-110	08/17/2022 1114
Naphthalene	8.0	6.1		1	77	40-121	08/17/2022 1114
2-Nitroaniline	8.0	7.5		1	93	55-127	08/17/2022 1114
3-Nitroaniline	8.0	5.7		1	71	41-128	08/17/2022 1114
4-Nitroaniline	8.0	6.7		1	83	30-135	08/17/2022 1114
Nitrobenzene	8.0	5.2		1	65	45-121	08/17/2022 1114
2-Nitrophenol	8.0	6.1		1	77	47-123	08/17/2022 1114
4-Nitrophenol	16	14		1	86	53-130	08/17/2022 1114
N-Nitrosodi-n-propylamine	8.0	7.1		1	89	49-119	08/17/2022 1114
N-Nitrosodiphenylamine (Diphenylamine)	8.0	7.8		1	97	51-123	08/17/2022 1114
Pentachlorophenol	16	9.9		1	62	35-138	08/17/2022 1114
Phenanthrene	8.0	6.8		1	84	59-120	08/17/2022 1114
Phenol	8.0	7.1		1	88	49-117	08/17/2022 1114
Pyrene	8.0	7.1		1	89	57-126	08/17/2022 1114
2,4,5-Trichlorophenol	8.0	6.4		1	81	53-123	08/17/2022 1114
2,4,6-Trichlorophenol	8.0	6.7		1	84	50-125	08/17/2022 1114

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		75	44-119
2-Fluorophenol		72	19-119
Nitrobenzene-d5		76	44-120
Phenol-d5		79	10-115
Terphenyl-d14		86	50-134
2,4,6-Tribromophenol		89	43-140

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Dissolved Gases - MB

Sample ID: XQ51425-001
Batch: 51425
Analytical Method: RSK - 175
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Ethane	5.0	U	1	10	5.0	2.5	ug/L	08/17/2022 1458
Ethene	5.0	U	1	10	5.0	2.5	ug/L	08/17/2022 1458
Methane	**3.1**	**J**	**1**	**10**	5.0	**2.5**	**ug/L**	**08/17/2022 1458**

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Dissolved Gases - LCS

Sample ID: XQ51425-002
Batch: 51425
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Ethane	550	550		1	99	74-131	08/17/2022 1252
Ethene	520	510		1	100	72-133	08/17/2022 1252
Methane	300	310		1	105	73-125	08/17/2022 1252

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Dissolved Gases - LCSD

Sample ID: XQ51425-003
Batch: 51425
Analytical Method: RSK - 175
Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Ethane	550	540		1	98	0.90	74-131	30	08/17/2022 1306
Ethene	520	510		1	99	0.71	72-133	30	08/17/2022 1306
Methane	300	310		1	106	0.90	73-125	30	08/17/2022 1306

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Dissolved Gases - MB

Sample ID: XQ51617-001
Batch: 51617
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Methane	5.0	U	1	10	5.0	2.5	ug/L	08/18/2022 1555

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Dissolved Gases - LCS

Sample ID: XQ51617-002
Batch: 51617
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Methane	300	300		1	101	73-125	08/18/2022 1505

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Dissolved Gases - LCSD

Sample ID: XQ51617-003
Batch: 51617
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Methane	300	370		1	124	21	73-125	30	08/18/2022 1519

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MB

Sample ID: XQ50905-001
Batch: 50905
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 08/15/2022 0840

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Arsenic	2.5	U	1	5.0	2.5	1.3	ug/L	08/23/2022 0215
Barium	2.5	U	1	5.0	2.5	1.3	ug/L	08/23/2022 0215
Cadmium	0.25	U	1	0.50	0.25	0.13	ug/L	08/23/2022 0215
Chromium	2.5	U	1	5.0	2.5	1.3	ug/L	08/23/2022 0215
Lead	0.50	U	1	1.0	0.50	0.25	ug/L	08/23/2022 0215
Selenium	2.5	U	1	5.0	2.5	1.3	ug/L	08/23/2022 0215
Silver	0.50	U	1	1.0	0.50	0.25	ug/L	08/23/2022 0215

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - LCS

Sample ID: XQ50905-002
Batch: 50905
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 08/15/2022 0840

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Arsenic	100	100		1	101	84-116	08/23/2022 0223
Barium	100	100		1	103	86-114	08/23/2022 0223
Cadmium	100	96		1	96	87-115	08/23/2022 0223
Chromium	100	110		1	108	85-116	08/23/2022 0223
Lead	100	110		1	106	88-115	08/23/2022 0223
Selenium	100	86		1	86	80-120	08/31/2022 1947
Silver	100	110		1	110	85-116	08/31/2022 1947

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MB

Sample ID: XQ50907-001
Batch: 50907
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 08/15/2022 0850

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Arsenic	2.5	U	1	5.0	2.5	1.3	ug/L	09/01/2022 0123
Barium	2.5	U	1	5.0	2.5	1.3	ug/L	09/01/2022 0123
Cadmium	0.25	U	1	0.50	0.25	0.13	ug/L	09/01/2022 0123
Chromium	2.5	U	1	5.0	2.5	1.3	ug/L	09/01/2022 0123
Lead	0.50	U	1	1.0	0.50	0.25	ug/L	09/01/2022 0123
Selenium	2.5	U	1	5.0	2.5	1.3	ug/L	09/01/2022 0123
Silver	0.50	U	1	1.0	0.50	0.25	ug/L	09/01/2022 0123

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - LCS

Sample ID: XQ50907-002
Batch: 50907
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 08/15/2022 0850

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Arsenic	100	100		1	101	84-116	09/01/2022 0132
Barium	100	100		1	102	86-114	09/01/2022 0132
Cadmium	100	99		1	99	87-115	09/01/2022 0132
Chromium	100	110		1	110	85-116	09/01/2022 0132
Lead	100	110		1	109	88-115	09/01/2022 0132
Selenium	100	86		1	86	80-120	09/01/2022 0132
Silver	100	110		1	112	85-116	09/01/2022 0132

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MB

Sample ID: XQ51007-001
Batch: 51007
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 08/13/2022 1352

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Mercury	0.18	U	1	0.20	0.18	0.091	ug/L	08/13/2022 1721

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - LCS

Sample ID: XQ51007-002
Batch: 51007
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 08/13/2022 1352

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Mercury	2.0	2.0		1	102	82-119	08/13/2022 1724

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Chain of Custody
and
Miscellaneous Documents

Pace Analytical®

PACE ANALYTICAL SERVICES, LLC
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.pacelabs.com

Number 137981

Client: Terrason Consultants	Report to Contact: Ethan.Dinwiddie@Terrason.com	Telephone No. / E-mail: Dan.McJane@Terrason.com	Quote No.: 25322
Address: 2401 Brentwood Rd. Suite 107	Sampler's Signature: X [signature]	Analysis (Attach list if more space is needed)	Page 1 of 1
City: Raleigh; State: NC; Zip Code: 27604	Printed Name: Ethan Dinwiddie		XH11018
Project Name: TAMP			CSO
Project No.: 7021P145	P.O. No.:		

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	Sample Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	No of Containers by Preservative Type: Liquids	HNO3	HNO3	HCl	NaOH	2000 Kit	Field Filtered	VOCs 8260	SVOCs 8270	RCRA 8 Metals	TOC 9060	Dissolved Gases Rsk-175					Remarks / Cooler I.D.
~~MW-139~~ MW-112	~~8/10~~ 8/9	1715	G	X			2	1	1	5				X	X	X	X	X					
~~MW-141~~ MW-103	8/10	1335	G	X			2		1	6				X	X	X	X	X					TOC in HCl bottle
~~MW-120~~ MW-108	8/10	~~1306~~ 1305	G	X			2	1	1	5				X	X	X	X	X					
~~[illegible]~~ MW-11	8/10	~~—~~ 1450	G	X			2	1	1	5				X	X	X	X	X					
TB-09	8/10	—	G	X						2				X									

Turn Around Time Required (Prior lab approval required for expedited TAT.)	Sample Disposal	Possible Hazard Identification	QC Requirements (Specify)
☒ Standard ☐ Rush (Specify)	☐ Return to Client ☒ Disposal by Lab	☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☒ Unknown	

	Date	Time		Date	Time
1. Relinquished by [signature]	8/10	2000	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by Fed ex	8.11.22	1015	4. Laboratory received by [signature]	8.11.22	1015

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Circle) Yes No Ice Pack
Receipt Temp. 4.5 °C
Temp Blank ☐ Y ☒ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME003N2-01

DC#_Title: ENV-FRM-WCOL-0286 v02_Samples Receipt Checklist (SRC)
Effective Date: 8/2/2022

Sample Receipt Checklist (SRC)

Client: Tetracon Cooler Inspected by/date: CER / 08/11/2022 Lot #: XH21018

Means of receipt: [ ] Pace [ ] Client [ ] UPS [✓] FedEx [ ] Other: _____

[ ] Yes	[✓] No		1. Were custody seals present on the cooler?
[ ] Yes	[ ] No	[✓] NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: 22-1645 Chlorine Strip ID: NA Tested by: CER

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

4.5 / 4.5 °C NA / NA °C NA / NA °C NA / NA °C

Method: [ ] Temperature Blank [✓] Against Bottles IR Gun ID: 8 IR Gun Correction Factor: 0 °C

Method of coolant: [✓] Wet Ice [ ] Ice Packs [ ] Dry Ice [ ] None

[✓] Yes	[ ] No	[ ] NA	3. Were all coolers received at or below 6.0°C? If no, was Project Manager notified? PM was Notified by: phone / email / face-to-face (circle one).
[✓] Yes	[ ] No	[ ] NA	4. Is the commercial courier's packing slip attached to this form?
[✓] Yes	[ ] No		5. Were proper custody procedures (relinquished/received) followed?
[✓] Yes	[ ] No		6. Were sample IDs listed on the COC and all sample containers?
[✓] Yes	[ ] No		7. Was collection date & time listed on the COC and all sample containers?
[✓] Yes	[ ] No		8. Did all container label information (ID, date, time) agree with the COC?
[✓] Yes	[ ] No		9. Were tests to be performed listed on the COC?
[✓] Yes	[ ] No		10. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
[✓] Yes	[ ] No		11. Was adequate sample volume available?
[✓] Yes	[ ] No		12. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
[✓] Yes	[ ] No		13. Were all samples containers accounted for? (No missing/excess)
[ ] Yes	[✓] No	[ ] NA	14. Were VOA, 8015C and RSK-175 samples free of bubbles >"pea-size" (¼" or 6mm in diameter) in any of the VOA vials?
[✓] Yes	[ ] No	[ ] NA	15. Were all DRO/metals/nutrient samples received at a pH of < 2?
[ ] Yes	[ ] No	[✓] NA	16. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
[ ] Yes	[ ] No	[✓] NA	17. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
[✓] Yes	[ ] No	[ ] NA	18. Was the quote number listed on the container label? If yes, Quote # 25322

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA. ☐ Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) 002(4), 003(3), 004(2), 005(1) were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Unique ID: NA.

Comments:

Qualtrax ID: 56360 Pace® Analytical Services, LLC Page 1 of 1

Report of Analysis

Terracon Consultants, Inc.
2401 Brentwood Road
Suite 107 I
Raleigh, NC 27604
Attention: Ethan Dinwiddie

Project Name: TAMP

Project Number: 7021P145

Lot Number:**XH11019**

Date Completed:09/02/2022

09/07/2022 9:47 PM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.
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Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
Terracon Consultants, Inc.
Lot Number: XH11019

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Additionally, the DoD QSM version 5.3 has been followed for these samples. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs, the DoD QSM, or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

VOA 8260D

The continuing calibration verification (CCV) associated with sample XH11019-001 (MW-141) for Vinyl Chloride (21%) recovered above the upper control limit. The sample associated with this CCV were non-detect for the affected analytes; therefore, the data has been reported.

The closing continuing calibration verification (CCV) associated with samples: XH11019-003, XH11019-005, XH11019-006, and XH11019-007 was not analyzed at end of sequence. The MSD run at the end of the sequence was copied and processed as a 8260 closing CCV. The CCV passed acceptance criteria and the data has been reported.

XH11019-003 (MW-120) (Run 1) (Analysis Batch 51688) TCL VOCs (OLM04.3) (DOD QSM 5.4)
XH11019-005 (FB-02) (Run 1) (Analysis Batch 51688) TCL VOCs (OLM04.3) (DOD QSM 5.4)
XH11019-006 (TB-07) (Run 1) (Analysis Batch 51688) TCL VOCs (OLM04.3) (DOD QSM 5.4)
XH11019-007 (DUP-GW-01) (Run 1) (Analysis Batch 51688) TCL VOCs (OLM04.3) (DOD QSM 5.4)

The continuing calibration verification (CCV) associated with sample(s) XH11019-003, XH11019-005, XH11019-006, and XH11019-007 for analyte(s): Acetone (52.4%) recovered above the upper control limit. The samples associated with this CCV were non-detect for the affected analytes; therefore, the data has been reported.

XH11019-003 (MW-120) (Run 1) (Analysis Batch 51688) TCL VOCs (OLM04.3) (DOD QSM 5.4)
XH11019-005 (FB-02) (Run 1) (Analysis Batch 51688) TCL VOCs (OLM04.3) (DOD QSM 5.4)
XH11019-006 (TB-07) (Run 1) (Analysis Batch 51688) TCL VOCs (OLM04.3) (DOD QSM 5.4)
XH11019-007 (DUP-GW-01) (Run 1) (Analysis Batch 51688) TCL VOCs (OLM04.3) (DOD QSM 5.4)

The closing continuing calibration verification (CCV) associated with samples XH11019-005 and XH11019-006, for Trichloroethene (372%) recovered above the upper control limit. The samples associated with this CCV were non-detect for the affected analytes; therefore, the data has been reported.

XH11019-005 (FB-02) (Run 1) (Analysis Batch 51688) TCL VOCs (OLM04.3) (DOD QSM 5.4)
XH11019-006 (TB-07) (Run 1) (Analysis Batch 51688) TCL VOCs (OLM04.3) (DOD QSM 5.4)

Reanalysis of the following samples was performed outside of the analytical holding time: XH11019-005, XH11019-006, and XH11019-007. The above samples were run outside of holding time due to Bromoform and 1,2-dibromo-3-chloropropane failing low in the continuous calibration verification in run 1. Both runs have been reported.
XH11019-005 (FB-02) (Run 2) (Analysis Batch 52303) TCL VOCs (OLM04.3) (DOD QSM 5.4)
XH11019-006 (TB-07) (Run 2) (Analysis Batch 52303) TCL VOCs (OLM04.3) (DOD QSM 5.4)
XH11019-007 (DUP-GW-01) (Run 2) (Analysis Batch 52303) TCL VOCs (OLM04.3) (DOD QSM 5.4)

Reanalysis of the following samples was performed outside of the analytical holding time: XH11019-003 and XH11019-007. The above samples were run outside of holding time due to Bromoform, and 1,2-dibromo-3-chloropropane failing low in the continuous calibration verification(CCV) in run 1. They were also reanalyzed due to a high CCV for trichloroethene. Both results have been reported.

XH11019-003 (MW-120) (Run 2) (Analysis Batch 52303) TCL VOCs (OLM04.3) (DOD QSM 5.4)
XH11019-007 (DUP-GW-01) (Run 2) (Analysis Batch 52303) TCL VOCs (OLM04.3) (DOD QSM 5.4)

Dissolved Gases (RSK 175)
The method blank associated with batch 51425 had Methane detected at a concentration that was above the DL but below the LOQ. All samples associated with this method blank that have detections for Methane have been flagged with a "B".

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Sample Summary
Terracon Consultants, Inc.
Lot Number: XH11019

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	MW-141	Aqueous	08/10/2022 0845	08/11/2022
002	MW-139	Aqueous	08/10/2022 1100	08/11/2022
003	MW-120	Aqueous	08/10/2022 1300	08/11/2022
004	MW-136	Aqueous	08/10/2022 1635	08/11/2022
005	FB-02	Aqueous	08/10/2022 1530	08/11/2022
006	TB-07	Aqueous	08/10/2022	08/11/2022
007	DUP-GW-01	Aqueous	08/10/2022	08/11/2022

(7 samples)

Detection Summary
Terracon Consultants, Inc.
Lot Number: XH11019

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	MW-141	Aqueous	TOC	SM 5310C-	770	J	ug/L	7
001	MW-141	Aqueous	1,1-Dichloroethane	8260D	1.3		ug/L	8
001	MW-141	Aqueous	1,2-Dichloroethane	8260D	0.66	J	ug/L	8
001	MW-141	Aqueous	1,1-Dichloroethene	8260D	3.5		ug/L	8
001	MW-141	Aqueous	cis-1,2-Dichloroethene	8260D	3.1		ug/L	8
001	MW-141	Aqueous	Methyl tertiary butyl ether	8260D	0.84	J	ug/L	8
001	MW-141	Aqueous	Tetrachloroethene	8260D	4.7		ug/L	8
001	MW-141	Aqueous	1,1,2-Trichloro-1,2,2-	8260D	0.86	J	ug/L	8
001	MW-141	Aqueous	Trichloroethene	8260D	88		ug/L	9
001	MW-141	Aqueous	Di-n-butyl phthalate	8270E	0.60	J	ug/L	10
001	MW-141	Aqueous	Methane	RSK - 175	19	B	ug/L	12
001	MW-141	Aqueous	Barium	6020B	33		ug/L	13
002	MW-139	Aqueous	TOC	SM 5310C-	660	J	ug/L	14
002	MW-139	Aqueous	1,1-Dichloroethane	8260D	3.1	J	ug/L	15
002	MW-139	Aqueous	cis-1,2-Dichloroethene	8260D	87		ug/L	15
002	MW-139	Aqueous	Tetrachloroethene	8260D	77		ug/L	15
002	MW-139	Aqueous	1,1,2-Trichloro-1,2,2-	8260D	4.6	J	ug/L	15
002	MW-139	Aqueous	Trichloroethene	8260D	260		ug/L	16
002	MW-139	Aqueous	Di-n-butyl phthalate	8270E	0.56	J	ug/L	17
002	MW-139	Aqueous	Methane	RSK - 175	4.5	BJ	ug/L	19
002	MW-139	Aqueous	Barium	6020B	33		ug/L	20
002	MW-139	Aqueous	Chromium	6020B	5.6		ug/L	20
002	MW-139	Aqueous	Selenium	6020B	53		ug/L	20
003	MW-120	Aqueous	TOC	SM 5310C-	2000		ug/L	21
003	MW-120	Aqueous	Benzene	8260D	250		ug/L	22
003	MW-120	Aqueous	Cyclohexane	8260D	36	J	ug/L	22
003	MW-120	Aqueous	cis-1,2-Dichloroethene	8260D	3600		ug/L	22
003	MW-120	Aqueous	trans-1,2-Dichloroethene	8260D	25	J	ug/L	22
003	MW-120	Aqueous	Methyl tertiary butyl ether	8260D	180		ug/L	22
003	MW-120	Aqueous	Methylcyclohexane	8260D	27	J	ug/L	22
003	MW-120	Aqueous	Tetrachloroethene	8260D	8500		ug/L	22
003	MW-120	Aqueous	Trichlorofluoromethane	8260D	46	J	ug/L	23
003	MW-120	Aqueous	Vinyl chloride	8260D	34	J	ug/L	23
003	MW-120	Aqueous	Trichloroethene	8260D	3700	H	ug/L	25
003	MW-120	Aqueous	Caprolactam	8270E	1.5	J	ug/L	26
003	MW-120	Aqueous	Di-n-butyl phthalate	8270E	0.65	J	ug/L	26
003	MW-120	Aqueous	2-Methylnaphthalene	8270E	0.098	J	ug/L	27
003	MW-120	Aqueous	Naphthalene	8270E	20		ug/L	27
003	MW-120	Aqueous	Methane	RSK - 175	19	B	ug/L	28
003	MW-120	Aqueous	Barium	6020B	96		ug/L	29
003	MW-120	Aqueous	Chromium	6020B	1.6	J	ug/L	29
004	MW-136	Aqueous	Acetone	8260D	65	J	ug/L	30
004	MW-136	Aqueous	Benzene	8260D	6.6	J	ug/L	30
004	MW-136	Aqueous	1,1-Dichloroethane	8260D	10		ug/L	30
004	MW-136	Aqueous	cis-1,2-Dichloroethene	8260D	150		ug/L	30

Detection Summary (Continued)

Lot Number: XH11019

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
004	MW-136	Aqueous	Methyl tertiary butyl ether	8260D	25		ug/L	30
004	MW-136	Aqueous	Tetrachloroethene	8260D	240		ug/L	30
004	MW-136	Aqueous	Trichloroethene	8260D	1700		ug/L	31
005	FB-02	Aqueous	Acetone	8260D	13	J	ug/L	32
005	FB-02	Aqueous	Methylene chloride	8260D	2.1		ug/L	32
006	TB-07	Aqueous	Acetone	8260D	6.2	J	ug/L	36
007	DUP-GW-01	Aqueous	TOC	SM 5310C-	2300		ug/L	40
007	DUP-GW-01	Aqueous	Benzene	8260D	260		ug/L	41
007	DUP-GW-01	Aqueous	Cyclohexane	8260D	40	J	ug/L	41
007	DUP-GW-01	Aqueous	cis-1,2-Dichloroethene	8260D	3500		ug/L	41
007	DUP-GW-01	Aqueous	trans-1,2-Dichloroethene	8260D	26	J	ug/L	41
007	DUP-GW-01	Aqueous	Methyl tertiary butyl ether	8260D	180		ug/L	41
007	DUP-GW-01	Aqueous	Methylcyclohexane	8260D	28	J	ug/L	41
007	DUP-GW-01	Aqueous	Tetrachloroethene	8260D	9000		ug/L	41
007	DUP-GW-01	Aqueous	Trichlorofluoromethane	8260D	47	J	ug/L	42
007	DUP-GW-01	Aqueous	Vinyl chloride	8260D	32	J	ug/L	42
007	DUP-GW-01	Aqueous	Trichloroethene	8260D	3800	H	ug/L	44
007	DUP-GW-01	Aqueous	Di-n-butyl phthalate	8270E	0.79	J	ug/L	45
007	DUP-GW-01	Aqueous	2-Methylnaphthalene	8270E	0.076	J	ug/L	46
007	DUP-GW-01	Aqueous	Naphthalene	8270E	16		ug/L	46
007	DUP-GW-01	Aqueous	Methane	RSK - 175	18	B	ug/L	47
007	DUP-GW-01	Aqueous	Barium	6020B	96		ug/L	48
007	DUP-GW-01	Aqueous	Chromium	6020B	1.4	J	ug/L	48

(68 detections)

Inorganic non-metals

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-001**
Description: **MW-141**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 0845**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(TOC) SM 5310C-2011	1	08/29/2022 2237	CMM		52525

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
TOC		**SM 5310C-2011**	**770**	**J**	**2000**	1500	**600**	**ug/L**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11019-001**

Description: **MW-141** Matrix: **Aqueous**

Date Sampled: **08/10/2022 0845**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/17/2022 1721	JWO		51429

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	**75-34-3**	**8260D**	**1.3**		**1.0**	0.80	**0.40**	**ug/L**	**1**
1,2-Dichloroethane	**107-06-2**	**8260D**	**0.66**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
1,1-Dichloroethene	**75-35-4**	**8260D**	**3.5**		**1.0**	0.80	**0.40**	**ug/L**	**1**
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**3.1**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260D**	**0.84**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**4.7**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**0.86**	**J**	**1.0**	0.84	**0.42**	**ug/L**	**1**
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-001**
Description: **MW-141**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 0845**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/17/2022 1721	JWO		51429

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**88**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		91	81-118
Bromofluorobenzene		99	85-114
Toluene-d8		110	89-112
Dibromofluoromethane		113	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11019-001**

Description: **MW-141** Matrix: **Aqueous**

Date Sampled: **08/10/2022 0845**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1927	CMF	08/12/2022 1750	50961

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	**84-74-2**	**8270E**	**0.60**	**J**	**1.6**	1.0	**0.50**	**ug/L**	**1**
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-001**
Description: **MW-141**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 0845**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1927	CMF	08/12/2022 1750	50961

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		56	44-119
2-Fluorophenol		33	19-119
Nitrobenzene-d5		54	44-120
Phenol-d5		44	10-115
Terphenyl-d14		93	50-134
2,4,6-Tribromophenol		72	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Dissolved Gases

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-001**
Description: **MW-141**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 0845**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	08/17/2022 2001	JM1		51425

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Ethane	74-84-0	RSK - 175	5.0	U	10	5.0	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	5.0	U	10	5.0	2.5	ug/L	1
Methane	**74-82-8**	**RSK - 175**	**19**	**B**	**10**	5.0	**2.5**	**ug/L**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
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Metals

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-001**
Description: **MW-141**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 0845**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	09/01/2022 0206	BNW	08/15/2022 0850	50907
1		7470A	1	08/13/2022 1818	MRW2	08/13/2022 1352	51007

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**33**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	7440-43-9	6020B	0.25	U	0.50	0.25	0.13	ug/L	1
Chromium	7440-47-3	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Lead	7439-92-1	6020B	0.50	U	1.0	0.50	0.25	ug/L	1
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
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Inorganic non-metals

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-002**
Description: **MW-139**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1100**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(TOC) SM 5310C-2011	1	08/29/2022 2248	CMM		52525

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
TOC		**SM 5310C-2011**	**660**	**J**	**2000**	1500	**600**	**ug/L**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11019-002**

Description: **MW-139** Matrix: **Aqueous**

Date Sampled: **08/10/2022 1100**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	5	08/21/2022 1941	JMM2		51772

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	50	U	100	50	25	ug/L	2
Benzene	71-43-2	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
Bromodichloromethane	75-27-4	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
Bromoform	75-25-2	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	4.0	U	10	4.0	2.0	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	20	U	50	20	10	ug/L	2
Carbon disulfide	75-15-0	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
Carbon tetrachloride	56-23-5	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
Chlorobenzene	108-90-7	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
Chloroethane	75-00-3	8260D	4.0	U	10	4.0	2.0	ug/L	2
Chloroform	67-66-3	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	5.0	U	10	5.0	2.5	ug/L	2
Cyclohexane	110-82-7	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
Dibromochloromethane	124-48-1	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	6.0	U	10	6.0	3.0	ug/L	2
1,1-Dichloroethane	**75-34-3**	**8260D**	**3.1**	**J**	**5.0**	4.0	**2.0**	**ug/L**	**2**
1,2-Dichloroethane	107-06-2	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**87**		**5.0**	4.0	**2.0**	**ug/L**	**2**
trans-1,2-Dichloroethene	156-60-5	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
Ethylbenzene	100-41-4	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
2-Hexanone	591-78-6	8260D	20	U	50	20	10	ug/L	2
Isopropylbenzene	98-82-8	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
Methyl acetate	79-20-9	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	20	U	50	20	10	ug/L	2
Methylcyclohexane	108-87-2	8260D	4.0	U	25	4.0	2.0	ug/L	2
Methylene chloride	75-09-2	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
Styrene	100-42-5	8260D	4.1	U	5.0	4.1	2.1	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
Tetrachloroethene	**127-18-4**	**8260D**	**77**		**5.0**	4.0	**2.0**	**ug/L**	**2**
Toluene	108-88-3	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**4.6**	**J**	**5.0**	4.2	**2.1**	**ug/L**	**2**
1,2,4-Trichlorobenzene	120-82-1	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
1,1,2-Trichloroethane	79-00-5	8260D	4.0	U	5.0	4.0	2.0	ug/L	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-002**
Description: **MW-139**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1100**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	5	08/21/2022 1941	JMM2		51772

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**260**		**5.0**	4.0	**2.0**	**ug/L**	**2**
Trichlorofluoromethane	75-69-4	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
Vinyl chloride	75-01-4	8260D	4.0	U	5.0	4.0	2.0	ug/L	2
Xylenes (total)	1330-20-7	8260D	4.0	U	5.0	4.0	2.0	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		92	81-118
Bromofluorobenzene		85	85-114
Toluene-d8		95	89-112
Dibromofluoromethane		93	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11019-002**

Description: **MW-139** Matrix: **Aqueous**

Date Sampled: **08/10/2022 1100**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1951	CMF	08/12/2022 1750	50961

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	**84-74-2**	**8270E**	**0.56**	**J**	**1.6**	1.0	**0.50**	**ug/L**	**1**
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-002**
Description: **MW-139**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1100**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 1951	CMF	08/12/2022 1750	50961

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		65	44-119
2-Fluorophenol		35	19-119
Nitrobenzene-d5		64	44-120
Phenol-d5		42	10-115
Terphenyl-d14		85	50-134
2,4,6-Tribromophenol		78	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Dissolved Gases

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-002**
Description: **MW-139**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1100**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	08/17/2022 2017	JM1		51425

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Ethane	74-84-0	RSK - 175	5.0	U	10	5.0	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	5.0	U	10	5.0	2.5	ug/L	1
Methane	**74-82-8**	**RSK - 175**	**4.5**	**BJ**	**10**	5.0	**2.5**	**ug/L**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-002**
Description: **MW-139**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1100**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	09/01/2022 0215	BNW	08/15/2022 0850	50907
1		7470A	1	08/13/2022 1815	MRW2	08/13/2022 1352	51007

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**33**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	7440-43-9	6020B	0.25	U	0.50	0.25	0.13	ug/L	1
Chromium	**7440-47-3**	**6020B**	**5.6**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Lead	7439-92-1	6020B	0.50	U	1.0	0.50	0.25	ug/L	1
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	**7782-49-2**	**6020B**	**53**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Inorganic non-metals

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-003**
Description: **MW-120**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1300**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(TOC) SM 5310C-2011	1	08/29/2022 2300	CMM		52525

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
TOC		**SM 5310C-2011**	**2000**		**2000**	1500	**600**	**ug/L**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-003**
Description: **MW-120**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1300**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	50	08/19/2022 1832	JWO		51688
2	5030B	8260D	50	08/26/2022 0325	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	500	U	1000	500	250	ug/L	1
Benzene	**71-43-2**	**8260D**	**250**		**50**	40	**20**	**ug/L**	**1**
Bromodichloromethane	75-27-4	8260D	40	U	50	40	20	ug/L	1
Bromoform	75-25-2	8260D	40	U	50	40	20	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	40	U	100	40	20	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	200	U	500	200	100	ug/L	1
Carbon disulfide	75-15-0	8260D	40	U	50	40	20	ug/L	1
Carbon tetrachloride	56-23-5	8260D	40	U	50	40	20	ug/L	1
Chlorobenzene	108-90-7	8260D	40	U	50	40	20	ug/L	1
Chloroethane	75-00-3	8260D	40	U	100	40	20	ug/L	1
Chloroform	67-66-3	8260D	40	U	50	40	20	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	50	U	100	50	25	ug/L	1
Cyclohexane	**110-82-7**	**8260D**	**36**	**J**	**50**	40	**20**	**ug/L**	**1**
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	40	U	50	40	20	ug/L	1
Dibromochloromethane	124-48-1	8260D	40	U	50	40	20	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	40	U	50	40	20	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	40	U	50	40	20	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	40	U	50	40	20	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	40	U	50	40	20	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	60	U	100	60	30	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	40	U	50	40	20	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	40	U	50	40	20	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	40	U	50	40	20	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**3600**		**50**	40	**20**	**ug/L**	**1**
trans-1,2-Dichloroethene	**156-60-5**	**8260D**	**25**	**J**	**50**	40	**20**	**ug/L**	**1**
1,2-Dichloropropane	78-87-5	8260D	40	U	50	40	20	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	40	U	50	40	20	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	40	U	50	40	20	ug/L	1
Ethylbenzene	100-41-4	8260D	40	U	50	40	20	ug/L	1
2-Hexanone	591-78-6	8260D	200	U	500	200	100	ug/L	1
Isopropylbenzene	98-82-8	8260D	40	U	50	40	20	ug/L	1
Methyl acetate	79-20-9	8260D	40	U	50	40	20	ug/L	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260D**	**180**		**50**	40	**20**	**ug/L**	**1**
4-Methyl-2-pentanone	108-10-1	8260D	200	U	500	200	100	ug/L	1
Methylcyclohexane	**108-87-2**	**8260D**	**27**	**J**	**250**	40	**20**	**ug/L**	**1**
Methylene chloride	75-09-2	8260D	40	U	50	40	20	ug/L	1
Styrene	100-42-5	8260D	41	U	50	41	21	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	40	U	50	40	20	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**8500**		**50**	40	**20**	**ug/L**	**1**
Toluene	108-88-3	8260D	40	U	50	40	20	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	42	U	50	42	21	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	40	U	50	40	20	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	40	U	50	40	20	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-003**
Description: **MW-120**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1300**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	50	08/19/2022 1832	JWO		51688
2	5030B	8260D	50	08/26/2022 0325	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	40	U	50	40	20	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**3700**		**50**	40	**20**	**ug/L**	**1**
Trichlorofluoromethane	**75-69-4**	**8260D**	**46**	**J**	**50**	40	**20**	**ug/L**	**1**
Vinyl chloride	**75-01-4**	**8260D**	**34**	**J**	**50**	40	**20**	**ug/L**	**1**
Xylenes (total)	1330-20-7	8260D	40	U	50	40	20	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		100	81-118	H	102	81-118
Bromofluorobenzene		103	85-114	H	100	85-114
Toluene-d8		103	89-112	H	102	89-112
Dibromofluoromethane		95	80-119	H	98	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11019-003**

Description: **MW-120** Matrix: **Aqueous**

Date Sampled: **08/10/2022 1300**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	50	08/19/2022 1832	JWO		51688
2	5030B	8260D	50	08/26/2022 0325	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	500	UH	1000	500	250	ug/L	2
Benzene	**71-43-2**	**8260D**	**260**	**H**	**50**	40	**20**	**ug/L**	**2**
Bromodichloromethane	75-27-4	8260D	40	UH	50	40	20	ug/L	2
Bromoform	75-25-2	8260D	40	UH	50	40	20	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	40	UH	100	40	20	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	200	UH	500	200	100	ug/L	2
Carbon disulfide	75-15-0	8260D	40	UH	50	40	20	ug/L	2
Carbon tetrachloride	56-23-5	8260D	40	UH	50	40	20	ug/L	2
Chlorobenzene	108-90-7	8260D	40	UH	50	40	20	ug/L	2
Chloroethane	75-00-3	8260D	40	UH	100	40	20	ug/L	2
Chloroform	67-66-3	8260D	40	UH	50	40	20	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	50	UH	100	50	25	ug/L	2
Cyclohexane	110-82-7	8260D	40	UH	50	40	20	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	40	UH	50	40	20	ug/L	2
Dibromochloromethane	124-48-1	8260D	40	UH	50	40	20	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	40	UH	50	40	20	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	40	UH	50	40	20	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	40	UH	50	40	20	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	40	UH	50	40	20	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	60	UH	100	60	30	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	40	UH	50	40	20	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	40	UH	50	40	20	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	40	UH	50	40	20	ug/L	2
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**3700**	**H**	**50**	40	**20**	**ug/L**	**2**
trans-1,2-Dichloroethene	156-60-5	8260D	40	UH	50	40	20	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	40	UH	50	40	20	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	40	UH	50	40	20	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	40	UH	50	40	20	ug/L	2
Ethylbenzene	100-41-4	8260D	40	UH	50	40	20	ug/L	2
2-Hexanone	591-78-6	8260D	200	UH	500	200	100	ug/L	2
Isopropylbenzene	98-82-8	8260D	40	UH	50	40	20	ug/L	2
Methyl acetate	79-20-9	8260D	40	UH	50	40	20	ug/L	2
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260D**	**180**	**H**	**50**	40	**20**	**ug/L**	**2**
4-Methyl-2-pentanone	108-10-1	8260D	200	UH	500	200	100	ug/L	2
Methylcyclohexane	**108-87-2**	**8260D**	**26**	**HJ**	**250**	40	**20**	**ug/L**	**2**
Methylene chloride	75-09-2	8260D	40	UH	50	40	20	ug/L	2
Styrene	100-42-5	8260D	41	UH	50	41	21	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	40	UH	50	40	20	ug/L	2
Tetrachloroethene	**127-18-4**	**8260D**	**8600**	**H**	**50**	40	**20**	**ug/L**	**2**
Toluene	108-88-3	8260D	40	UH	50	40	20	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	42	UH	50	42	21	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	40	UH	50	40	20	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	40	UH	50	40	20	ug/L	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-003**
Description: **MW-120**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1300**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	50	08/19/2022 1832	JWO		51688
2	5030B	8260D	50	08/26/2022 0325	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	40	UH	50	40	20	ug/L	2
Trichloroethene	**79-01-6**	**8260D**	**3700**	**H**	**50**	40	**20**	**ug/L**	**2**
Trichlorofluoromethane	**75-69-4**	**8260D**	**49**	**HJ**	**50**	40	**20**	**ug/L**	**2**
Vinyl chloride	**75-01-4**	**8260D**	**28**	**HJ**	**50**	40	**20**	**ug/L**	**2**
Xylenes (total)	1330-20-7	8260D	40	UH	50	40	20	ug/L	2

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		100	81-118	H	102	81-118
Bromofluorobenzene		103	85-114	H	100	85-114
Toluene-d8		103	89-112	H	102	89-112
Dibromofluoromethane		95	80-119	H	98	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11019-003**

Description: **MW-120** Matrix: **Aqueous**

Date Sampled: **08/10/2022 1300**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 2016	CMF	08/12/2022 1750	50961

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	**105-60-2**	**8270E**	**1.5**	**J**	**3.0**	2.0	**1.0**	**ug/L**	**1**
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	**84-74-2**	**8270E**	**0.65**	**J**	**1.6**	1.0	**0.50**	**ug/L**	**1**
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-003**
Description: **MW-120**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1300**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/17/2022 2016	CMF	08/12/2022 1750	50961

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	**91-57-6**	**8270E**	**0.098**	**J**	**0.20**	0.10	**0.040**	**ug/L**	**1**
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	**91-20-3**	**8270E**	**20**		**0.20**	0.10	**0.040**	**ug/L**	**1**
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		64	44-119
2-Fluorophenol		40	19-119
Nitrobenzene-d5		64	44-120
Phenol-d5		55	10-115
Terphenyl-d14		86	50-134
2,4,6-Tribromophenol		78	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Dissolved Gases

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-003**
Description: **MW-120**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1300**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	08/17/2022 2033	JM1		51425

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Ethane	74-84-0	RSK - 175	5.0	U	10	5.0	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	5.0	U	10	5.0	2.5	ug/L	1
Methane	**74-82-8**	**RSK - 175**	**19**	**B**	**10**	5.0	**2.5**	**ug/L**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-003**
Description: **MW-120**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1300**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	09/01/2022 0258	BNW	08/15/2022 0850	50907
1		7470A	1	08/13/2022 1812	MRW2	08/13/2022 1352	51007

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**96**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	7440-43-9	6020B	0.25	U	0.50	0.25	0.13	ug/L	1
Chromium	**7440-47-3**	**6020B**	**1.6**	**J**	**5.0**	2.5	**1.3**	**ug/L**	**1**
Lead	7439-92-1	6020B	0.50	U	1.0	0.50	0.25	ug/L	1
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11019-004**

Description: **MW-136** Matrix: **Aqueous**

Date Sampled: **08/10/2022 1635**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	10	08/21/2022 2005	JMM2		51772

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**65**	**J**	**200**	100	**50**	**ug/L**	**1**
Benzene	**71-43-2**	**8260D**	**6.6**	**J**	**10**	8.0	**4.0**	**ug/L**	**1**
Bromodichloromethane	75-27-4	8260D	8.0	U	10	8.0	4.0	ug/L	1
Bromoform	75-25-2	8260D	8.0	U	10	8.0	4.0	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	8.0	U	20	8.0	4.0	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	40	U	100	40	20	ug/L	1
Carbon disulfide	75-15-0	8260D	8.0	U	10	8.0	4.0	ug/L	1
Carbon tetrachloride	56-23-5	8260D	8.0	U	10	8.0	4.0	ug/L	1
Chlorobenzene	108-90-7	8260D	8.0	U	10	8.0	4.0	ug/L	1
Chloroethane	75-00-3	8260D	8.0	U	20	8.0	4.0	ug/L	1
Chloroform	67-66-3	8260D	8.0	U	10	8.0	4.0	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	10	U	20	10	5.0	ug/L	1
Cyclohexane	110-82-7	8260D	8.0	U	10	8.0	4.0	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	8.0	U	10	8.0	4.0	ug/L	1
Dibromochloromethane	124-48-1	8260D	8.0	U	10	8.0	4.0	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	8.0	U	10	8.0	4.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	8.0	U	10	8.0	4.0	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	8.0	U	10	8.0	4.0	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	8.0	U	10	8.0	4.0	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	12	U	20	12	6.0	ug/L	1
1,1-Dichloroethane	**75-34-3**	**8260D**	**10**		**10**	8.0	**4.0**	**ug/L**	**1**
1,2-Dichloroethane	107-06-2	8260D	8.0	U	10	8.0	4.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	8.0	U	10	8.0	4.0	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**150**		**10**	8.0	**4.0**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	8.0	U	10	8.0	4.0	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	8.0	U	10	8.0	4.0	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	8.0	U	10	8.0	4.0	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	8.0	U	10	8.0	4.0	ug/L	1
Ethylbenzene	100-41-4	8260D	8.0	U	10	8.0	4.0	ug/L	1
2-Hexanone	591-78-6	8260D	40	U	100	40	20	ug/L	1
Isopropylbenzene	98-82-8	8260D	8.0	U	10	8.0	4.0	ug/L	1
Methyl acetate	79-20-9	8260D	8.0	U	10	8.0	4.0	ug/L	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260D**	**25**		**10**	8.0	**4.0**	**ug/L**	**1**
4-Methyl-2-pentanone	108-10-1	8260D	40	U	100	40	20	ug/L	1
Methylcyclohexane	108-87-2	8260D	8.0	U	50	8.0	4.0	ug/L	1
Methylene chloride	75-09-2	8260D	8.0	U	10	8.0	4.0	ug/L	1
Styrene	100-42-5	8260D	8.2	U	10	8.2	4.1	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	8.0	U	10	8.0	4.0	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**240**		**10**	8.0	**4.0**	**ug/L**	**1**
Toluene	108-88-3	8260D	8.0	U	10	8.0	4.0	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	8.4	U	10	8.4	4.2	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	8.0	U	10	8.0	4.0	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	8.0	U	10	8.0	4.0	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	8.0	U	10	8.0	4.0	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-004**
Description: **MW-136**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1635**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	10	08/21/2022 2005	JMM2		51772

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**1700**		**10**	8.0	**4.0**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	8.0	U	10	8.0	4.0	ug/L	1
Vinyl chloride	75-01-4	8260D	8.0	U	10	8.0	4.0	ug/L	1
Xylenes (total)	1330-20-7	8260D	8.0	U	10	8.0	4.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		93	81-118
Bromofluorobenzene		87	85-114
Toluene-d8		94	89-112
Dibromofluoromethane		91	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-005**
Description: **FB-02**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1530**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1244	JWO		51688
2	5030B	8260D	1	08/25/2022 2250	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**13**	**J**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	**75-09-2**	**8260D**	**2.1**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-005**
Description: **FB-02**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1530**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1244	JWO		51688
2	5030B	8260D	1	08/25/2022 2250	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		98	81-118	H	99	81-118
Bromofluorobenzene		100	85-114	H	105	85-114
Toluene-d8		98	89-112	H	99	89-112
Dibromofluoromethane		93	80-119	H	97	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-005**
Description: **FB-02**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1530**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1244	JWO		51688
2	5030B	8260D	1	08/25/2022 2250	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**17**	**HJ**	**20**	10	**5.0**	**ug/L**	**2**
Benzene	71-43-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromoform	75-25-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chloroethane	75-00-3	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
Chloroform	67-66-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	UH	2.0	1.0	0.50	ug/L	2
Cyclohexane	110-82-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	1.2	UH	2.0	1.2	0.60	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Methylcyclohexane	108-87-2	8260D	0.80	UH	5.0	0.80	0.40	ug/L	2
Methylene chloride	**75-09-2**	**8260D**	**2.3**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Styrene	100-42-5	8260D	0.82	UH	1.0	0.82	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Tetrachloroethene	127-18-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Toluene	108-88-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	UH	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-005**
Description: **FB-02**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1530**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1244	JWO		51688
2	5030B	8260D	1	08/25/2022 2250	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Trichloroethene	79-01-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Trichlorofluoromethane	75-69-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Vinyl chloride	75-01-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		98	81-118	H	99	81-118
Bromofluorobenzene		100	85-114	H	105	85-114
Toluene-d8		98	89-112	H	99	89-112
Dibromofluoromethane		93	80-119	H	97	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11019-006**

Description: **TB-07** Matrix: **Aqueous**

Date Sampled: **08/10/2022**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1307	JWO		51688
2	5030B	8260D	1	08/26/2022 0022	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**6.2**	**J**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-006**
Description: **TB-07**
Matrix: **Aqueous**
Date Sampled: **08/10/2022**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1307	JWO		51688
2	5030B	8260D	1	08/26/2022 0022	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		99	81-118	H	100	81-118
Bromofluorobenzene		104	85-114	H	99	85-114
Toluene-d8		100	89-112	H	100	89-112
Dibromofluoromethane		94	80-119	H	96	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-006**
Description: **TB-07**
Matrix: **Aqueous**
Date Sampled: **08/10/2022**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1307	JWO		51688
2	5030B	8260D	1	08/26/2022 0022	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	UH	20	10	5.0	ug/L	2
Benzene	71-43-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromoform	75-25-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chloroethane	75-00-3	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
Chloroform	67-66-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	UH	2.0	1.0	0.50	ug/L	2
Cyclohexane	110-82-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	1.2	UH	2.0	1.2	0.60	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Methylcyclohexane	108-87-2	8260D	0.80	UH	5.0	0.80	0.40	ug/L	2
Methylene chloride	75-09-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Styrene	100-42-5	8260D	0.82	UH	1.0	0.82	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Tetrachloroethene	127-18-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Toluene	108-88-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	UH	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-006**
Description: **TB-07**
Matrix: **Aqueous**
Date Sampled: **08/10/2022**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1307	JWO		51688
2	5030B	8260D	1	08/26/2022 0022	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Trichloroethene	79-01-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Trichlorofluoromethane	75-69-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Vinyl chloride	75-01-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		99	81-118	H	100	81-118
Bromofluorobenzene		104	85-114	H	99	85-114
Toluene-d8		100	89-112	H	100	89-112
Dibromofluoromethane		94	80-119	H	96	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Inorganic non-metals

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-007**
Description: **DUP-GW-01**
Matrix: **Aqueous**
Date Sampled: **08/10/2022**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(TOC) SM 5310C-2011	1	08/29/2022 2311	CMM		52525

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
TOC		**SM 5310C-2011**	**2300**		**2000**	1500	**600**	**ug/L**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-007**
Description: **DUP-GW-01**
Matrix: **Aqueous**
Date Sampled: **08/10/2022**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	50	08/19/2022 1809	JWO		51688
2	5030B	8260D	50	08/26/2022 0348	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	500	U	1000	500	250	ug/L	1
Benzene	**71-43-2**	**8260D**	**260**		**50**	40	**20**	**ug/L**	**1**
Bromodichloromethane	75-27-4	8260D	40	U	50	40	20	ug/L	1
Bromoform	75-25-2	8260D	40	U	50	40	20	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	40	U	100	40	20	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	200	U	500	200	100	ug/L	1
Carbon disulfide	75-15-0	8260D	40	U	50	40	20	ug/L	1
Carbon tetrachloride	56-23-5	8260D	40	U	50	40	20	ug/L	1
Chlorobenzene	108-90-7	8260D	40	U	50	40	20	ug/L	1
Chloroethane	75-00-3	8260D	40	U	100	40	20	ug/L	1
Chloroform	67-66-3	8260D	40	U	50	40	20	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	50	U	100	50	25	ug/L	1
Cyclohexane	**110-82-7**	**8260D**	**40**	**J**	**50**	40	**20**	**ug/L**	**1**
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	40	U	50	40	20	ug/L	1
Dibromochloromethane	124-48-1	8260D	40	U	50	40	20	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	40	U	50	40	20	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	40	U	50	40	20	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	40	U	50	40	20	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	40	U	50	40	20	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	60	U	100	60	30	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	40	U	50	40	20	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	40	U	50	40	20	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	40	U	50	40	20	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**3500**		**50**	40	**20**	**ug/L**	**1**
trans-1,2-Dichloroethene	**156-60-5**	**8260D**	**26**	**J**	**50**	40	**20**	**ug/L**	**1**
1,2-Dichloropropane	78-87-5	8260D	40	U	50	40	20	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	40	U	50	40	20	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	40	U	50	40	20	ug/L	1
Ethylbenzene	100-41-4	8260D	40	U	50	40	20	ug/L	1
2-Hexanone	591-78-6	8260D	200	U	500	200	100	ug/L	1
Isopropylbenzene	98-82-8	8260D	40	U	50	40	20	ug/L	1
Methyl acetate	79-20-9	8260D	40	U	50	40	20	ug/L	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260D**	**180**		**50**	40	**20**	**ug/L**	**1**
4-Methyl-2-pentanone	108-10-1	8260D	200	U	500	200	100	ug/L	1
Methylcyclohexane	**108-87-2**	**8260D**	**28**	**J**	**250**	40	**20**	**ug/L**	**1**
Methylene chloride	75-09-2	8260D	40	U	50	40	20	ug/L	1
Styrene	100-42-5	8260D	41	U	50	41	21	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	40	U	50	40	20	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**9000**		**50**	40	**20**	**ug/L**	**1**
Toluene	108-88-3	8260D	40	U	50	40	20	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	42	U	50	42	21	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	40	U	50	40	20	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	40	U	50	40	20	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-007**
Description: **DUP-GW-01**
Matrix: **Aqueous**
Date Sampled: **08/10/2022**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	50	08/19/2022 1809	JWO		51688
2	5030B	8260D	50	08/26/2022 0348	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	40	U	50	40	20	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**3800**		**50**	40	**20**	**ug/L**	**1**
Trichlorofluoromethane	**75-69-4**	**8260D**	**47**	**J**	**50**	40	**20**	**ug/L**	**1**
Vinyl chloride	**75-01-4**	**8260D**	**32**	**J**	**50**	40	**20**	**ug/L**	**1**
Xylenes (total)	1330-20-7	8260D	40	U	50	40	20	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		97	81-118	H	102	81-118
Bromofluorobenzene		102	85-114	H	100	85-114
Toluene-d8		98	89-112	H	101	89-112
Dibromofluoromethane		94	80-119	H	99	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11019-007**

Description: **DUP-GW-01** Matrix: **Aqueous**

Date Sampled: **08/10/2022**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	50	08/19/2022 1809	JWO		51688
2	5030B	8260D	50	08/26/2022 0348	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	500	UH	1000	500	250	ug/L	2
Benzene	**71-43-2**	**8260D**	**260**	**H**	**50**	40	**20**	**ug/L**	**2**
Bromodichloromethane	75-27-4	8260D	40	UH	50	40	20	ug/L	2
Bromoform	75-25-2	8260D	40	UH	50	40	20	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	40	UH	100	40	20	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	200	UH	500	200	100	ug/L	2
Carbon disulfide	75-15-0	8260D	40	UH	50	40	20	ug/L	2
Carbon tetrachloride	56-23-5	8260D	40	UH	50	40	20	ug/L	2
Chlorobenzene	108-90-7	8260D	40	UH	50	40	20	ug/L	2
Chloroethane	75-00-3	8260D	40	UH	100	40	20	ug/L	2
Chloroform	67-66-3	8260D	40	UH	50	40	20	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	50	UH	100	50	25	ug/L	2
Cyclohexane	**110-82-7**	**8260D**	**33**	**HJ**	**50**	40	**20**	**ug/L**	**2**
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	40	UH	50	40	20	ug/L	2
Dibromochloromethane	124-48-1	8260D	40	UH	50	40	20	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	40	UH	50	40	20	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	40	UH	50	40	20	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	40	UH	50	40	20	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	40	UH	50	40	20	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	60	UH	100	60	30	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	40	UH	50	40	20	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	40	UH	50	40	20	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	40	UH	50	40	20	ug/L	2
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**3600**	**H**	**50**	40	**20**	**ug/L**	**2**
trans-1,2-Dichloroethene	**156-60-5**	**8260D**	**27**	**HJ**	**50**	40	**20**	**ug/L**	**2**
1,2-Dichloropropane	78-87-5	8260D	40	UH	50	40	20	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	40	UH	50	40	20	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	40	UH	50	40	20	ug/L	2
Ethylbenzene	100-41-4	8260D	40	UH	50	40	20	ug/L	2
2-Hexanone	591-78-6	8260D	200	UH	500	200	100	ug/L	2
Isopropylbenzene	98-82-8	8260D	40	UH	50	40	20	ug/L	2
Methyl acetate	79-20-9	8260D	40	UH	50	40	20	ug/L	2
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260D**	**180**	**H**	**50**	40	**20**	**ug/L**	**2**
4-Methyl-2-pentanone	108-10-1	8260D	200	UH	500	200	100	ug/L	2
Methylcyclohexane	**108-87-2**	**8260D**	**29**	**HJ**	**250**	40	**20**	**ug/L**	**2**
Methylene chloride	75-09-2	8260D	40	UH	50	40	20	ug/L	2
Styrene	100-42-5	8260D	41	UH	50	41	21	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	40	UH	50	40	20	ug/L	2
Tetrachloroethene	**127-18-4**	**8260D**	**8600**	**H**	**50**	40	**20**	**ug/L**	**2**
Toluene	108-88-3	8260D	40	UH	50	40	20	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	42	UH	50	42	21	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	40	UH	50	40	20	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	40	UH	50	40	20	ug/L	2

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
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P = The RPD between two GC columns exceeds 40%
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LOD = Limit of Detection
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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-007**
Description: **DUP-GW-01**
Matrix: **Aqueous**
Date Sampled: **08/10/2022**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	50	08/19/2022 1809	JWO		51688
2	5030B	8260D	50	08/26/2022 0348	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	40	UH	50	40	20	ug/L	2
Trichloroethene	**79-01-6**	**8260D**	**3800**	**H**	**50**	40	**20**	**ug/L**	**2**
Trichlorofluoromethane	**75-69-4**	**8260D**	**51**	**H**	**50**	40	**20**	**ug/L**	**2**
Vinyl chloride	**75-01-4**	**8260D**	**32**	**HJ**	**50**	40	**20**	**ug/L**	**2**
Xylenes (total)	1330-20-7	8260D	40	UH	50	40	20	ug/L	2

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		97	81-118	H	102	81-118
Bromofluorobenzene		102	85-114	H	100	85-114
Toluene-d8		98	89-112	H	101	89-112
Dibromofluoromethane		94	80-119	H	99	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11019-007**

Description: **DUP-GW-01** Matrix: **Aqueous**

Date Sampled: **08/10/2022**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/18/2022 1119	CMF	08/12/2022 1750	50961

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	**84-74-2**	**8270E**	**0.79**	**J**	**1.6**	1.0	**0.50**	**ug/L**	**1**
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation
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P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-007**
Description: **DUP-GW-01**
Matrix: **Aqueous**
Date Sampled: **08/10/2022**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/18/2022 1119	CMF	08/12/2022 1750	50961

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	**91-57-6**	**8270E**	**0.076**	**J**	**0.20**	0.10	**0.040**	**ug/L**	**1**
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	**91-20-3**	**8270E**	**16**		**0.20**	0.10	**0.040**	**ug/L**	**1**
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		53	44-119
2-Fluorophenol		31	19-119
Nitrobenzene-d5		50	44-120
Phenol-d5		37	10-115
Terphenyl-d14		86	50-134
2,4,6-Tribromophenol		76	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Dissolved Gases

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-007**
Description: **DUP-GW-01**
Matrix: **Aqueous**
Date Sampled: **08/10/2022**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	08/17/2022 2049	JM1		51425

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Ethane	74-84-0	RSK - 175	5.0	U	10	5.0	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	5.0	U	10	5.0	2.5	ug/L	1
Methane	**74-82-8**	**RSK - 175**	**18**	**B**	**10**	5.0	**2.5**	**ug/L**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11019-007**
Description: **DUP-GW-01**
Matrix: **Aqueous**
Date Sampled: **08/10/2022**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	09/01/2022 0306	BNW	08/15/2022 0850	50907
1		7470A	1	08/13/2022 1804	MRW2	08/13/2022 1352	51007

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**96**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	7440-43-9	6020B	0.25	U	0.50	0.25	0.13	ug/L	1
Chromium	**7440-47-3**	**6020B**	**1.4**	**J**	**5.0**	2.5	**1.3**	**ug/L**	**1**
Lead	7439-92-1	6020B	0.50	U	1.0	0.50	0.25	ug/L	1
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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QC Summary

Inorganic non-metals - MB

Sample ID: XQ52525-001
Batch: 52525
Analytical Method: SM 5310C-2011
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
TOC	1500	U	1	2000	1500	600	ug/L	08/29/2022 2129

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCS

Sample ID: XQ52525-002
Batch: 52525
Analytical Method: SM 5310C-2011

Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
TOC	20000	20000		1	99	90-110	08/29/2022 2140

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51429-001
Batch: 51429
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	08/17/2022 1100
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	08/17/2022 1100
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	08/17/2022 1100
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	08/17/2022 1100
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	08/17/2022 1100
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	08/17/2022 1100
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	08/17/2022 1100
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	08/17/2022 1100
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	08/17/2022 1100
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	08/17/2022 1100
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	08/17/2022 1100
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51429-001
Batch: 51429
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	08/17/2022 1100

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		103	81-118
Bromofluorobenzene		102	85-114
Toluene-d8		110	89-112
Dibromofluoromethane		104	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51429-002
Batch: 51429
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	95		1	95	39-160	08/17/2022 0927
Benzene	50	55		1	110	79-120	08/17/2022 0927
Bromodichloromethane	50	55		1	110	79-125	08/17/2022 0927
Bromoform	50	46		1	91	66-130	08/17/2022 0927
Bromomethane (Methyl bromide)	50	49		1	98	53-141	08/17/2022 0927
2-Butanone (MEK)	100	110		1	106	56-143	08/17/2022 0927
Carbon disulfide	50	48		1	96	64-133	08/17/2022 0927
Carbon tetrachloride	50	55		1	110	72-136	08/17/2022 0927
Chlorobenzene	50	52		1	105	82-118	08/17/2022 0927
Chloroethane	50	48		1	95	60-138	08/17/2022 0927
Chloroform	50	52		1	103	79-124	08/17/2022 0927
Chloromethane (Methyl chloride)	50	58		1	117	50-139	08/17/2022 0927
Cyclohexane	50	57		1	113	71-130	08/17/2022 0927
1,2-Dibromo-3-chloropropane (DBCP)	50	60		1	120	62-128	08/17/2022 0927
Dibromochloromethane	50	55		1	110	74-126	08/17/2022 0927
1,2-Dibromoethane (EDB)	50	54		1	109	77-121	08/17/2022 0927
1,2-Dichlorobenzene	50	51		1	103	80-119	08/17/2022 0927
1,3-Dichlorobenzene	50	51		1	103	80-119	08/17/2022 0927
1,4-Dichlorobenzene	50	50		1	100	79-118	08/17/2022 0927
Dichlorodifluoromethane	50	57		1	114	32-152	08/17/2022 0927
1,1-Dichloroethane	50	50		1	101	77-125	08/17/2022 0927
1,2-Dichloroethane	50	51		1	101	73-128	08/17/2022 0927
1,1-Dichloroethene	50	43		1	86	71-131	08/17/2022 0927
cis-1,2-Dichloroethene	50	53		1	107	78-123	08/17/2022 0927
trans-1,2-Dichloroethene	50	48		1	97	75-124	08/17/2022 0927
1,2-Dichloropropane	50	56		1	112	78-122	08/17/2022 0927
cis-1,3-Dichloropropene	50	51		1	103	75-124	08/17/2022 0927
trans-1,3-Dichloropropene	50	50		1	100	73-127	08/17/2022 0927
Ethylbenzene	50	55		1	110	79-121	08/17/2022 0927
2-Hexanone	100	100		1	104	57-139	08/17/2022 0927
Isopropylbenzene	50	48		1	96	72-131	08/17/2022 0927
Methyl acetate	50	48		1	96	56-136	08/17/2022 0927
Methyl tertiary butyl ether (MTBE)	50	51		1	103	71-124	08/17/2022 0927
4-Methyl-2-pentanone	100	110		1	106	67-130	08/17/2022 0927
Methylcyclohexane	50	56		1	112	72-132	08/17/2022 0927
Methylene chloride	50	43		1	87	74-124	08/17/2022 0927
Styrene	50	49		1	98	78-123	08/17/2022 0927
1,1,2,2-Tetrachloroethane	50	58		1	116	71-121	08/17/2022 0927
Tetrachloroethene	50	56		1	112	74-129	08/17/2022 0927
Toluene	50	56		1	113	80-121	08/17/2022 0927
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	47		1	93	70-136	08/17/2022 0927
1,2,4-Trichlorobenzene	50	53		1	107	69-130	08/17/2022 0927
1,1,1-Trichloroethane	50	53		1	107	74-131	08/17/2022 0927
1,1,2-Trichloroethane	50	56		1	112	80-119	08/17/2022 0927

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51429-002
Batch: 51429
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	54		1	108	79-123	08/17/2022 0927
Trichlorofluoromethane	50	44		1	88	65-141	08/17/2022 0927
Vinyl chloride	50	60		1	121	58-137	08/17/2022 0927
Xylenes (total)	100	100		1	105	79-121	08/17/2022 0927

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		100	81-118
Bromofluorobenzene		102	85-114
Toluene-d8		106	89-112
Dibromofluoromethane		100	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51688-001
Batch: 51688
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	08/19/2022 1206
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	08/19/2022 1206
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	08/19/2022 1206
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	08/19/2022 1206
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	08/19/2022 1206
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	08/19/2022 1206
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	08/19/2022 1206
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	08/19/2022 1206
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	08/19/2022 1206
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	08/19/2022 1206
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	08/19/2022 1206
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51688-001
Batch: 51688
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		98	81-118
Bromofluorobenzene		94	85-114
Toluene-d8		95	89-112
Dibromofluoromethane		91	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51688-002
Batch: 51688
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	150		1	152	39-160	08/19/2022 0849
Benzene	50	49		1	98	79-120	08/19/2022 0849
Bromodichloromethane	50	43		1	86	79-125	08/19/2022 0849
Bromoform	50	38		1	76	66-130	08/19/2022 0849
Bromomethane (Methyl bromide)	50	50		1	101	53-141	08/19/2022 0849
2-Butanone (MEK)	100	110		1	109	56-143	08/19/2022 0849
Carbon disulfide	50	44		1	87	64-133	08/19/2022 0849
Carbon tetrachloride	50	42		1	83	72-136	08/19/2022 0849
Chlorobenzene	50	45		1	91	82-118	08/19/2022 0849
Chloroethane	50	42		1	84	60-138	08/19/2022 0849
Chloroform	50	46		1	92	79-124	08/19/2022 0849
Chloromethane (Methyl chloride)	50	46		1	92	50-139	08/19/2022 0849
Cyclohexane	50	45		1	89	71-130	08/19/2022 0849
1,2-Dibromo-3-chloropropane (DBCP)	50	37		1	74	62-128	08/19/2022 0849
Dibromochloromethane	50	42		1	83	74-126	08/19/2022 0849
1,2-Dibromoethane (EDB)	50	47		1	95	77-121	08/19/2022 0849
1,2-Dichlorobenzene	50	44		1	88	80-119	08/19/2022 0849
1,3-Dichlorobenzene	50	44		1	88	80-119	08/19/2022 0849
1,4-Dichlorobenzene	50	43		1	86	79-118	08/19/2022 0849
Dichlorodifluoromethane	50	45		1	91	32-152	08/19/2022 0849
1,1-Dichloroethane	50	45		1	90	77-125	08/19/2022 0849
1,2-Dichloroethane	50	46		1	92	73-128	08/19/2022 0849
1,1-Dichloroethene	50	44		1	89	71-131	08/19/2022 0849
cis-1,2-Dichloroethene	50	47		1	93	78-123	08/19/2022 0849
trans-1,2-Dichloroethene	50	44		1	89	75-124	08/19/2022 0849
1,2-Dichloropropane	50	46		1	92	78-122	08/19/2022 0849
cis-1,3-Dichloropropene	50	45		1	91	75-124	08/19/2022 0849
trans-1,3-Dichloropropene	50	45		1	90	73-127	08/19/2022 0849
Ethylbenzene	50	46		1	92	79-121	08/19/2022 0849
2-Hexanone	100	110		1	107	57-139	08/19/2022 0849
Isopropylbenzene	50	46		1	93	72-131	08/19/2022 0849
Methyl acetate	50	48		1	96	56-136	08/19/2022 0849
Methyl tertiary butyl ether (MTBE)	50	51		1	101	71-124	08/19/2022 0849
4-Methyl-2-pentanone	100	97		1	97	67-130	08/19/2022 0849
Methylcyclohexane	50	44		1	87	72-132	08/19/2022 0849
Methylene chloride	50	45		1	90	74-124	08/19/2022 0849
Styrene	50	48		1	96	78-123	08/19/2022 0849
1,1,2,2-Tetrachloroethane	50	49		1	98	71-121	08/19/2022 0849
Tetrachloroethene	50	46		1	91	74-129	08/19/2022 0849
Toluene	50	48		1	95	80-121	08/19/2022 0849
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	41		1	82	70-136	08/19/2022 0849
1,2,4-Trichlorobenzene	50	42		1	83	69-130	08/19/2022 0849
1,1,1-Trichloroethane	50	44		1	89	74-131	08/19/2022 0849
1,1,2-Trichloroethane	50	49		1	97	80-119	08/19/2022 0849

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51688-002
Batch: 51688
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	43		1	86	79-123	08/19/2022 0849
Trichlorofluoromethane	50	45		1	90	65-141	08/19/2022 0849
Vinyl chloride	50	50		1	100	58-137	08/19/2022 0849
Xylenes (total)	100	94		1	94	79-121	08/19/2022 0849

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		88	81-118
Bromofluorobenzene		101	85-114
Toluene-d8		91	89-112
Dibromofluoromethane		88	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51772-001
Batch: 51772
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	08/21/2022 1225
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	08/21/2022 1225
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	08/21/2022 1225
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	08/21/2022 1225
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	08/21/2022 1225
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	08/21/2022 1225
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	08/21/2022 1225
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	08/21/2022 1225
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	08/21/2022 1225
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	08/21/2022 1225
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	08/21/2022 1225
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225

LOQ = Limit of Quantitation
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P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51772-001
Batch: 51772
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		97	81-118
Bromofluorobenzene		93	85-114
Toluene-d8		101	89-112
Dibromofluoromethane		100	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51772-002
Batch: 51772
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	110		1	113	39-160	08/21/2022 1119
Benzene	50	49		1	98	79-120	08/21/2022 1119
Bromodichloromethane	50	49		1	99	79-125	08/21/2022 1119
Bromoform	50	52		1	104	66-130	08/21/2022 1119
Bromomethane (Methyl bromide)	50	46		1	93	53-141	08/21/2022 1119
2-Butanone (MEK)	100	96		1	96	56-143	08/21/2022 1119
Carbon disulfide	50	48		1	97	64-133	08/21/2022 1119
Carbon tetrachloride	50	47		1	94	72-136	08/21/2022 1119
Chlorobenzene	50	50		1	99	82-118	08/21/2022 1119
Chloroethane	50	48		1	97	60-138	08/21/2022 1119
Chloroform	50	47		1	94	79-124	08/21/2022 1119
Chloromethane (Methyl chloride)	50	49		1	98	50-139	08/21/2022 1119
Cyclohexane	50	49		1	99	71-130	08/21/2022 1119
1,2-Dibromo-3-chloropropane (DBCP)	50	56		1	111	62-128	08/21/2022 1119
Dibromochloromethane	50	54		1	107	74-126	08/21/2022 1119
1,2-Dibromoethane (EDB)	50	51		1	101	77-121	08/21/2022 1119
1,2-Dichlorobenzene	50	51		1	102	80-119	08/21/2022 1119
1,3-Dichlorobenzene	50	51		1	102	80-119	08/21/2022 1119
1,4-Dichlorobenzene	50	48		1	96	79-118	08/21/2022 1119
Dichlorodifluoromethane	50	55		1	109	32-152	08/21/2022 1119
1,1-Dichloroethane	50	49		1	98	77-125	08/21/2022 1119
1,2-Dichloroethane	50	48		1	97	73-128	08/21/2022 1119
1,1-Dichloroethene	50	49		1	97	71-131	08/21/2022 1119
cis-1,2-Dichloroethene	50	49		1	97	78-123	08/21/2022 1119
trans-1,2-Dichloroethene	50	48		1	96	75-124	08/21/2022 1119
1,2-Dichloropropane	50	50		1	100	78-122	08/21/2022 1119
cis-1,3-Dichloropropene	50	54		1	107	75-124	08/21/2022 1119
trans-1,3-Dichloropropene	50	55		1	111	73-127	08/21/2022 1119
Ethylbenzene	50	52		1	103	79-121	08/21/2022 1119
2-Hexanone	100	99		1	99	57-139	08/21/2022 1119
Isopropylbenzene	50	56		1	112	72-131	08/21/2022 1119
Methyl acetate	50	54		1	108	56-136	08/21/2022 1119
Methyl tertiary butyl ether (MTBE)	50	54		1	108	71-124	08/21/2022 1119
4-Methyl-2-pentanone	100	99		1	99	67-130	08/21/2022 1119
Methylcyclohexane	50	51		1	102	72-132	08/21/2022 1119
Methylene chloride	50	48		1	95	74-124	08/21/2022 1119
Styrene	50	56		1	112	78-123	08/21/2022 1119
1,1,2,2-Tetrachloroethane	50	52		1	104	71-121	08/21/2022 1119
Tetrachloroethene	50	50		1	101	74-129	08/21/2022 1119
Toluene	50	54		1	107	80-121	08/21/2022 1119
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	48		1	97	70-136	08/21/2022 1119
1,2,4-Trichlorobenzene	50	49		1	99	69-130	08/21/2022 1119
1,1,1-Trichloroethane	50	48		1	95	74-131	08/21/2022 1119
1,1,2-Trichloroethane	50	51		1	101	80-119	08/21/2022 1119

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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51772-002
Batch: 51772
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	46		1	93	79-123	08/21/2022 1119
Trichlorofluoromethane	50	49		1	98	65-141	08/21/2022 1119
Vinyl chloride	50	51		1	101	58-137	08/21/2022 1119
Xylenes (total)	100	110		1	109	79-121	08/21/2022 1119

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		91	81-118
Bromofluorobenzene		96	85-114
Toluene-d8		100	89-112
Dibromofluoromethane		93	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ52303-001
Batch: 52303
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	08/25/2022 2041
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	08/25/2022 2041
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	08/25/2022 2041
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	08/25/2022 2041
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	08/25/2022 2041
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	08/25/2022 2041
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	08/25/2022 2041
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	08/25/2022 2041
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	08/25/2022 2041
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	08/25/2022 2041
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	08/25/2022 2041
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ52303-001
Batch: 52303
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		98	81-118
Bromofluorobenzene		103	85-114
Toluene-d8		99	89-112
Dibromofluoromethane		95	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ52303-002
Batch: 52303
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	150		1	153	39-160	08/25/2022 1934
Benzene	50	51		1	102	79-120	08/25/2022 1934
Bromodichloromethane	50	45		1	90	79-125	08/25/2022 1934
Bromoform	50	41		1	82	66-130	08/25/2022 1934
Bromomethane (Methyl bromide)	50	47		1	94	53-141	08/25/2022 1934
2-Butanone (MEK)	100	110		1	114	56-143	08/25/2022 1934
Carbon disulfide	50	48		1	97	64-133	08/25/2022 1934
Carbon tetrachloride	50	44		1	88	72-136	08/25/2022 1934
Chlorobenzene	50	45		1	91	82-118	08/25/2022 1934
Chloroethane	50	42		1	85	60-138	08/25/2022 1934
Chloroform	50	48		1	96	79-124	08/25/2022 1934
Chloromethane (Methyl chloride)	50	41		1	83	50-139	08/25/2022 1934
Cyclohexane	50	47		1	94	71-130	08/25/2022 1934
1,2-Dibromo-3-chloropropane (DBCP)	50	41		1	81	62-128	08/25/2022 1934
Dibromochloromethane	50	44		1	88	74-126	08/25/2022 1934
1,2-Dibromoethane (EDB)	50	48		1	95	77-121	08/25/2022 1934
1,2-Dichlorobenzene	50	44		1	89	80-119	08/25/2022 1934
1,3-Dichlorobenzene	50	45		1	91	80-119	08/25/2022 1934
1,4-Dichlorobenzene	50	44		1	88	79-118	08/25/2022 1934
Dichlorodifluoromethane	50	43		1	86	32-152	08/25/2022 1934
1,1-Dichloroethane	50	48		1	97	77-125	08/25/2022 1934
1,2-Dichloroethane	50	47		1	93	73-128	08/25/2022 1934
1,1-Dichloroethene	50	47		1	93	71-131	08/25/2022 1934
cis-1,2-Dichloroethene	50	49		1	99	78-123	08/25/2022 1934
trans-1,2-Dichloroethene	50	47		1	94	75-124	08/25/2022 1934
1,2-Dichloropropane	50	47		1	95	78-122	08/25/2022 1934
cis-1,3-Dichloropropene	50	48		1	96	75-124	08/25/2022 1934
trans-1,3-Dichloropropene	50	48		1	96	73-127	08/25/2022 1934
Ethylbenzene	50	48		1	95	79-121	08/25/2022 1934
2-Hexanone	100	110		1	113	57-139	08/25/2022 1934
Isopropylbenzene	50	47		1	93	72-131	08/25/2022 1934
Methyl acetate	50	54		1	107	56-136	08/25/2022 1934
Methyl tertiary butyl ether (MTBE)	50	51		1	103	71-124	08/25/2022 1934
4-Methyl-2-pentanone	100	100		1	102	67-130	08/25/2022 1934
Methylcyclohexane	50	45		1	90	72-132	08/25/2022 1934
Methylene chloride	50	47		1	94	74-124	08/25/2022 1934
Styrene	50	48		1	97	78-123	08/25/2022 1934
1,1,2,2-Tetrachloroethane	50	53		1	106	71-121	08/25/2022 1934
Tetrachloroethene	50	47		1	93	74-129	08/25/2022 1934
Toluene	50	49		1	99	80-121	08/25/2022 1934
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	40		1	80	70-136	08/25/2022 1934
1,2,4-Trichlorobenzene	50	42		1	84	69-130	08/25/2022 1934
1,1,1-Trichloroethane	50	46		1	92	74-131	08/25/2022 1934
1,1,2-Trichloroethane	50	48		1	97	80-119	08/25/2022 1934

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ52303-002
Batch: 52303
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	44		1	87	79-123	08/25/2022 1934
Trichlorofluoromethane	50	44		1	88	65-141	08/25/2022 1934
Vinyl chloride	50	43		1	86	58-137	08/25/2022 1934
Xylenes (total)	100	96		1	96	79-121	08/25/2022 1934

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		89	81-118
Bromofluorobenzene		95	85-114
Toluene-d8		93	89-112
Dibromofluoromethane		90	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ50961-001
Batch: 50961
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/12/2022 1750

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acenaphthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Acenaphthylene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Acetophenone	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Atrazine	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Benzaldehyde	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Benzo(a)anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Benzo(a)pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Benzo(b)fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Benzo(g,h,i)perylene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Benzo(k)fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
1,1'-Biphenyl	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
4-Bromophenyl phenyl ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Butyl benzyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Caprolactam	2.0	U	1	3.0	2.0	1.0	ug/L	08/17/2022 1049
Carbazole	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
bis (2-Chloro-1-methylethyl) ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
4-Chloro-3-methyl phenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
4-Chloroaniline	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
bis(2-Chloroethoxy)methane	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
bis(2-Chloroethyl)ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
2-Chloronaphthalene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
2-Chlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
4-Chlorophenyl phenyl ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Chrysene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Dibenzo(a,h)anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Dibenzofuran	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
3,3'-Dichlorobenzidine	3.5	U	1	4.0	3.5	1.8	ug/L	08/17/2022 1049
2,4-Dichlorophenol	0.50	U	1	1.6	0.50	0.25	ug/L	08/17/2022 1049
Diethylphthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Dimethyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
2,4-Dimethylphenol	1.5	U	1	2.0	1.5	0.62	ug/L	08/17/2022 1049
Di-n-butyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
4,6-Dinitro-2-methylphenol	2.0	U	1	4.0	2.0	1.0	ug/L	08/17/2022 1049
2,4-Dinitrophenol	2.0	U	1	4.0	2.0	1.0	ug/L	08/17/2022 1049
2,4-Dinitrotoluene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
2,6-Dinitrotoluene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Di-n-octylphthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
bis(2-Ethylhexyl)phthalate	3.0	U	1	4.0	3.0	1.5	ug/L	08/17/2022 1049
Fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Fluorene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Hexachlorobenzene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Hexachlorobutadiene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Hexachlorocyclopentadiene	4.0	U	1	4.0	4.0	2.0	ug/L	08/17/2022 1049

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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ50961-001
Batch: 50961
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/12/2022 1750

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Hexachloroethane	0.40	U	1	0.80	0.40	0.17	ug/L	08/17/2022 1049
Indeno(1,2,3-c,d)pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Isophorone	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
2-Methylnaphthalene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
2-Methylphenol	1.3	U	1	1.6	1.3	0.67	ug/L	08/17/2022 1049
3+4-Methylphenol	3.0	U	1	4.0	3.0	1.5	ug/L	08/17/2022 1049
Naphthalene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
2-Nitroaniline	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
3-Nitroaniline	2.0	U	1	3.0	2.0	1.0	ug/L	08/17/2022 1049
4-Nitroaniline	3.0	U	1	4.0	3.0	1.5	ug/L	08/17/2022 1049
Nitrobenzene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
2-Nitrophenol	2.0	U	1	3.2	2.0	1.0	ug/L	08/17/2022 1049
4-Nitrophenol	4.0	U	1	5.0	4.0	2.0	ug/L	08/17/2022 1049
N-Nitrosodi-n-propylamine	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
N-Nitrosodiphenylamine (Diphenylamine)	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Pentachlorophenol	4.0	U	1	5.0	4.0	2.0	ug/L	08/17/2022 1049
Phenanthrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Phenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
2,4,5-Trichlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
2,4,6-Trichlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		84	44-119
2-Fluorophenol		46	19-119
Nitrobenzene-d5		81	44-120
Phenol-d5		58	10-115
Terphenyl-d14		101	50-134
2,4,6-Tribromophenol		86	43-140

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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ50961-002
Batch: 50961
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/12/2022 1750

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acenaphthene	8.0	6.2		1	77	47-122	08/17/2022 1114
Acenaphthylene	8.0	6.8		1	85	41-130	08/17/2022 1114
Acetophenone	8.0	6.7		1	83	46-118	08/17/2022 1114
Anthracene	8.0	6.9		1	87	57-123	08/17/2022 1114
Atrazine	8.0	7.3		1	91	44-142	08/17/2022 1114
Benzaldehyde	8.0	6.2		1	78	20-115	08/17/2022 1114
Benzo(a)anthracene	8.0	7.3		1	91	58-125	08/17/2022 1114
Benzo(a)pyrene	8.0	7.1		1	88	54-128	08/17/2022 1114
Benzo(b)fluoranthene	8.0	7.3		1	91	53-131	08/17/2022 1114
Benzo(g,h,i)perylene	8.0	8.2		1	103	50-134	08/17/2022 1114
Benzo(k)fluoranthene	8.0	7.1		1	89	57-129	08/17/2022 1114
1,1'-Biphenyl	8.0	6.0		1	75	49-115	08/17/2022 1114
4-Bromophenyl phenyl ether	8.0	6.9		1	86	55-124	08/17/2022 1114
Butyl benzyl phthalate	8.0	8.4		1	105	53-134	08/17/2022 1114
Caprolactam	8.0	7.6		1	95	44-152	08/17/2022 1114
Carbazole	8.0	7.5		1	94	60-122	08/17/2022 1114
bis (2-Chloro-1-methylethyl) ether	8.0	7.3		1	91	37-130	08/17/2022 1114
4-Chloro-3-methyl phenol	8.0	6.6		1	83	52-119	08/17/2022 1114
4-Chloroaniline	8.0	6.1		1	77	33-117	08/17/2022 1114
bis(2-Chloroethoxy)methane	8.0	6.2		1	78	48-120	08/17/2022 1114
bis(2-Chloroethyl)ether	8.0	7.0		1	87	43-118	08/17/2022 1114
2-Chloronaphthalene	8.0	6.1		1	76	40-116	08/17/2022 1114
2-Chlorophenol	8.0	6.7		1	84	38-117	08/17/2022 1114
4-Chlorophenyl phenyl ether	8.0	6.7		1	83	53-121	08/17/2022 1114
Chrysene	8.0	6.9		1	87	59-123	08/17/2022 1114
Dibenzo(a,h)anthracene	8.0	7.8		1	97	51-134	08/17/2022 1114
Dibenzofuran	8.0	6.0		1	74	53-118	08/17/2022 1114
3,3'-Dichlorobenzidine	8.0	4.8		1	60	27-129	08/17/2022 1114
2,4-Dichlorophenol	8.0	6.2		1	77	47-121	08/17/2022 1114
Diethylphthalate	8.0	7.2		1	90	56-125	08/17/2022 1114
Dimethyl phthalate	8.0	7.0		1	88	45-127	08/17/2022 1114
2,4-Dimethylphenol	8.0	6.2		1	78	31-124	08/17/2022 1114
Di-n-butyl phthalate	8.0	7.9		1	98	59-127	08/17/2022 1114
4,6-Dinitro-2-methylphenol	8.0	5.3		1	66	44-137	08/17/2022 1114
2,4-Dinitrophenol	16	4.6		1	28	23-143	08/17/2022 1114
2,4-Dinitrotoluene	8.0	6.9		1	86	57-128	08/17/2022 1114
2,6-Dinitrotoluene	8.0	6.5		1	82	57-124	08/17/2022 1114
Di-n-octylphthalate	8.0	7.4		1	92	51-140	08/17/2022 1114
bis(2-Ethylhexyl)phthalate	8.0	9.6		1	119	55-135	08/17/2022 1114
Fluoranthene	8.0	7.3		1	91	57-128	08/17/2022 1114
Fluorene	8.0	6.4		1	80	52-124	08/17/2022 1114
Hexachlorobenzene	8.0	6.5		1	81	53-125	08/17/2022 1114
Hexachlorobutadiene	8.0	5.3		1	66	22-124	08/17/2022 1114
Hexachlorocyclopentadiene	40	20		1	50	16-96	08/17/2022 1114

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P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ50961-002
Batch: 50961
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/12/2022 1750

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Hexachloroethane	8.0	5.5		1	69	21-115	08/17/2022 1114
Indeno(1,2,3-c,d)pyrene	8.0	7.7		1	96	52-134	08/17/2022 1114
Isophorone	8.0	5.9		1	73	42-124	08/17/2022 1114
2-Methylnaphthalene	8.0	6.0		1	75	40-121	08/17/2022 1114
2-Methylphenol	8.0	7.1		1	89	30-117	08/17/2022 1114
3+4-Methylphenol	8.0	7.0		1	88	29-110	08/17/2022 1114
Naphthalene	8.0	6.1		1	77	40-121	08/17/2022 1114
2-Nitroaniline	8.0	7.5		1	93	55-127	08/17/2022 1114
3-Nitroaniline	8.0	5.7		1	71	41-128	08/17/2022 1114
4-Nitroaniline	8.0	6.7		1	83	30-135	08/17/2022 1114
Nitrobenzene	8.0	5.2		1	65	45-121	08/17/2022 1114
2-Nitrophenol	8.0	6.1		1	77	47-123	08/17/2022 1114
4-Nitrophenol	16	14		1	86	53-130	08/17/2022 1114
N-Nitrosodi-n-propylamine	8.0	7.1		1	89	49-119	08/17/2022 1114
N-Nitrosodiphenylamine (Diphenylamine)	8.0	7.8		1	97	51-123	08/17/2022 1114
Pentachlorophenol	16	9.9		1	62	35-138	08/17/2022 1114
Phenanthrene	8.0	6.8		1	84	59-120	08/17/2022 1114
Phenol	8.0	7.1		1	88	49-117	08/17/2022 1114
Pyrene	8.0	7.1		1	89	57-126	08/17/2022 1114
2,4,5-Trichlorophenol	8.0	6.4		1	81	53-123	08/17/2022 1114
2,4,6-Trichlorophenol	8.0	6.7		1	84	50-125	08/17/2022 1114

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		75	44-119
2-Fluorophenol		72	19-119
Nitrobenzene-d5		76	44-120
Phenol-d5		79	10-115
Terphenyl-d14		86	50-134
2,4,6-Tribromophenol		89	43-140

LOQ = Limit of Quantitation
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P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Dissolved Gases - MB

Sample ID: XQ51425-001
Batch: 51425
Analytical Method: RSK - 175
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Ethane	5.0	U	1	10	5.0	2.5	ug/L	08/17/2022 1458
Ethene	5.0	U	1	10	5.0	2.5	ug/L	08/17/2022 1458
Methane	**3.1**	**J**	**1**	**10**	5.0	**2.5**	**ug/L**	**08/17/2022 1458**

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Dissolved Gases - LCS

Sample ID: XQ51425-002
Batch: 51425
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Ethane	550	550		1	99	74-131	08/17/2022 1252
Ethene	520	510		1	100	72-133	08/17/2022 1252
Methane	300	310		1	105	73-125	08/17/2022 1252

LOQ = Limit of Quantitation
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LOD = Limit of Detection

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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Dissolved Gases - LCSD

Sample ID: XQ51425-003
Batch: 51425
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Ethane	550	540		1	98	0.90	74-131	30	08/17/2022 1306
Ethene	520	510		1	99	0.71	72-133	30	08/17/2022 1306
Methane	300	310		1	106	0.90	73-125	30	08/17/2022 1306

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MB

Sample ID: XQ50907-001
Batch: 50907
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 08/15/2022 0850

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Arsenic	2.5	U	1	5.0	2.5	1.3	ug/L	09/01/2022 0123
Barium	2.5	U	1	5.0	2.5	1.3	ug/L	09/01/2022 0123
Cadmium	0.25	U	1	0.50	0.25	0.13	ug/L	09/01/2022 0123
Chromium	2.5	U	1	5.0	2.5	1.3	ug/L	09/01/2022 0123
Lead	0.50	U	1	1.0	0.50	0.25	ug/L	09/01/2022 0123
Selenium	2.5	U	1	5.0	2.5	1.3	ug/L	09/01/2022 0123
Silver	0.50	U	1	1.0	0.50	0.25	ug/L	09/01/2022 0123

LOQ = Limit of Quantitation
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* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - LCS

Sample ID: XQ50907-002
Batch: 50907
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 08/15/2022 0850

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Arsenic	100	100		1	101	84-116	09/01/2022 0132
Barium	100	100		1	102	86-114	09/01/2022 0132
Cadmium	100	99		1	99	87-115	09/01/2022 0132
Chromium	100	110		1	110	85-116	09/01/2022 0132
Lead	100	110		1	109	88-115	09/01/2022 0132
Selenium	100	86		1	86	80-120	09/01/2022 0132
Silver	100	110		1	112	85-116	09/01/2022 0132

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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MB

Sample ID: XQ51007-001
Batch: 51007
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 08/13/2022 1352

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Mercury	0.18	U	1	0.20	0.18	0.091	ug/L	08/13/2022 1721

LOQ = Limit of Quantitation
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LOD = Limit of Detection

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* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - LCS

Sample ID: XQ51007-002
Batch: 51007
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 08/13/2022 1352

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Mercury	2.0	2.0		1	102	82-119	08/13/2022 1724

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N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Chain of Custody
and
Miscellaneous Documents

Pace Analytical®

PACE ANALYTICAL SERVICES, LLC
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.pacelabs.com

Number 137982

Client: Terrasen Consultants
Address: 2401 Brentwood Rd, Suite 102
City: Raleigh | State: NC | Zip Code: 27604
Project Name: TAMP
Project No.: 7021PHS
P.O. No.:

Report to Contact: Ethan.Dinwiddie@Terrasen.com
Sampler's Signature: [signature]
Printed Name: Ethan Dinwiddie

Telephone No. / E-mail: Don.Malone@Terrasen.com
Analysis (Attach list if more space is needed)

Quote No.: 25322
Page 1 of 1
XH11019
CSD

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	Grab/Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non Aqueous	No of Containers by Preservative Type: Unpres.	H2SO4	HNO3	HCl	NaOH	NaOH/ZnAc	Field Filtered	VOCs 8260	SVOCs 8270	RCRA 8 Metals	TOC 9060	Dissolved Gases RSK-175					Remarks / Cooler I.D.
MW-141	8/10	845	G	X			2	1	1	5				X	X	X	X	X					
MW-139	↓	1100	G	X			2	1	1	5				X	X	X	X	X					
MW-120	↓	1300	G	X			2	1	1	5				X	X	X	X	X					
MW-136	↓	1635	G	X						3				X									
FB-02	↓	1530	G	X						3				X									
TB-07	↓	—	G	X						2				X									
DUP-GW-01	↓	—	G	X			2	1	1	5				X	X	X	X	X					

Turn Around Time Required (Prior lab approval required for expedited TAT.)
☒ Standard ☐ Rush (Specify)

Sample Disposal
☐ Return to Client ☒ Disposal by Lab

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☒ Unknown

QC Requirements (Specify)

	Date	Time
1. Relinquished by [signature]	8/10	2000
2. Relinquished by		
3. Relinquished by		
4. Relinquished by Fedex	08/11/22	1015

	Date	Time
1. Received by		
2. Received by		
3. Received by		
4. Laboratory received by Thayla N Roberts	08/11/22	1015

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on ice (Circle) Yes No Ice Pack
Receipt Temp. 4.5 °C
Temp Blank ☐ Y ☐ N

Document Number: ME003N2-01

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

DC#_Title: ENV-FRM-WCOL-0286 v02_Samples Receipt Checklist (SRC)
Effective Date: 8/2/2022

Sample Receipt Checklist (SRC)

Client: Terracon Cooler Inspected by/date: KNR / 08/11/2022 Lot #: XH11019

Means of receipt: ☐ Pace ☐ Client ☐ UPS ☑ FedEx ☐ Other: _____

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: 22-1645 Chlorine Strip ID: NA Tested by: CER
Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA
4.5 / 4.5 °C NA / NA °C NA / NA °C NA / NA °C
Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 8 IR Gun Correction Factor: 0 °C
Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☑ Yes	☐ No	☐ NA	3. Were all coolers received at or below 6.0°C? If no, was Project Manager notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☑ No	☐ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC and all sample containers?
☑ Yes	☐ No		7. Was collection date & time listed on the COC and all sample containers?
☑ Yes	☐ No		8. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		9. Were tests to be performed listed on the COC?
☑ Yes	☐ No		10. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? _____
☑ Yes	☐ No		11. Was adequate sample volume available?
☑ Yes	☐ No		12. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☑ Yes	☐ No		13. Were all samples containers accounted for? (No missing/excess)
☑ Yes	☐ No	☐ NA	14. Were VOA, 8015C and RSK-175 samples free of bubbles >"pea-size" (¼" or 6mm in diameter) in any of the VOA vials?
☑ Yes	☐ No	☐ NA	15. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	16. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	17. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☑ Yes	☐ No	☐ NA	18. Was the quote number listed on the container label? If yes, Quote # 35322

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA _____ were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA. ☐
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA _____ were received with bubbles >6 mm in diameter.

Samples(s) NA _____ were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Unique ID: NA.

Comments:

Qualtrax ID: 56360 Pace® Analytical Services, LLC Page 1 of 1

Report of Analysis

Terracon Consultants, Inc.
2401 Brentwood Road
Suite 107 I
Raleigh, NC 27604
Attention: Ethan Dinwiddie

Project Name: TAMP

Project Number: 7021P145

Lot Number:**XH11020**

Date Completed:09/02/2022

09/13/2022 9:59 PM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.
This report shall not be reproduced, except in its entirety, without the written approval of Pace Analytical Services, LLC.

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
Terracon Consultants, Inc.
Lot Number: XH11020

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Additionally, the DoD QSM version 5.3 has been followed for these samples. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs, the DoD QSM, or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

VOA 8260D

The continuing calibration verification (CCV; batch 51770) associated with samples XH11020-009 (MW-119), XH11020-010 (MW-122), XH11020-011(MW-124), XH11020-012 (FB-01), XH11020-013 (TB-04), XH11020-014 (MW-101), XH11020-015 (MW-117), XH11020-018 (EB-GW-02), and XH11020-019 (EB-GW-01) for analyte(s): Acetone and 2-Butanone (MEK) recovered above the upper control limit. The samples associated with this CCV were non-detect for the affected analytes; therefore, the data has been reported.

The closing continuing calibration verification (CCV; batch 51688) associated with samples: XH11020-001 (MW-107), XH11020-002 (DUP-GW-02), XH11020-005 (TB-06), XH11020-006 (MW-138), XH11020-007 (MW-127), and XH11020-008 (MW-133), was not analyzed at end of sequence. The MSD run at the end of the sequence was copied and processed as a 8260 closing CCV. The CCV passed acceptance criteria and the data has been reported.

The continuing calibration verification (CCV; batch 51688) associated with samples XH11020-001 (MW-107), XH11020-002 (DUP-GW-02), XH11020-005 (TB-06), XH11020-006 (MW-138), XH11020-007 (MW-127), and XH11020-008 (MW-133), for Acetone (52.4%) recovered above the upper control limit. The samples associated with this CCV were non-detect for the affected analyte; therefore, the data has been reported.

Surrogate recovery for the MS and MSD associated with parent sample XH11020-001 (MW-107) and batch 51688 was outside control limits.

The closing continuing calibration verification (CCV) associated with samples XH11020-005 (TB-06) and XH11020-007 (MW-127), for analyte(s): Trichloroethene (372%) recovered above the upper control limit. The samples associated with this CCV were non-detect for the affected analyte; therefore, the data has been reported.

Reanalysis of the following sample(s) was performed outside of the analytical holding time: XH11020-002 (DUP-GW-02) and XH11020-005 (TB-06). The above samples were run outside of holding time due to Bromoform, and 1,2-dibromo-3-chloropropane failing low in the continuous calibration verification(CCV) in Run 1. They were also reanalyzed due to a high CCV of trichloroethene. Both runs have been reported.

Reanalysis of the following samples was performed outside of the analytical holding time: XH11020-001 (MW-107), XH11020-006 (MW-138), XH11020-007 (MW-127) and XH11020-008 (MW-133). The first run had Bromoform, 1,2-dibromo-3-chloropropane, and trichloroethene failed low in the continuous calibration verification (CCV). It also failed

in the ending CCV for this sequence. Both sets of results have been reported.

Sample XH11020-014 (MW-101) was received with air bubbles > 6 mm in the sample vials.

Reanalysis of sample XH11020-014 (MW-101) was performed outside of the analytical holding time. The sample was run outside of holding time due to there being suspected carryover from a previous sample for trichloroethene. Both runs have been reported.

The LCS for batch 52233 had Acetone and 2-Butanone recover marginally outside the upper control limit. The samples (XH11020-001 (MW-107), XH11020-006 (MW-138), and XH11020-008 (MW-133)) associated with this LCS are non-detect; therefore the data has been reported.

The MS/MSD for batch 51688 and parent sample XH11020-001 (MW-107), recovered outside the lower control limit for multiple analytes. The associated LCS passed acceptance criteria.

The RPD for the MS/MSD (for parent sample: XH11020-001 (MW-107)) is > 20% for Chloroethane. All of the spike recoveries passed acceptance criteria.

RSK 175 (Methane)
The MS for batch 50241and parent sample XH11020-016 (MW-109), recovered outside the lower limit. The associated LCS and MSD passed acceptance criteria.

SVOA 8270E
Surrogate recovery for the following samples was outside control limits: XH11020-014 (MW-101) and XH11020-015 (MW-117). Re-extraction was performed outside of holding time with acceptable results. The LCS for batch 51699 had 3,3'-Dichlorobenzidine and 3-Nitroaniline recover outside the control limits. This was on the re-extract, Run 2 analysis. Both sets of data have been reported.

The MS/MSD for batch 51409 and parent sample XH11020-018 (EB-GW-02), recovered outside the upper control limit for 2-Methylphenol. The associated LCS passed the acceptance criteria.

The MS for batch 50961 and parent sample XH11020-004 (MW-109), recovered outside the control limits for 3,3'-Dichlorobenzidine and 3-Nitroaniline. The MSD recovered marginally outside the lower control limit for 3,3'-Dichlorobenzidine. The associated LCS passed acceptance criteria.

The MS for batch 50961 and parent sample XH11020-003 (MW-119), recovered outside control limits for multiple analytes. The MSD recovered marginally outside the lower control limit. The LCS passed acceptance criteria.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Sample Summary
Terracon Consultants, Inc.
Lot Number: XH11020

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	MW-107	Aqueous	08/10/2022 1345	08/11/2022
002	DUP-GW-02	Aqueous	08/10/2022	08/11/2022
003	MW-119	Aqueous	08/09/2022 1630	08/11/2022
004	MW-109	Aqueous	08/09/2022 1445	08/11/2022
005	TB-06	Aqueous	08/10/2022	08/11/2022
006	MW-138	Aqueous	08/09/2022 1430	08/11/2022
007	MW-127	Aqueous	08/09/2022 1530	08/11/2022
008	MW-133	Aqueous	08/09/2022 1545	08/11/2022
009	MW-119	Aqueous	08/09/2022 1630	08/11/2022
010	MW-122	Aqueous	08/09/2022 1745	08/11/2022
011	MW-124	Aqueous	08/10/2022 1005	08/11/2022
012	FB-01	Aqueous	08/10/2022 1245	08/11/2022
013	TB-04	Aqueous	08/10/2022	08/11/2022
014	MW-101	Aqueous	08/09/2022 1610	08/11/2022
015	MW-117	Aqueous	08/09/2022 1515	08/11/2022
016	MW-109	Aqueous	08/09/2022 1445	08/11/2022
017	TB-05	Aqueous	08/10/2022	
018	EB-GW-02	Aqueous	08/10/2022 1700	08/11/2022
019	EB-GW-01	Aqueous	08/10/2022 1600	08/11/2022

(19 samples)

Detection Summary
Terracon Consultants, Inc.
Lot Number: XH11020

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	MW-107	Aqueous	TOC	SM 5310C-	2300		ug/L	7
001	MW-107	Aqueous	1,1-Dichloroethane	8260D	9.9	J	ug/L	8
001	MW-107	Aqueous	cis-1,2-Dichloroethene	8260D	360		ug/L	8
001	MW-107	Aqueous	Tetrachloroethene	8260D	160		ug/L	8
001	MW-107	Aqueous	1,1,2-Trichloro-1,2,2-	8260D	60		ug/L	8
001	MW-107	Aqueous	Trichloroethene	8260D	4600	H	ug/L	11
001	MW-107	Aqueous	Di-n-butyl phthalate	8270E	0.53	J	ug/L	12
001	MW-107	Aqueous	Methane	RSK - 175	8.2	J	ug/L	14
001	MW-107	Aqueous	Barium	6020B	36		ug/L	15
001	MW-107	Aqueous	Lead	6020B	0.61	J	ug/L	15
002	DUP-GW-02	Aqueous	cis-1,2-Dichloroethene	8260D	410		ug/L	16
002	DUP-GW-02	Aqueous	Tetrachloroethene	8260D	260		ug/L	16
002	DUP-GW-02	Aqueous	1,1,2-Trichloro-1,2,2-	8260D	83		ug/L	16
002	DUP-GW-02	Aqueous	Trichloroethene	8260D	5100	H	ug/L	19
002	DUP-GW-02	Aqueous	Di-n-butyl phthalate	8270E	0.81	J	ug/L	20
002	DUP-GW-02	Aqueous	Barium	6020B	36		ug/L	22
002	DUP-GW-02	Aqueous	Lead	6020B	0.57	J	ug/L	22
004	MW-109	Aqueous	Anthracene	8270E	0.090	J	ug/L	25
005	TB-06	Aqueous	Acetone	8260D	6.5	J	ug/L	27
005	TB-06	Aqueous	Chloromethane (Methyl	8260D	0.57	J	ug/L	27
006	MW-138	Aqueous	Acetone	8260D	7.7	J	ug/L	31
006	MW-138	Aqueous	Chloroform	8260D	1.6		ug/L	31
006	MW-138	Aqueous	Trichloroethene	8260D	5.2	H	ug/L	34
007	MW-127	Aqueous	Acetone	8260D	10	J	ug/L	35
007	MW-127	Aqueous	Chloromethane (Methyl	8260D	0.79	J	ug/L	35
007	MW-127	Aqueous	cis-1,2-Dichloroethene	8260D	1.4		ug/L	35
007	MW-127	Aqueous	Trichloroethene	8260D	0.59	J	ug/L	36
008	MW-133	Aqueous	cis-1,2-Dichloroethene	8260D	3.7		ug/L	39
008	MW-133	Aqueous	Trichloroethene	8260D	2.3	H	ug/L	42
009	MW-119	Aqueous	Barium	6020B	97		ug/L	45
009	MW-119	Aqueous	Chromium	6020B	1.5	J	ug/L	45
010	MW-122	Aqueous	Chloromethane (Methyl	8260D	0.80	J	ug/L	46
010	MW-122	Aqueous	cis-1,2-Dichloroethene	8260D	5.7		ug/L	46
010	MW-122	Aqueous	Methyl tertiary butyl ether	8260D	0.48	J	ug/L	46
010	MW-122	Aqueous	Trichloroethene	8260D	100		ug/L	47
011	MW-124	Aqueous	Acetone	8260D	5.0	J	ug/L	48
011	MW-124	Aqueous	Benzene	8260D	0.57	J	ug/L	48
011	MW-124	Aqueous	Cyclohexane	8260D	0.51	J	ug/L	48
011	MW-124	Aqueous	1,1-Dichloroethane	8260D	1.1		ug/L	48
011	MW-124	Aqueous	1,2-Dichloroethane	8260D	0.76	J	ug/L	48
011	MW-124	Aqueous	1,1-Dichloroethene	8260D	2.9		ug/L	48
011	MW-124	Aqueous	cis-1,2-Dichloroethene	8260D	2.9		ug/L	48
011	MW-124	Aqueous	Tetrachloroethene	8260D	1.4		ug/L	48
011	MW-124	Aqueous	1,1,2-Trichloro-1,2,2-	8260D	2.2		ug/L	48
011	MW-124	Aqueous	Trichloroethene	8260D	140		ug/L	49

Detection Summary (Continued)

Lot Number: XH11020

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
012	FB-01	Aqueous	Acetone	8260D	13	J	ug/L	50
012	FB-01	Aqueous	Methylene chloride	8260D	2.7		ug/L	50
013	TB-04	Aqueous	Acetone	8260D	5.2	J	ug/L	52
014	MW-101	Aqueous	Chloromethane (Methyl	8260D	0.72	J	ug/L	54
014	MW-101	Aqueous	1,1-Dichloroethene	8260D	0.54	J	ug/L	54
014	MW-101	Aqueous	cis-1,2-Dichloroethene	8260D	0.94	J	ug/L	54
014	MW-101	Aqueous	Tetrachloroethene	8260D	7.3		ug/L	54
014	MW-101	Aqueous	Trichloroethene	8260D	5.1	H	ug/L	57
014	MW-101	Aqueous	Barium	6020B	98		ug/L	62
014	MW-101	Aqueous	Cadmium	6020B	0.65		ug/L	62
014	MW-101	Aqueous	Lead	6020B	1.1		ug/L	62
014	MW-101	Aqueous	Selenium	6020B	2.2	J	ug/L	62
015	MW-117	Aqueous	cis-1,2-Dichloroethene	8260D	8.5		ug/L	63
015	MW-117	Aqueous	Tetrachloroethene	8260D	1.6		ug/L	63
015	MW-117	Aqueous	Trichloroethene	8260D	12		ug/L	64
015	MW-117	Aqueous	Vinyl chloride	8260D	3.5		ug/L	64
015	MW-117	Aqueous	Arsenic	6020B	1.4	J	ug/L	69
015	MW-117	Aqueous	Barium	6020B	61		ug/L	69
015	MW-117	Aqueous	Cadmium	6020B	0.15	J	ug/L	69
015	MW-117	Aqueous	Lead	6020B	1.5		ug/L	69
016	MW-109	Aqueous	TOC	SM 5310C-	4000		ug/L	70
016	MW-109	Aqueous	Acetone	8260D	11	J	ug/L	71
016	MW-109	Aqueous	Benzene	8260D	0.78	J	ug/L	71
016	MW-109	Aqueous	Chloroethane	8260D	1.5	J	ug/L	71
016	MW-109	Aqueous	Cyclohexane	8260D	0.89	J	ug/L	71
016	MW-109	Aqueous	1,1-Dichloroethane	8260D	0.63	J	ug/L	71
016	MW-109	Aqueous	cis-1,2-Dichloroethene	8260D	19		ug/L	71
016	MW-109	Aqueous	trans-1,2-Dichloroethene	8260D	1.8		ug/L	71
016	MW-109	Aqueous	Methyl tertiary butyl ether	8260D	10		ug/L	71
016	MW-109	Aqueous	Methylcyclohexane	8260D	0.49	J	ug/L	71
016	MW-109	Aqueous	Vinyl chloride	8260D	57		ug/L	72
016	MW-109	Aqueous	Ethene	RSK - 175	5.6	J	ug/L	73
016	MW-109	Aqueous	Methane	RSK - 175	760	S	ug/L	73
016	MW-109	Aqueous	Barium	6020B	170		ug/L	74
016	MW-109	Aqueous	Cadmium	6020B	0.13	J	ug/L	74
016	MW-109	Aqueous	Lead	6020B	0.64	J	ug/L	74
018	EB-GW-02	Aqueous	Acetone	8260D	5.8	J	ug/L	75
018	EB-GW-02	Aqueous	Benzaldehyde	8270E	0.76	J	ug/L	77
018	EB-GW-02	Aqueous	Caprolactam	8270E	3.1		ug/L	77
019	EB-GW-01	Aqueous	Acetone	8260D	10	J	ug/L	79
019	EB-GW-01	Aqueous	Methylene chloride	8260D	2.1		ug/L	79
019	EB-GW-01	Aqueous	Caprolactam	8270E	15		ug/L	81
019	EB-GW-01	Aqueous	Barium	6020B	3.6	J	ug/L	83

(88 detections)

Inorganic non-metals

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-001**
Description: **MW-107**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1345**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(TOC) SM 5310C-2011	1	08/29/2022 2345	CMM		52525

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
TOC		**SM 5310C-2011**	**2300**		**2000**	1500	**600**	**ug/L**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11020-001**

Description: **MW-107** Matrix: **Aqueous**

Date Sampled: **08/10/2022 1345**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	20	08/19/2022 1746	JWO		51688
2	5030B	8260D	50	08/25/2022 1607	JWO		52233

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	200	U	400	200	100	ug/L	1
Benzene	71-43-2	8260D	16	U	20	16	8.0	ug/L	1
Bromodichloromethane	75-27-4	8260D	16	US	20	16	8.0	ug/L	1
Bromoform	75-25-2	8260D	16	US	20	16	8.0	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	16	U	40	16	8.0	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	80	U	200	80	40	ug/L	1
Carbon disulfide	75-15-0	8260D	16	U	20	16	8.0	ug/L	1
Carbon tetrachloride	56-23-5	8260D	16	U	20	16	8.0	ug/L	1
Chlorobenzene	108-90-7	8260D	16	US	20	16	8.0	ug/L	1
Chloroethane	75-00-3	8260D	16	U	40	16	8.0	ug/L	1
Chloroform	67-66-3	8260D	16	U	20	16	8.0	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	20	U	40	20	10	ug/L	1
Cyclohexane	110-82-7	8260D	16	U	20	16	8.0	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	16	US	20	16	8.0	ug/L	1
Dibromochloromethane	124-48-1	8260D	16	US	20	16	8.0	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	16	U	20	16	8.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	16	US	20	16	8.0	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	16	US	20	16	8.0	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	16	US	20	16	8.0	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	24	U	40	24	12	ug/L	1
1,1-Dichloroethane	**75-34-3**	**8260D**	**9.9**	**J**	**20**	16	**8.0**	**ug/L**	**1**
1,2-Dichloroethane	107-06-2	8260D	16	U	20	16	8.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	16	U	20	16	8.0	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**360**		**20**	16	**8.0**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	16	U	20	16	8.0	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	16	U	20	16	8.0	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	16	US	20	16	8.0	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	16	US	20	16	8.0	ug/L	1
Ethylbenzene	100-41-4	8260D	16	U	20	16	8.0	ug/L	1
2-Hexanone	591-78-6	8260D	80	U	200	80	40	ug/L	1
Isopropylbenzene	98-82-8	8260D	16	U	20	16	8.0	ug/L	1
Methyl acetate	79-20-9	8260D	16	U	20	16	8.0	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	16	U	20	16	8.0	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	80	U	200	80	40	ug/L	1
Methylcyclohexane	108-87-2	8260D	16	U	100	16	8.0	ug/L	1
Methylene chloride	75-09-2	8260D	16	U	20	16	8.0	ug/L	1
Styrene	100-42-5	8260D	16	U	20	16	8.2	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	16	U	20	16	8.0	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**160**		**20**	16	**8.0**	**ug/L**	**1**
Toluene	108-88-3	8260D	16	U	20	16	8.0	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**60**		**20**	17	**8.4**	**ug/L**	**1**
1,2,4-Trichlorobenzene	120-82-1	8260D	16	U	20	16	8.0	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	16	U	20	16	8.0	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-001**
Description: **MW-107**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1345**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	20	08/19/2022 1746	JWO		51688
2	5030B	8260D	50	08/25/2022 1607	JWO		52233

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	16	U	20	16	8.0	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**4200**	**ES**	**20**	16	**8.0**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	16	U	20	16	8.0	ug/L	1
Vinyl chloride	75-01-4	8260D	16	U	20	16	8.0	ug/L	1
Xylenes (total)	1330-20-7	8260D	16	U	20	16	8.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		98	81-118	H	110	81-118
Bromofluorobenzene		99	85-114	H	102	85-114
Toluene-d8		99	89-112	H	108	89-112
Dibromofluoromethane		95	80-119	H	110	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-001**
Description: **MW-107**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1345**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	20	08/19/2022 1746	JWO		51688
2	5030B	8260D	50	08/25/2022 1607	JWO		52233

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	500	UHL	1000	500	250	ug/L	2
Benzene	71-43-2	8260D	40	UH	50	40	20	ug/L	2
Bromodichloromethane	75-27-4	8260D	40	UH	50	40	20	ug/L	2
Bromoform	75-25-2	8260D	40	UH	50	40	20	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	40	UH	100	40	20	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	200	UHL	500	200	100	ug/L	2
Carbon disulfide	75-15-0	8260D	40	UH	50	40	20	ug/L	2
Carbon tetrachloride	56-23-5	8260D	40	UH	50	40	20	ug/L	2
Chlorobenzene	108-90-7	8260D	40	UH	50	40	20	ug/L	2
Chloroethane	75-00-3	8260D	40	UH	100	40	20	ug/L	2
Chloroform	67-66-3	8260D	40	UH	50	40	20	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	50	UH	100	50	25	ug/L	2
Cyclohexane	110-82-7	8260D	40	UH	50	40	20	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	40	UH	50	40	20	ug/L	2
Dibromochloromethane	124-48-1	8260D	40	UH	50	40	20	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	40	UH	50	40	20	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	40	UH	50	40	20	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	40	UH	50	40	20	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	40	UH	50	40	20	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	60	UH	100	60	30	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	40	UH	50	40	20	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	40	UH	50	40	20	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	40	UH	50	40	20	ug/L	2
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**420**	**H**	**50**	40	**20**	**ug/L**	**2**
trans-1,2-Dichloroethene	156-60-5	8260D	40	UH	50	40	20	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	40	UH	50	40	20	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	40	UH	50	40	20	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	40	UH	50	40	20	ug/L	2
Ethylbenzene	100-41-4	8260D	40	UH	50	40	20	ug/L	2
2-Hexanone	591-78-6	8260D	200	UH	500	200	100	ug/L	2
Isopropylbenzene	98-82-8	8260D	40	UH	50	40	20	ug/L	2
Methyl acetate	79-20-9	8260D	40	UH	50	40	20	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	40	UH	50	40	20	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	200	UH	500	200	100	ug/L	2
Methylcyclohexane	108-87-2	8260D	40	UH	250	40	20	ug/L	2
Methylene chloride	75-09-2	8260D	40	UH	50	40	20	ug/L	2
Styrene	100-42-5	8260D	41	UH	50	41	21	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	40	UH	50	40	20	ug/L	2
Tetrachloroethene	**127-18-4**	**8260D**	**150**	**H**	**50**	40	**20**	**ug/L**	**2**
Toluene	108-88-3	8260D	40	UH	50	40	20	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	42	UH	50	42	21	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	40	UH	50	40	20	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	40	UH	50	40	20	ug/L	2

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-001**
Description: **MW-107**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1345**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	20	08/19/2022 1746	JWO		51688
2	5030B	8260D	50	08/25/2022 1607	JWO		52233

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	40	UH	50	40	20	ug/L	2
Trichloroethene	**79-01-6**	**8260D**	**4600**	**H**	**50**	40	**20**	**ug/L**	**2**
Trichlorofluoromethane	75-69-4	8260D	40	UH	50	40	20	ug/L	2
Vinyl chloride	75-01-4	8260D	40	UH	50	40	20	ug/L	2
Xylenes (total)	1330-20-7	8260D	40	UH	50	40	20	ug/L	2

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		98	81-118	H	110	81-118
Bromofluorobenzene		99	85-114	H	102	85-114
Toluene-d8		99	89-112	H	108	89-112
Dibromofluoromethane		95	80-119	H	110	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11020-001**

Description: **MW-107** Matrix: **Aqueous**

Date Sampled: **08/10/2022 1345**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/18/2022 1144	CMF	08/12/2022 1750	50961

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	**84-74-2**	**8270E**	**0.53**	**J**	**1.6**	1.0	**0.50**	**ug/L**	**1**
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation
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E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-001**
Description: **MW-107**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1345**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/18/2022 1144	CMF	08/12/2022 1750	50961

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		57	44-119
2-Fluorophenol		31	19-119
Nitrobenzene-d5		52	44-120
Phenol-d5		39	10-115
Terphenyl-d14		80	50-134
2,4,6-Tribromophenol		68	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Dissolved Gases

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-001**
Description: **MW-107**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1345**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	08/19/2022 2335	BBW		51742
2		RSK - 175	1	08/23/2022 2207	BBW		52041

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Ethane	74-84-0	RSK - 175	5.0	U	10	5.0	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	5.0	U	10	5.0	2.5	ug/L	1
Methane	**74-82-8**	**RSK - 175**	**8.2**	**J**	**10**	5.0	**2.5**	**ug/L**	**2**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-001**
Description: **MW-107**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1345**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	09/01/2022 0315	BNW	08/15/2022 0850	50907
1		7470A	1	08/13/2022 1801	MRW2	08/13/2022 1352	51007

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**36**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	7440-43-9	6020B	0.25	U	0.50	0.25	0.13	ug/L	1
Chromium	7440-47-3	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Lead	**7439-92-1**	**6020B**	**0.61**	**J**	**1.0**	0.50	**0.25**	**ug/L**	**1**
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-002**
Description: **DUP-GW-02**
Matrix: **Aqueous**
Date Sampled: **08/10/2022**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	50	08/19/2022 1855	JWO		51688
2	5030B	8260D	50	08/26/2022 0435	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	500	U	1000	500	250	ug/L	1
Benzene	71-43-2	8260D	40	U	50	40	20	ug/L	1
Bromodichloromethane	75-27-4	8260D	40	U	50	40	20	ug/L	1
Bromoform	75-25-2	8260D	40	U	50	40	20	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	40	U	100	40	20	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	200	U	500	200	100	ug/L	1
Carbon disulfide	75-15-0	8260D	40	U	50	40	20	ug/L	1
Carbon tetrachloride	56-23-5	8260D	40	U	50	40	20	ug/L	1
Chlorobenzene	108-90-7	8260D	40	U	50	40	20	ug/L	1
Chloroethane	75-00-3	8260D	40	U	100	40	20	ug/L	1
Chloroform	67-66-3	8260D	40	U	50	40	20	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	50	U	100	50	25	ug/L	1
Cyclohexane	110-82-7	8260D	40	U	50	40	20	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	40	U	50	40	20	ug/L	1
Dibromochloromethane	124-48-1	8260D	40	U	50	40	20	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	40	U	50	40	20	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	40	U	50	40	20	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	40	U	50	40	20	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	40	U	50	40	20	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	60	U	100	60	30	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	40	U	50	40	20	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	40	U	50	40	20	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	40	U	50	40	20	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**410**		**50**	40	**20**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	40	U	50	40	20	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	40	U	50	40	20	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	40	U	50	40	20	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	40	U	50	40	20	ug/L	1
Ethylbenzene	100-41-4	8260D	40	U	50	40	20	ug/L	1
2-Hexanone	591-78-6	8260D	200	U	500	200	100	ug/L	1
Isopropylbenzene	98-82-8	8260D	40	U	50	40	20	ug/L	1
Methyl acetate	79-20-9	8260D	40	U	50	40	20	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	40	U	50	40	20	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	200	U	500	200	100	ug/L	1
Methylcyclohexane	108-87-2	8260D	40	U	250	40	20	ug/L	1
Methylene chloride	75-09-2	8260D	40	U	50	40	20	ug/L	1
Styrene	100-42-5	8260D	41	U	50	41	21	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	40	U	50	40	20	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**260**		**50**	40	**20**	**ug/L**	**1**
Toluene	108-88-3	8260D	40	U	50	40	20	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**83**		**50**	42	**21**	**ug/L**	**1**
1,2,4-Trichlorobenzene	120-82-1	8260D	40	U	50	40	20	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	40	U	50	40	20	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-002**
Description: **DUP-GW-02**
Matrix: **Aqueous**
Date Sampled: **08/10/2022**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	50	08/19/2022 1855	JWO		51688
2	5030B	8260D	50	08/26/2022 0435	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	40	U	50	40	20	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**5300**		**50**	40	**20**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	40	U	50	40	20	ug/L	1
Vinyl chloride	75-01-4	8260D	40	U	50	40	20	ug/L	1
Xylenes (total)	1330-20-7	8260D	40	U	50	40	20	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		99	81-118	H	101	81-118
Bromofluorobenzene		101	85-114	H	98	85-114
Toluene-d8		97	89-112	H	102	89-112
Dibromofluoromethane		94	80-119	H	98	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11020-002**

Description: **DUP-GW-02** Matrix: **Aqueous**

Date Sampled: **08/10/2022**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	50	08/19/2022 1855	JWO		51688
2	5030B	8260D	50	08/26/2022 0435	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	500	UH	1000	500	250	ug/L	2
Benzene	71-43-2	8260D	40	UH	50	40	20	ug/L	2
Bromodichloromethane	75-27-4	8260D	40	UH	50	40	20	ug/L	2
Bromoform	75-25-2	8260D	40	UH	50	40	20	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	40	UH	100	40	20	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	200	UH	500	200	100	ug/L	2
Carbon disulfide	75-15-0	8260D	40	UH	50	40	20	ug/L	2
Carbon tetrachloride	56-23-5	8260D	40	UH	50	40	20	ug/L	2
Chlorobenzene	108-90-7	8260D	40	UH	50	40	20	ug/L	2
Chloroethane	75-00-3	8260D	40	UH	100	40	20	ug/L	2
Chloroform	67-66-3	8260D	40	UH	50	40	20	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	50	UH	100	50	25	ug/L	2
Cyclohexane	110-82-7	8260D	40	UH	50	40	20	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	40	UH	50	40	20	ug/L	2
Dibromochloromethane	124-48-1	8260D	40	UH	50	40	20	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	40	UH	50	40	20	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	40	UH	50	40	20	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	40	UH	50	40	20	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	40	UH	50	40	20	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	60	UH	100	60	30	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	40	UH	50	40	20	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	40	UH	50	40	20	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	40	UH	50	40	20	ug/L	2
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**420**	**H**	**50**	40	**20**	**ug/L**	**2**
trans-1,2-Dichloroethene	156-60-5	8260D	40	UH	50	40	20	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	40	UH	50	40	20	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	40	UH	50	40	20	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	40	UH	50	40	20	ug/L	2
Ethylbenzene	100-41-4	8260D	40	UH	50	40	20	ug/L	2
2-Hexanone	591-78-6	8260D	200	UH	500	200	100	ug/L	2
Isopropylbenzene	98-82-8	8260D	40	UH	50	40	20	ug/L	2
Methyl acetate	79-20-9	8260D	40	UH	50	40	20	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	40	UH	50	40	20	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	200	UH	500	200	100	ug/L	2
Methylcyclohexane	108-87-2	8260D	40	UH	250	40	20	ug/L	2
Methylene chloride	75-09-2	8260D	40	UH	50	40	20	ug/L	2
Styrene	100-42-5	8260D	41	UH	50	41	21	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	40	UH	50	40	20	ug/L	2
Tetrachloroethene	**127-18-4**	**8260D**	**220**	**H**	**50**	40	**20**	**ug/L**	**2**
Toluene	108-88-3	8260D	40	UH	50	40	20	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**78**	**H**	**50**	42	**21**	**ug/L**	**2**
1,2,4-Trichlorobenzene	120-82-1	8260D	40	UH	50	40	20	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	40	UH	50	40	20	ug/L	2

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
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H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-002**
Description: **DUP-GW-02**
Matrix: **Aqueous**
Date Sampled: **08/10/2022**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	50	08/19/2022 1855	JWO		51688
2	5030B	8260D	50	08/26/2022 0435	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	40	UH	50	40	20	ug/L	2
Trichloroethene	**79-01-6**	**8260D**	**5100**	**H**	**50**	40	**20**	**ug/L**	**2**
Trichlorofluoromethane	75-69-4	8260D	40	UH	50	40	20	ug/L	2
Vinyl chloride	75-01-4	8260D	40	UH	50	40	20	ug/L	2
Xylenes (total)	1330-20-7	8260D	40	UH	50	40	20	ug/L	2

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		99	81-118	H	101	81-118
Bromofluorobenzene		101	85-114	H	98	85-114
Toluene-d8		97	89-112	H	102	89-112
Dibromofluoromethane		94	80-119	H	98	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11020-002**

Description: **DUP-GW-02** Matrix: **Aqueous**

Date Sampled: **08/10/2022**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/18/2022 1209	CMF	08/12/2022 1750	50961

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	**84-74-2**	**8270E**	**0.81**	**J**	**1.6**	1.0	**0.50**	**ug/L**	**1**
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation | B = Detected in the method blank | E = Quantitation of compound exceeded the calibration range | DL = Detection Limit | Q = Surrogate failure

U = Not detected at or above the LOD | N = Recovery is out of criteria | P = The RPD between two GC columns exceeds 40% | J = Estimated result < LOQ and ≥ DL | L = LCS/LCSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-002**
Description: **DUP-GW-02**
Matrix: **Aqueous**
Date Sampled: **08/10/2022**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/18/2022 1209	CMF	08/12/2022 1750	50961

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		60	44-119
2-Fluorophenol		33	19-119
Nitrobenzene-d5		53	44-120
Phenol-d5		41	10-115
Terphenyl-d14		101	50-134
2,4,6-Tribromophenol		87	43-140

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H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-002**
Description: **DUP-GW-02**
Matrix: **Aqueous**
Date Sampled: **08/10/2022**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	09/01/2022 0324	BNW	08/15/2022 0850	50907
1		7470A	1	08/13/2022 1759	MRW2	08/13/2022 1352	51007

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**36**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	7440-43-9	6020B	0.25	U	0.50	0.25	0.13	ug/L	1
Chromium	7440-47-3	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Lead	**7439-92-1**	**6020B**	**0.57**	**J**	**1.0**	0.50	**0.25**	**ug/L**	**1**
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-003**
Description: **MW-119**
Matrix: **Aqueous**
Date Sampled: **08/09/2022 1630**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/18/2022 1233	CMF	08/12/2022 1750	50961

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	US	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	US	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	US	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	US	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	84-74-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	US	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	US	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	US	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-003**
Description: **MW-119**
Matrix: **Aqueous**
Date Sampled: **08/09/2022 1630**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/18/2022 1233	CMF	08/12/2022 1750	50961

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	US	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	US	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	US	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	US	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	US	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	US	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		61	44-119
2-Fluorophenol		34	19-119
Nitrobenzene-d5		55	44-120
Phenol-d5		44	10-115
Terphenyl-d14		94	50-134
2,4,6-Tribromophenol		72	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11020-004**

Description: **MW-109** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1445**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/18/2022 1640	CMF	08/12/2022 1750	50961

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	**120-12-7**	**8270E**	**0.090**	**J**	**0.20**	0.10	**0.040**	**ug/L**	**1**
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	US	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	84-74-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-004**
Description: **MW-109**
Matrix: **Aqueous**
Date Sampled: **08/09/2022 1445**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/18/2022 1640	CMF	08/12/2022 1750	50961

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	US	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		65	44-119
2-Fluorophenol		35	19-119
Nitrobenzene-d5		59	44-120
Phenol-d5		42	10-115
Terphenyl-d14		92	50-134
2,4,6-Tribromophenol		87	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11020-005**

Description: **TB-06** Matrix: **Aqueous**

Date Sampled: **08/10/2022**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1354	JWO		51688
2	5030B	8260D	1	08/25/2022 2227	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**6.5**	**J**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	**74-87-3**	**8260D**	**0.57**	**J**	**2.0**	1.0	**0.50**	**ug/L**	**1**
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-005**
Description: **TB-06**
Matrix: **Aqueous**
Date Sampled: **08/10/2022**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1354	JWO		51688
2	5030B	8260D	1	08/25/2022 2227	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		98	81-118	H	98	81-118
Bromofluorobenzene		100	85-114	H	101	85-114
Toluene-d8		97	89-112	H	99	89-112
Dibromofluoromethane		93	80-119	H	95	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11020-005**

Description: **TB-06** Matrix: **Aqueous**

Date Sampled: **08/10/2022**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1354	JWO		51688
2	5030B	8260D	1	08/25/2022 2227	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**11**	**HJ**	**20**	10	**5.0**	**ug/L**	**2**
Benzene	71-43-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromoform	75-25-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chloroethane	75-00-3	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
Chloroform	67-66-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	UH	2.0	1.0	0.50	ug/L	2
Cyclohexane	110-82-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	1.2	UH	2.0	1.2	0.60	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Methylcyclohexane	108-87-2	8260D	0.80	UH	5.0	0.80	0.40	ug/L	2
Methylene chloride	75-09-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Styrene	100-42-5	8260D	0.82	UH	1.0	0.82	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Tetrachloroethene	127-18-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Toluene	108-88-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	UH	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
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W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-005**
Description: **TB-06**
Matrix: **Aqueous**
Date Sampled: **08/10/2022**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1354	JWO		51688
2	5030B	8260D	1	08/25/2022 2227	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Trichloroethene	79-01-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Trichlorofluoromethane	75-69-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Vinyl chloride	75-01-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		98	81-118	H	98	81-118
Bromofluorobenzene		100	85-114	H	101	85-114
Toluene-d8		97	89-112	H	99	89-112
Dibromofluoromethane		93	80-119	H	95	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11020-006**

Description: **MW-138** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1430**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1614	JWO		51688
2	5030B	8260D	1	08/25/2022 1630	JWO		52233

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**7.7**	**J**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	**67-66-3**	**8260D**	**1.6**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
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LOD = Limit of Detection
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-006**
Description: **MW-138**
Matrix: **Aqueous**
Date Sampled: **08/09/2022 1430**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1614	JWO		51688
2	5030B	8260D	1	08/25/2022 1630	JWO		52233

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**2.9**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		97	81-118	H	111	81-118
Bromofluorobenzene		96	85-114	H	103	85-114
Toluene-d8		96	89-112	H	111	89-112
Dibromofluoromethane		91	80-119	H	109	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11020-006**

Description: **MW-138** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1430**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1614	JWO		51688
2	5030B	8260D	1	08/25/2022 1630	JWO		52233

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	UHL	20	10	5.0	ug/L	2
Benzene	71-43-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromoform	75-25-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	4.0	UHL	10	4.0	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chloroethane	75-00-3	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
Chloroform	**67-66-3**	**8260D**	**1.7**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	UH	2.0	1.0	0.50	ug/L	2
Cyclohexane	110-82-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	1.2	UH	2.0	1.2	0.60	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Methylcyclohexane	108-87-2	8260D	0.80	UH	5.0	0.80	0.40	ug/L	2
Methylene chloride	75-09-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Styrene	100-42-5	8260D	0.82	UH	1.0	0.82	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Tetrachloroethene	127-18-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Toluene	108-88-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	UH	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-006**
Description: **MW-138**
Matrix: **Aqueous**
Date Sampled: **08/09/2022 1430**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1614	JWO		51688
2	5030B	8260D	1	08/25/2022 1630	JWO		52233

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Trichloroethene	**79-01-6**	**8260D**	**5.2**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Trichlorofluoromethane	75-69-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Vinyl chloride	75-01-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		97	81-118	H	111	81-118
Bromofluorobenzene		96	85-114	H	103	85-114
Toluene-d8		96	89-112	H	111	89-112
Dibromofluoromethane		91	80-119	H	109	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11020-007**

Description: **MW-127** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1530**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1637	JWO		51688
2	5030B	8260D	1	08/25/2022 2359	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**10**	**J**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	**74-87-3**	**8260D**	**0.79**	**J**	**2.0**	1.0	**0.50**	**ug/L**	**1**
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**1.4**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-007**
Description: **MW-127**
Matrix: **Aqueous**
Date Sampled: **08/09/2022 1530**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1637	JWO		51688
2	5030B	8260D	1	08/25/2022 2359	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**0.59**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		97	81-118	H	99	81-118
Bromofluorobenzene		98	85-114	H	104	85-114
Toluene-d8		98	89-112	H	98	89-112
Dibromofluoromethane		92	80-119	H	97	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-007**
Description: **MW-127**
Matrix: **Aqueous**
Date Sampled: **08/09/2022 1530**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1637	JWO		51688
2	5030B	8260D	1	08/25/2022 2359	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**8.2**	**HJ**	**20**	10	**5.0**	**ug/L**	**2**
Benzene	71-43-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromoform	75-25-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chloroethane	75-00-3	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
Chloroform	67-66-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	UH	2.0	1.0	0.50	ug/L	2
Cyclohexane	110-82-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	1.2	UH	2.0	1.2	0.60	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**1.5**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Methylcyclohexane	108-87-2	8260D	0.80	UH	5.0	0.80	0.40	ug/L	2
Methylene chloride	75-09-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Styrene	100-42-5	8260D	0.82	UH	1.0	0.82	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Tetrachloroethene	127-18-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Toluene	108-88-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	UH	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-007**
Description: **MW-127**
Matrix: **Aqueous**
Date Sampled: **08/09/2022 1530**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1637	JWO		51688
2	5030B	8260D	1	08/25/2022 2359	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Trichloroethene	**79-01-6**	**8260D**	**0.59**	**HJ**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Trichlorofluoromethane	75-69-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Vinyl chloride	75-01-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		97	81-118	H	99	81-118
Bromofluorobenzene		98	85-114	H	104	85-114
Toluene-d8		98	89-112	H	98	89-112
Dibromofluoromethane		92	80-119	H	97	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-008**
Description: **MW-133**
Matrix: **Aqueous**
Date Sampled: **08/09/2022 1545**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1700	JWO		51688
2	5030B	8260D	1	08/25/2022 1653	JWO		52233

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**3.7**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
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H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-008**
Description: **MW-133**
Matrix: **Aqueous**
Date Sampled: **08/09/2022 1545**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1700	JWO		51688
2	5030B	8260D	1	08/25/2022 1653	JWO		52233

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**2.3**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		97	81-118	H	107	81-118
Bromofluorobenzene		96	85-114	H	99	85-114
Toluene-d8		97	89-112	H	107	89-112
Dibromofluoromethane		91	80-119	H	108	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11020-008**

Description: **MW-133** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1545**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1700	JWO		51688
2	5030B	8260D	1	08/25/2022 1653	JWO		52233

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	UHL	20	10	5.0	ug/L	2
Benzene	71-43-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromoform	75-25-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	4.0	UHL	10	4.0	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chloroethane	75-00-3	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
Chloroform	67-66-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	UH	2.0	1.0	0.50	ug/L	2
Cyclohexane	110-82-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	1.2	UH	2.0	1.2	0.60	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**4.2**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Methylcyclohexane	108-87-2	8260D	0.80	UH	5.0	0.80	0.40	ug/L	2
Methylene chloride	75-09-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Styrene	100-42-5	8260D	0.82	UH	1.0	0.82	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Tetrachloroethene	127-18-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Toluene	108-88-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	UH	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
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W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-008**
Description: **MW-133**
Matrix: **Aqueous**
Date Sampled: **08/09/2022 1545**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1700	JWO		51688
2	5030B	8260D	1	08/25/2022 1653	JWO		52233

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Trichloroethene	**79-01-6**	**8260D**	**2.3**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Trichlorofluoromethane	75-69-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Vinyl chloride	75-01-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		97	81-118	H	107	81-118
Bromofluorobenzene		96	85-114	H	99	85-114
Toluene-d8		97	89-112	H	107	89-112
Dibromofluoromethane		91	80-119	H	108	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11020-009**

Description: **MW-119** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1630**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/20/2022 2241	BBW		51770

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-009**
Description: **MW-119**
Matrix: **Aqueous**
Date Sampled: **08/09/2022 1630**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/20/2022 2241	BBW		51770

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		100	81-118
Bromofluorobenzene		93	85-114
Toluene-d8		100	89-112
Dibromofluoromethane		103	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-009**
Description: **MW-119**
Matrix: **Aqueous**
Date Sampled: **08/09/2022 1630**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	08/23/2022 0803	BNW	08/19/2022 0743	51538
1		7470A	1	08/20/2022 1258	MRW2	08/20/2022 0825	51636

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**97**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	7440-43-9	6020B	0.25	U	0.50	0.25	0.13	ug/L	1
Chromium	**7440-47-3**	**6020B**	**1.5**	**J**	**5.0**	2.5	**1.3**	**ug/L**	**1**
Lead	7439-92-1	6020B	0.50	U	1.0	0.50	0.25	ug/L	1
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11020-010**

Description: **MW-122** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1745**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/20/2022 2305	BBW		51770

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	**74-87-3**	**8260D**	**0.80**	**J**	**2.0**	1.0	**0.50**	**ug/L**	**1**
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**5.7**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260D**	**0.48**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-010**
Description: **MW-122**
Matrix: **Aqueous**
Date Sampled: **08/09/2022 1745**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/20/2022 2305	BBW		51770

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**100**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		98	81-118
Bromofluorobenzene		88	85-114
Toluene-d8		96	89-112
Dibromofluoromethane		104	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11020-011**

Description: **MW-124** Matrix: **Aqueous**

Date Sampled: **08/10/2022 1005**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/20/2022 2329	BBW		51770

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**5.0**	**J**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	**71-43-2**	**8260D**	**0.57**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	**110-82-7**	**8260D**	**0.51**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	**75-34-3**	**8260D**	**1.1**		**1.0**	0.80	**0.40**	**ug/L**	**1**
1,2-Dichloroethane	**107-06-2**	**8260D**	**0.76**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
1,1-Dichloroethene	**75-35-4**	**8260D**	**2.9**		**1.0**	0.80	**0.40**	**ug/L**	**1**
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**2.9**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**1.4**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**2.2**		**1.0**	0.84	**0.42**	**ug/L**	**1**
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-011**
Description: **MW-124**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1005**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/20/2022 2329	BBW		51770

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**140**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		88	81-118
Bromofluorobenzene		86	85-114
Toluene-d8		92	89-112
Dibromofluoromethane		92	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11020-012**

Description: **FB-01** Matrix: **Aqueous**

Date Sampled: **08/10/2022 1245**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/20/2022 1948	BBW		51770

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**13**	**J**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	**75-09-2**	**8260D**	**2.7**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-012**
Description: **FB-01**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1245**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/20/2022 1948	BBW		51770

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		96	81-118
Bromofluorobenzene		87	85-114
Toluene-d8		94	89-112
Dibromofluoromethane		98	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11020-013**

Description: **TB-04** Matrix: **Aqueous**

Date Sampled: **08/10/2022**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/20/2022 2012	BBW		51770

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**5.2**	**J**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-013**
Description: **TB-04**
Matrix: **Aqueous**
Date Sampled: **08/10/2022**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/20/2022 2012	BBW		51770

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		98	81-118
Bromofluorobenzene		90	85-114
Toluene-d8		96	89-112
Dibromofluoromethane		102	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11020-014**

Description: **MW-101** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1610**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/20/2022 2353	BBW		51770
2	5030B	8260D	1	08/24/2022 1319	JWO		52094

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	**74-87-3**	**8260D**	**0.72**	**J**	**2.0**	1.0	**0.50**	**ug/L**	**1**
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	**75-35-4**	**8260D**	**0.54**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**0.94**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**7.3**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-014**
Description: **MW-101**
Matrix: **Aqueous**
Date Sampled: **08/09/2022 1610**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/20/2022 2353	BBW		51770
2	5030B	8260D	1	08/24/2022 1319	JWO		52094

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**5.5**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		97	81-118	H	110	81-118
Bromofluorobenzene		89	85-114	H	102	85-114
Toluene-d8		96	89-112	H	108	89-112
Dibromofluoromethane		101	80-119	H	108	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11020-014**

Description: **MW-101** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1610**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/20/2022 2353	BBW		51770
2	5030B	8260D	1	08/24/2022 1319	JWO		52094

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**10**	**HJ**	**20**	10	**5.0**	**ug/L**	**2**
Benzene	71-43-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromoform	75-25-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chloroethane	75-00-3	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
Chloroform	67-66-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	UH	2.0	1.0	0.50	ug/L	2
Cyclohexane	110-82-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	1.2	UH	2.0	1.2	0.60	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**0.80**	**HJ**	**1.0**	0.80	**0.40**	**ug/L**	**2**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Methylcyclohexane	108-87-2	8260D	0.80	UH	5.0	0.80	0.40	ug/L	2
Methylene chloride	75-09-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Styrene	100-42-5	8260D	0.82	UH	1.0	0.82	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Tetrachloroethene	**127-18-4**	**8260D**	**6.2**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Toluene	108-88-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	UH	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-014**
Description: **MW-101**
Matrix: **Aqueous**
Date Sampled: **08/09/2022 1610**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/20/2022 2353	BBW		51770
2	5030B	8260D	1	08/24/2022 1319	JWO		52094

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Trichloroethene	**79-01-6**	**8260D**	**5.1**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Trichlorofluoromethane	75-69-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Vinyl chloride	75-01-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		97	81-118	H	110	81-118
Bromofluorobenzene		89	85-114	H	102	85-114
Toluene-d8		96	89-112	H	108	89-112
Dibromofluoromethane		101	80-119	H	108	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11020-014**

Description: **MW-101** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1610**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/18/2022 1551	CMF	08/12/2022 1750	50961
2	3520C	8270E	1	08/23/2022 1931	CMF	08/19/2022 1600	51699

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	UQ	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	UQ	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	UQ	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	UQ	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	84-74-2	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	UQ	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	UQ	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	UQ	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1

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U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-014**
Description: **MW-101**
Matrix: **Aqueous**
Date Sampled: **08/09/2022 1610**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/18/2022 1551	CMF	08/12/2022 1750	50961
2	3520C	8270E	1	08/23/2022 1931	CMF	08/19/2022 1600	51699

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	UQ	4.0	4.0	2.0	ug/L	1
Hexachloroethane	67-72-1	8270E	0.40	UQ	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	UQ	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	UQ	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	UQ	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	UQ	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	UQ	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	UQ	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	UQ	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
2-Fluorobiphenyl	N	42	44-119	H	65	44-119
2-Fluorophenol		24	19-119	H	43	19-119
Nitrobenzene-d5	N	39	44-120	H	72	44-120
Phenol-d5		30	10-115	H	57	10-115
Terphenyl-d14		76	50-134	H	81	50-134
2,4,6-Tribromophenol		62	43-140	H	67	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11020-014**

Description: **MW-101** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1610**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/18/2022 1551	CMF	08/12/2022 1750	50961
2	3520C	8270E	1	08/23/2022 1931	CMF	08/19/2022 1600	51699

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
Acenaphthylene	208-96-8	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
Acetophenone	98-86-2	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
Anthracene	120-12-7	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
Atrazine	1912-24-9	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
Benzaldehyde	100-52-7	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
Benzo(a)anthracene	56-55-3	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
Benzo(a)pyrene	50-32-8	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
Benzo(b)fluoranthene	205-99-2	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
Benzo(k)fluoranthene	207-08-9	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
1,1'-Biphenyl	92-52-4	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
Butyl benzyl phthalate	85-68-7	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
Caprolactam	**105-60-2**	**8270E**	**1.6**	**HJ**	**3.0**	2.0	**1.0**	**ug/L**	**2**
Carbazole	86-74-8	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
4-Chloroaniline	106-47-8	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
2-Chloronaphthalene	91-58-7	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
2-Chlorophenol	95-57-8	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
Chrysene	218-01-9	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
Dibenzofuran	132-64-9	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	UHL	4.0	3.5	1.8	ug/L	2
2,4-Dichlorophenol	120-83-2	8270E	0.50	UH	1.6	0.50	0.25	ug/L	2
Diethylphthalate	84-66-2	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
Dimethyl phthalate	131-11-3	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
2,4-Dimethylphenol	105-67-9	8270E	1.5	UH	2.0	1.5	0.62	ug/L	2
Di-n-butyl phthalate	84-74-2	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	UH	4.0	2.0	1.0	ug/L	2
2,4-Dinitrophenol	51-28-5	8270E	2.0	UH	4.0	2.0	1.0	ug/L	2
2,4-Dinitrotoluene	121-14-2	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
2,6-Dinitrotoluene	606-20-2	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
Di-n-octylphthalate	117-84-0	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	UH	4.0	3.0	1.5	ug/L	2
Fluoranthene	206-44-0	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
Fluorene	86-73-7	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
Hexachlorobenzene	118-74-1	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
Hexachlorobutadiene	87-68-3	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-014**
Description: **MW-101**
Matrix: **Aqueous**
Date Sampled: **08/09/2022 1610**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/18/2022 1551	CMF	08/12/2022 1750	50961
2	3520C	8270E	1	08/23/2022 1931	CMF	08/19/2022 1600	51699

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	UH	4.0	4.0	2.0	ug/L	2
Hexachloroethane	67-72-1	8270E	0.40	UH	0.80	0.40	0.17	ug/L	2
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
Isophorone	78-59-1	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
2-Methylnaphthalene	91-57-6	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
2-Methylphenol	95-48-7	8270E	1.3	UH	1.6	1.3	0.67	ug/L	2
3+4-Methylphenol	106-44-5	8270E	3.0	UH	4.0	3.0	1.5	ug/L	2
Naphthalene	91-20-3	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
2-Nitroaniline	88-74-4	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
3-Nitroaniline	99-09-2	8270E	2.0	UHL	3.0	2.0	1.0	ug/L	2
4-Nitroaniline	100-01-6	8270E	3.0	UH	4.0	3.0	1.5	ug/L	2
Nitrobenzene	98-95-3	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
2-Nitrophenol	88-75-5	8270E	2.0	UH	3.2	2.0	1.0	ug/L	2
4-Nitrophenol	100-02-7	8270E	4.0	UH	5.0	4.0	2.0	ug/L	2
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
Pentachlorophenol	87-86-5	8270E	4.0	UH	5.0	4.0	2.0	ug/L	2
Phenanthrene	85-01-8	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
Phenol	108-95-2	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
Pyrene	129-00-0	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
2-Fluorobiphenyl	N	42	44-119	H	65	44-119
2-Fluorophenol		24	19-119	H	43	19-119
Nitrobenzene-d5	N	39	44-120	H	72	44-120
Phenol-d5		30	10-115	H	57	10-115
Terphenyl-d14		76	50-134	H	81	50-134
2,4,6-Tribromophenol		62	43-140	H	67	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-014**
Description: **MW-101**
Matrix: **Aqueous**
Date Sampled: **08/09/2022 1610**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	09/01/2022 0332	BNW	08/15/2022 0850	50907
1		7470A	1	08/13/2022 1732	MRW2	08/13/2022 1352	51007

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**98**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	**7440-43-9**	**6020B**	**0.65**		**0.50**	0.25	**0.13**	**ug/L**	**1**
Chromium	7440-47-3	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Lead	**7439-92-1**	**6020B**	**1.1**		**1.0**	0.50	**0.25**	**ug/L**	**1**
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	**7782-49-2**	**6020B**	**2.2**	**J**	**5.0**	2.5	**1.3**	**ug/L**	**1**
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11020-015**

Description: **MW-117** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1515**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/21/2022 0018	BBW		51770

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**8.5**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**1.6**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-015**
Description: **MW-117**
Matrix: **Aqueous**
Date Sampled: **08/09/2022 1515**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/21/2022 0018	BBW		51770

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**12**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	**75-01-4**	**8260D**	**3.5**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		99	81-118
Bromofluorobenzene		93	85-114
Toluene-d8		99	89-112
Dibromofluoromethane		100	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11020-015**

Description: **MW-117** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1515**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/18/2022 1615	CMF	08/12/2022 1750	50961
2	3520C	8270E	1	08/23/2022 1955	CMF	08/19/2022 1600	51699

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	UQ	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	UQ	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	UQ	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	UQ	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	84-74-2	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	UQ	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	UQ	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	UQ	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-015**
Description: **MW-117**
Matrix: **Aqueous**
Date Sampled: **08/09/2022 1515**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/18/2022 1615	CMF	08/12/2022 1750	50961
2	3520C	8270E	1	08/23/2022 1955	CMF	08/19/2022 1600	51699

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	UQ	4.0	4.0	2.0	ug/L	1
Hexachloroethane	67-72-1	8270E	0.40	UQ	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	UQ	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	UQ	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	UQ	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	UQ	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	UQ	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	UQ	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	UQ	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	UQ	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	UQ	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
2-Fluorobiphenyl	N	43	44-119	H	66	44-119
2-Fluorophenol		25	19-119	H	41	19-119
Nitrobenzene-d5	N	38	44-120	H	73	44-120
Phenol-d5		34	10-115	H	50	10-115
Terphenyl-d14		90	50-134	H	86	50-134
2,4,6-Tribromophenol		71	43-140	H	76	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11020-015**

Description: **MW-117** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1515**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/18/2022 1615	CMF	08/12/2022 1750	50961
2	3520C	8270E	1	08/23/2022 1955	CMF	08/19/2022 1600	51699

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
Acenaphthylene	208-96-8	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
Acetophenone	98-86-2	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
Anthracene	120-12-7	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
Atrazine	1912-24-9	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
Benzaldehyde	100-52-7	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
Benzo(a)anthracene	56-55-3	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
Benzo(a)pyrene	50-32-8	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
Benzo(b)fluoranthene	205-99-2	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
Benzo(k)fluoranthene	207-08-9	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
1,1'-Biphenyl	92-52-4	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
Butyl benzyl phthalate	85-68-7	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
Caprolactam	105-60-2	8270E	2.0	UH	3.0	2.0	1.0	ug/L	2
Carbazole	86-74-8	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
4-Chloroaniline	106-47-8	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
2-Chloronaphthalene	91-58-7	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
2-Chlorophenol	95-57-8	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
Chrysene	218-01-9	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
Dibenzofuran	132-64-9	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	UHL	4.0	3.5	1.8	ug/L	2
2,4-Dichlorophenol	120-83-2	8270E	0.50	UH	1.6	0.50	0.25	ug/L	2
Diethylphthalate	84-66-2	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
Dimethyl phthalate	131-11-3	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
2,4-Dimethylphenol	105-67-9	8270E	1.5	UH	2.0	1.5	0.62	ug/L	2
Di-n-butyl phthalate	84-74-2	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	UH	4.0	2.0	1.0	ug/L	2
2,4-Dinitrophenol	51-28-5	8270E	2.0	UH	4.0	2.0	1.0	ug/L	2
2,4-Dinitrotoluene	121-14-2	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
2,6-Dinitrotoluene	606-20-2	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
Di-n-octylphthalate	117-84-0	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	UH	4.0	3.0	1.5	ug/L	2
Fluoranthene	206-44-0	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
Fluorene	86-73-7	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
Hexachlorobenzene	118-74-1	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
Hexachlorobutadiene	87-68-3	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-015**
Description: **MW-117**
Matrix: **Aqueous**
Date Sampled: **08/09/2022 1515**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/18/2022 1615	CMF	08/12/2022 1750	50961
2	3520C	8270E	1	08/23/2022 1955	CMF	08/19/2022 1600	51699

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	UH	4.0	4.0	2.0	ug/L	2
Hexachloroethane	67-72-1	8270E	0.40	UH	0.80	0.40	0.17	ug/L	2
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
Isophorone	78-59-1	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
2-Methylnaphthalene	91-57-6	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
2-Methylphenol	95-48-7	8270E	1.3	UH	1.6	1.3	0.67	ug/L	2
3+4-Methylphenol	106-44-5	8270E	3.0	UH	4.0	3.0	1.5	ug/L	2
Naphthalene	91-20-3	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
2-Nitroaniline	88-74-4	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
3-Nitroaniline	99-09-2	8270E	2.0	UHL	3.0	2.0	1.0	ug/L	2
4-Nitroaniline	100-01-6	8270E	3.0	UH	4.0	3.0	1.5	ug/L	2
Nitrobenzene	98-95-3	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
2-Nitrophenol	88-75-5	8270E	2.0	UH	3.2	2.0	1.0	ug/L	2
4-Nitrophenol	100-02-7	8270E	4.0	UH	5.0	4.0	2.0	ug/L	2
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
Pentachlorophenol	87-86-5	8270E	4.0	UH	5.0	4.0	2.0	ug/L	2
Phenanthrene	85-01-8	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
Phenol	108-95-2	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
Pyrene	129-00-0	8270E	0.10	UH	0.20	0.10	0.040	ug/L	2
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	UH	1.6	1.0	0.50	ug/L	2

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
2-Fluorobiphenyl	N	43	44-119	H	66	44-119
2-Fluorophenol		25	19-119	H	41	19-119
Nitrobenzene-d5	N	38	44-120	H	73	44-120
Phenol-d5		34	10-115	H	50	10-115
Terphenyl-d14		90	50-134	H	86	50-134
2,4,6-Tribromophenol		71	43-140	H	76	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-015**
Description: **MW-117**
Matrix: **Aqueous**
Date Sampled: **08/09/2022 1515**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	09/01/2022 0341	BNW	08/15/2022 0850	50907
1		7470A	1	08/13/2022 1729	MRW2	08/13/2022 1352	51007

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	**7440-38-2**	**6020B**	**1.4**	**J**	**5.0**	2.5	**1.3**	**ug/L**	**1**
Barium	**7440-39-3**	**6020B**	**61**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	**7440-43-9**	**6020B**	**0.15**	**J**	**0.50**	0.25	**0.13**	**ug/L**	**1**
Chromium	7440-47-3	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Lead	**7439-92-1**	**6020B**	**1.5**		**1.0**	0.50	**0.25**	**ug/L**	**1**
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Inorganic non-metals

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-016**
Description: **MW-109**
Matrix: **Aqueous**
Date Sampled: **08/09/2022 1445**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(TOC) SM 5310C-2011	1	08/29/2022 2356	CMM		52525

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
TOC		**SM 5310C-2011**	**4000**		**2000**	1500	**600**	**ug/L**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11020-016**

Description: **MW-109** Matrix: **Aqueous**

Date Sampled: **08/09/2022 1445**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/21/2022 1536	JMM2		51772

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**11**	**J**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	**71-43-2**	**8260D**	**0.78**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	**75-00-3**	**8260D**	**1.5**	**J**	**2.0**	0.80	**0.40**	**ug/L**	**1**
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	**110-82-7**	**8260D**	**0.89**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	**75-34-3**	**8260D**	**0.63**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**19**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	**156-60-5**	**8260D**	**1.8**		**1.0**	0.80	**0.40**	**ug/L**	**1**
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260D**	**10**		**1.0**	0.80	**0.40**	**ug/L**	**1**
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	**108-87-2**	**8260D**	**0.49**	**J**	**5.0**	0.80	**0.40**	**ug/L**	**1**
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-016**
Description: **MW-109**
Matrix: **Aqueous**
Date Sampled: **08/09/2022 1445**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/21/2022 1536	JMM2		51772

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	**75-01-4**	**8260D**	**57**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		93	81-118
Bromofluorobenzene		86	85-114
Toluene-d8		96	89-112
Dibromofluoromethane		94	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Dissolved Gases

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-016**
Description: **MW-109**
Matrix: **Aqueous**
Date Sampled: **08/09/2022 1445**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	08/19/2022 2351	BBW		51742
2		RSK - 175	1	08/23/2022 2223	BBW		52041

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Ethane	74-84-0	RSK - 175	5.0	U	10	5.0	2.5	ug/L	1
Ethene	**74-85-1**	**RSK - 175**	**5.6**	**J**	**10**	5.0	**2.5**	**ug/L**	**1**
Methane	**74-82-8**	**RSK - 175**	**760**	**S**	**10**	5.0	**2.5**	**ug/L**	**2**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-016**
Description: **MW-109**
Matrix: **Aqueous**
Date Sampled: **08/09/2022 1445**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	08/23/2022 0754	BNW	08/19/2022 0743	51538
1		7470A	1	08/20/2022 1306	MRW2	08/20/2022 0825	51636

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**170**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	**7440-43-9**	**6020B**	**0.13**	**J**	**0.50**	0.25	**0.13**	**ug/L**	**1**
Chromium	7440-47-3	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Lead	**7439-92-1**	**6020B**	**0.64**	**J**	**1.0**	0.50	**0.25**	**ug/L**	**1**
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11020-018**

Description: **EB-GW-02** Matrix: **Aqueous**

Date Sampled: **08/10/2022 1700**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/20/2022 2037	BBW		51770

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**5.8**	**J**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-018**
Description: **EB-GW-02**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1700**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/20/2022 2037	BBW		51770

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		93	81-118
Bromofluorobenzene		88	85-114
Toluene-d8		94	89-112
Dibromofluoromethane		95	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11020-018**

Description: **EB-GW-02** Matrix: **Aqueous**

Date Sampled: **08/10/2022 1700**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/19/2022 0554	SCD	08/17/2022 1500	51409

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	**100-52-7**	**8270E**	**0.76**	**J**	**1.6**	1.0	**0.50**	**ug/L**	**1**
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	**105-60-2**	**8270E**	**3.1**		**3.0**	2.0	**1.0**	**ug/L**	**1**
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	84-74-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-018**
Description: **EB-GW-02**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1700**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/19/2022 0554	SCD	08/17/2022 1500	51409

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	US	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		76	44-119
2-Fluorophenol		47	19-119
Nitrobenzene-d5		72	44-120
Phenol-d5		58	10-115
Terphenyl-d14		95	50-134
2,4,6-Tribromophenol		82	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11020-019**

Description: **EB-GW-01** Matrix: **Aqueous**

Date Sampled: **08/10/2022 1600**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/20/2022 2102	BBW		51770

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**10**	**J**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	**75-09-2**	**8260D**	**2.1**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-019**
Description: **EB-GW-01**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1600**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/20/2022 2102	BBW		51770

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		99	81-118
Bromofluorobenzene		91	85-114
Toluene-d8		97	89-112
Dibromofluoromethane		102	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH11020-019**

Description: **EB-GW-01** Matrix: **Aqueous**

Date Sampled: **08/10/2022 1600**

Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/19/2022 0441	SCD	08/17/2022 1500	51409

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	**105-60-2**	**8270E**	**15**		**3.0**	2.0	**1.0**	**ug/L**	**1**
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	84-74-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-019**
Description: **EB-GW-01**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1600**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/19/2022 0441	SCD	08/17/2022 1500	51409

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		76	44-119
2-Fluorophenol		48	19-119
Nitrobenzene-d5		74	44-120
Phenol-d5		62	10-115
Terphenyl-d14		99	50-134
2,4,6-Tribromophenol		84	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.**
Laboratory ID: **XH11020-019**
Description: **EB-GW-01**
Matrix: **Aqueous**
Date Sampled: **08/10/2022 1600**
Date Received: **08/11/2022**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	08/23/2022 0811	BNW	08/19/2022 0743	51538
1		7470A	1	08/20/2022 1320	MRW2	08/20/2022 0825	51636

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**3.6**	**J**	**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	7440-43-9	6020B	0.25	U	0.50	0.25	0.13	ug/L	1
Chromium	7440-47-3	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Lead	7439-92-1	6020B	0.50	U	1.0	0.50	0.25	ug/L	1
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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QC Summary

Inorganic non-metals - MB

Sample ID: XQ52525-001
Batch: 52525
Analytical Method: SM 5310C-2011
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
TOC	1500	U	1	2000	1500	600	ug/L	08/29/2022 2129

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCS

Sample ID: XQ52525-002
Batch: 52525
Analytical Method: SM 5310C-2011

Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
TOC	20000	20000		1	99	90-110	08/29/2022 2140

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MS

Sample ID: XH11020-016MS
Batch: 52525
Analytical Method: SM 5310C-2011

Matrix: Aqueous

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
TOC	4000	50000	54000		1	100	70-130	08/30/2022 0008

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MSD

Sample ID: XH11020-016MD
Batch: 52525
Analytical Method: SM 5310C-2011

Matrix: Aqueous

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
TOC	4000	50000	52000		1	96	3.3	70-130	20	08/30/2022 0019

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51688-001
Batch: 51688
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	08/19/2022 1206
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	08/19/2022 1206
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	08/19/2022 1206
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	08/19/2022 1206
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	08/19/2022 1206
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	08/19/2022 1206
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	08/19/2022 1206
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	08/19/2022 1206
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	08/19/2022 1206
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	08/19/2022 1206
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	08/19/2022 1206
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51688-001
Batch: 51688
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		98	81-118
Bromofluorobenzene		94	85-114
Toluene-d8		95	89-112
Dibromofluoromethane		91	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51688-002
Batch: 51688
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	150		1	152	39-160	08/19/2022 0849
Benzene	50	49		1	98	79-120	08/19/2022 0849
Bromodichloromethane	50	43		1	86	79-125	08/19/2022 0849
Bromoform	50	38		1	76	66-130	08/19/2022 0849
Bromomethane (Methyl bromide)	50	50		1	101	53-141	08/19/2022 0849
2-Butanone (MEK)	100	110		1	109	56-143	08/19/2022 0849
Carbon disulfide	50	44		1	87	64-133	08/19/2022 0849
Carbon tetrachloride	50	42		1	83	72-136	08/19/2022 0849
Chlorobenzene	50	45		1	91	82-118	08/19/2022 0849
Chloroethane	50	42		1	84	60-138	08/19/2022 0849
Chloroform	50	46		1	92	79-124	08/19/2022 0849
Chloromethane (Methyl chloride)	50	46		1	92	50-139	08/19/2022 0849
Cyclohexane	50	45		1	89	71-130	08/19/2022 0849
1,2-Dibromo-3-chloropropane (DBCP)	50	37		1	74	62-128	08/19/2022 0849
Dibromochloromethane	50	42		1	83	74-126	08/19/2022 0849
1,2-Dibromoethane (EDB)	50	47		1	95	77-121	08/19/2022 0849
1,2-Dichlorobenzene	50	44		1	88	80-119	08/19/2022 0849
1,3-Dichlorobenzene	50	44		1	88	80-119	08/19/2022 0849
1,4-Dichlorobenzene	50	43		1	86	79-118	08/19/2022 0849
Dichlorodifluoromethane	50	45		1	91	32-152	08/19/2022 0849
1,1-Dichloroethane	50	45		1	90	77-125	08/19/2022 0849
1,2-Dichloroethane	50	46		1	92	73-128	08/19/2022 0849
1,1-Dichloroethene	50	44		1	89	71-131	08/19/2022 0849
cis-1,2-Dichloroethene	50	47		1	93	78-123	08/19/2022 0849
trans-1,2-Dichloroethene	50	44		1	89	75-124	08/19/2022 0849
1,2-Dichloropropane	50	46		1	92	78-122	08/19/2022 0849
cis-1,3-Dichloropropene	50	45		1	91	75-124	08/19/2022 0849
trans-1,3-Dichloropropene	50	45		1	90	73-127	08/19/2022 0849
Ethylbenzene	50	46		1	92	79-121	08/19/2022 0849
2-Hexanone	100	110		1	107	57-139	08/19/2022 0849
Isopropylbenzene	50	46		1	93	72-131	08/19/2022 0849
Methyl acetate	50	48		1	96	56-136	08/19/2022 0849
Methyl tertiary butyl ether (MTBE)	50	51		1	101	71-124	08/19/2022 0849
4-Methyl-2-pentanone	100	97		1	97	67-130	08/19/2022 0849
Methylcyclohexane	50	44		1	87	72-132	08/19/2022 0849
Methylene chloride	50	45		1	90	74-124	08/19/2022 0849
Styrene	50	48		1	96	78-123	08/19/2022 0849
1,1,2,2-Tetrachloroethane	50	49		1	98	71-121	08/19/2022 0849
Tetrachloroethene	50	46		1	91	74-129	08/19/2022 0849
Toluene	50	48		1	95	80-121	08/19/2022 0849
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	41		1	82	70-136	08/19/2022 0849
1,2,4-Trichlorobenzene	50	42		1	83	69-130	08/19/2022 0849
1,1,1-Trichloroethane	50	44		1	89	74-131	08/19/2022 0849
1,1,2-Trichloroethane	50	49		1	97	80-119	08/19/2022 0849

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51688-002
Batch: 51688
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	43		1	86	79-123	08/19/2022 0849
Trichlorofluoromethane	50	45		1	90	65-141	08/19/2022 0849
Vinyl chloride	50	50		1	100	58-137	08/19/2022 0849
Xylenes (total)	100	94		1	94	79-121	08/19/2022 0849

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		88	81-118
Bromofluorobenzene		101	85-114
Toluene-d8		91	89-112
Dibromofluoromethane		88	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MS

Sample ID: XH11020-001MS
Batch: 51688
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	ND	2000	1900		20	93	39-160	08/19/2022 1919
Benzene	ND	1000	940		20	94	79-120	08/19/2022 1919
Bromodichloromethane	ND	1000	780	N	20	78	79-125	08/19/2022 1919
Bromoform	ND	1000	640	N	20	64	66-130	08/19/2022 1919
Bromomethane (Methyl bromide)	ND	1000	940		20	94	53-141	08/19/2022 1919
2-Butanone (MEK)	ND	2000	1700		20	85	56-143	08/19/2022 1919
Carbon disulfide	ND	1000	750		20	75	64-133	08/19/2022 1919
Carbon tetrachloride	ND	1000	800		20	80	72-136	08/19/2022 1919
Chlorobenzene	ND	1000	840		20	84	82-118	08/19/2022 1919
Chloroethane	ND	1000	770		20	77	60-138	08/19/2022 1919
Chloroform	ND	1000	860		20	86	79-124	08/19/2022 1919
Chloromethane (Methyl chloride)	ND	1000	840		20	84	50-139	08/19/2022 1919
Cyclohexane	ND	1000	850		20	85	71-130	08/19/2022 1919
1,2-Dibromo-3-chloropropane (DBCP)	ND	1000	650		20	65	62-128	08/19/2022 1919
Dibromochloromethane	ND	1000	730	N	20	73	74-126	08/19/2022 1919
1,2-Dibromoethane (EDB)	ND	1000	850		20	85	77-121	08/19/2022 1919
1,2-Dichlorobenzene	ND	1000	840		20	84	80-119	08/19/2022 1919
1,3-Dichlorobenzene	ND	1000	850		20	85	80-119	08/19/2022 1919
1,4-Dichlorobenzene	ND	1000	810		20	81	79-118	08/19/2022 1919
Dichlorodifluoromethane	ND	1000	850		20	85	32-152	08/19/2022 1919
1,1-Dichloroethane	9.9	1000	860		20	85	77-125	08/19/2022 1919
1,2-Dichloroethane	ND	1000	860		20	86	73-128	08/19/2022 1919
1,1-Dichloroethene	ND	1000	850		20	85	71-131	08/19/2022 1919
cis-1,2-Dichloroethene	360	1000	1200		20	85	78-123	08/19/2022 1919
trans-1,2-Dichloroethene	ND	1000	860		20	85	75-124	08/19/2022 1919
1,2-Dichloropropane	ND	1000	850		20	85	78-122	08/19/2022 1919
cis-1,3-Dichloropropene	ND	1000	790		20	79	75-124	08/19/2022 1919
trans-1,3-Dichloropropene	ND	1000	760		20	76	73-127	08/19/2022 1919
Ethylbenzene	ND	1000	890		20	89	79-121	08/19/2022 1919
2-Hexanone	ND	2000	1800		20	91	57-139	08/19/2022 1919
Isopropylbenzene	ND	1000	900		20	90	72-131	08/19/2022 1919
Methyl acetate	ND	1000	850		20	85	56-136	08/19/2022 1919
Methyl tertiary butyl ether (MTBE)	ND	1000	870		20	87	71-124	08/19/2022 1919
4-Methyl-2-pentanone	ND	2000	1800		20	88	67-130	08/19/2022 1919
Methylcyclohexane	ND	1000	860		20	86	72-132	08/19/2022 1919
Methylene chloride	ND	1000	800		20	80	74-124	08/19/2022 1919
Styrene	ND	1000	890		20	89	78-123	08/19/2022 1919
1,1,2,2-Tetrachloroethane	ND	1000	920		20	92	71-121	08/19/2022 1919
Tetrachloroethene	160	1000	1000		20	89	74-129	08/19/2022 1919
Toluene	ND	1000	910		20	91	80-121	08/19/2022 1919
1,1,2-Trichloro-1,2,2-Trifluoroethane	60	1000	880		20	82	70-136	08/19/2022 1919
1,2,4-Trichlorobenzene	ND	1000	750		20	75	69-130	08/19/2022 1919
1,1,1-Trichloroethane	ND	1000	840		20	84	74-131	08/19/2022 1919
1,1,2-Trichloroethane	ND	1000	880		20	88	80-119	08/19/2022 1919

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MS

Sample ID: XH11020-001MS
Batch: 51688
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	4200	1000	4800	N	20	64	79-123	08/19/2022 1919
Trichlorofluoromethane	ND	1000	840		20	84	65-141	08/19/2022 1919
Vinyl chloride	ND	1000	990		20	98	58-137	08/19/2022 1919
Xylenes (total)	ND	2000	1800		20	89	79-121	08/19/2022 1919

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4	N	79	81-118
Bromofluorobenzene		88	85-114
Toluene-d8	N	84	89-112
Dibromofluoromethane	N	78	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XH11020-001MD
Batch: 51688
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acetone	ND	2000	1600		20	81	14	39-160	20	08/19/2022 1942
Benzene	ND	1000	890		20	89	6.1	79-120	20	08/19/2022 1942
Bromodichloromethane	ND	1000	730	N	20	73	6.2	79-125	20	08/19/2022 1942
Bromoform	ND	1000	610	N	20	61	5.8	66-130	20	08/19/2022 1942
Bromomethane (Methyl bromide)	ND	1000	910		20	91	2.6	53-141	20	08/19/2022 1942
2-Butanone (MEK)	ND	2000	1500		20	77	9.4	56-143	20	08/19/2022 1942
Carbon disulfide	ND	1000	710		20	71	5.4	64-133	20	08/19/2022 1942
Carbon tetrachloride	ND	1000	750		20	75	6.6	72-136	20	08/19/2022 1942
Chlorobenzene	ND	1000	800	N	20	80	5.7	82-118	20	08/19/2022 1942
Chloroethane	ND	1000	770		20	77	0.076	60-138	20	08/19/2022 1942
Chloroform	ND	1000	820		20	82	5.6	79-124	20	08/19/2022 1942
Chloromethane (Methyl chloride)	ND	1000	810		20	81	4.2	50-139	20	08/19/2022 1942
Cyclohexane	ND	1000	790		20	79	8.0	71-130	20	08/19/2022 1942
1,2-Dibromo-3-chloropropane (DBCP)	ND	1000	590	N	20	59	9.0	62-128	20	08/19/2022 1942
Dibromochloromethane	ND	1000	690	N	20	69	5.0	74-126	20	08/19/2022 1942
1,2-Dibromoethane (EDB)	ND	1000	800		20	80	6.6	77-121	20	08/19/2022 1942
1,2-Dichlorobenzene	ND	1000	770	N	20	77	8.1	80-119	20	08/19/2022 1942
1,3-Dichlorobenzene	ND	1000	790	N	20	79	7.0	80-119	20	08/19/2022 1942
1,4-Dichlorobenzene	ND	1000	750	N	20	75	8.0	79-118	20	08/19/2022 1942
Dichlorodifluoromethane	ND	1000	800		20	80	6.3	32-152	20	08/19/2022 1942
1,1-Dichloroethane	9.9	1000	800		20	79	7.0	77-125	20	08/19/2022 1942
1,2-Dichloroethane	ND	1000	790		20	79	7.5	73-128	20	08/19/2022 1942
1,1-Dichloroethene	ND	1000	790		20	79	6.1	71-131	20	08/19/2022 1942
cis-1,2-Dichloroethene	360	1000	1200		20	81	3.5	78-123	20	08/19/2022 1942
trans-1,2-Dichloroethene	ND	1000	800		20	80	6.7	75-124	20	08/19/2022 1942
1,2-Dichloropropane	ND	1000	800		20	80	5.5	78-122	20	08/19/2022 1942
cis-1,3-Dichloropropene	ND	1000	740	N	20	74	6.0	75-124	20	08/19/2022 1942
trans-1,3-Dichloropropene	ND	1000	720	N	20	72	5.0	73-127	20	08/19/2022 1942
Ethylbenzene	ND	1000	840		20	84	6.5	79-121	20	08/19/2022 1942
2-Hexanone	ND	2000	1700		20	85	6.6	57-139	20	08/19/2022 1942
Isopropylbenzene	ND	1000	830		20	83	7.9	72-131	20	08/19/2022 1942
Methyl acetate	ND	1000	780		20	78	8.7	56-136	20	08/19/2022 1942
Methyl tertiary butyl ether (MTBE)	ND	1000	810		20	81	6.5	71-124	20	08/19/2022 1942
4-Methyl-2-pentanone	ND	2000	1600		20	81	7.9	67-130	20	08/19/2022 1942
Methylcyclohexane	ND	1000	810		20	81	6.9	72-132	20	08/19/2022 1942
Methylene chloride	ND	1000	770		20	77	4.3	74-124	20	08/19/2022 1942
Styrene	ND	1000	820		20	82	7.7	78-123	20	08/19/2022 1942
1,1,2,2-Tetrachloroethane	ND	1000	850		20	85	8.3	71-121	20	08/19/2022 1942
Tetrachloroethene	160	1000	1000		20	84	4.4	74-129	20	08/19/2022 1942
Toluene	ND	1000	860		20	86	6.3	80-121	20	08/19/2022 1942
1,1,2-Trichloro-1,2,2-Trifluoroethane	60	1000	810		20	75	8.1	70-136	20	08/19/2022 1942
1,2,4-Trichlorobenzene	ND	1000	710		20	71	4.5	69-130	20	08/19/2022 1942
1,1,1-Trichloroethane	ND	1000	790		20	79	6.4	74-131	20	08/19/2022 1942
1,1,2-Trichloroethane	ND	1000	830		20	83	6.7	80-119	20	08/19/2022 1942

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XH11020-001MD
Batch: 51688
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Trichloroethene	4200	1000	4700	N	20	56	1.7	79-123	20	08/19/2022 1942
Trichlorofluoromethane	ND	1000	820		20	82	1.9	65-141	20	08/19/2022 1942
Vinyl chloride	ND	1000	930		20	92	6.6	58-137	20	08/19/2022 1942
Xylenes (total)	ND	2000	1700		20	83	6.2	79-121	20	08/19/2022 1942

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4	N	80	81-118
Bromofluorobenzene		89	85-114
Toluene-d8	N	85	89-112
Dibromofluoromethane		80	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51770-001
Batch: 51770
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	08/20/2022 1811
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	08/20/2022 1811
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	08/20/2022 1811
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	08/20/2022 1811
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	08/20/2022 1811
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	08/20/2022 1811
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	08/20/2022 1811
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	08/20/2022 1811
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	08/20/2022 1811
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	08/20/2022 1811
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	08/20/2022 1811
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811

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LOD = Limit of Detection

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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51770-001
Batch: 51770
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	08/20/2022 1811

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		98	81-118
Bromofluorobenzene		94	85-114
Toluene-d8		101	89-112
Dibromofluoromethane		99	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51770-002
Batch: 51770
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	130		1	131	39-160	08/20/2022 1703
Benzene	50	49		1	97	79-120	08/20/2022 1703
Bromodichloromethane	50	50		1	100	79-125	08/20/2022 1703
Bromoform	50	52		1	105	66-130	08/20/2022 1703
Bromomethane (Methyl bromide)	50	47		1	95	53-141	08/20/2022 1703
2-Butanone (MEK)	100	130		1	129	56-143	08/20/2022 1703
Carbon disulfide	50	48		1	96	64-133	08/20/2022 1703
Carbon tetrachloride	50	47		1	93	72-136	08/20/2022 1703
Chlorobenzene	50	50		1	99	82-118	08/20/2022 1703
Chloroethane	50	48		1	96	60-138	08/20/2022 1703
Chloroform	50	47		1	94	79-124	08/20/2022 1703
Chloromethane (Methyl chloride)	50	49		1	99	50-139	08/20/2022 1703
Cyclohexane	50	50		1	99	71-130	08/20/2022 1703
1,2-Dibromo-3-chloropropane (DBCP)	50	54		1	108	62-128	08/20/2022 1703
Dibromochloromethane	50	54		1	108	74-126	08/20/2022 1703
1,2-Dibromoethane (EDB)	50	52		1	103	77-121	08/20/2022 1703
1,2-Dichlorobenzene	50	50		1	99	80-119	08/20/2022 1703
1,3-Dichlorobenzene	50	50		1	100	80-119	08/20/2022 1703
1,4-Dichlorobenzene	50	47		1	95	79-118	08/20/2022 1703
Dichlorodifluoromethane	50	53		1	106	32-152	08/20/2022 1703
1,1-Dichloroethane	50	49		1	98	77-125	08/20/2022 1703
1,2-Dichloroethane	50	49		1	98	73-128	08/20/2022 1703
1,1-Dichloroethene	50	49		1	98	71-131	08/20/2022 1703
cis-1,2-Dichloroethene	50	49		1	98	78-123	08/20/2022 1703
trans-1,2-Dichloroethene	50	48		1	96	75-124	08/20/2022 1703
1,2-Dichloropropane	50	51		1	102	78-122	08/20/2022 1703
cis-1,3-Dichloropropene	50	56		1	113	75-124	08/20/2022 1703
trans-1,3-Dichloropropene	50	56		1	113	73-127	08/20/2022 1703
Ethylbenzene	50	51		1	103	79-121	08/20/2022 1703
2-Hexanone	100	110		1	113	57-139	08/20/2022 1703
Isopropylbenzene	50	54		1	108	72-131	08/20/2022 1703
Methyl acetate	50	56		1	112	56-136	08/20/2022 1703
Methyl tertiary butyl ether (MTBE)	50	56		1	112	71-124	08/20/2022 1703
4-Methyl-2-pentanone	100	110		1	109	67-130	08/20/2022 1703
Methylcyclohexane	50	51		1	102	72-132	08/20/2022 1703
Methylene chloride	50	48		1	96	74-124	08/20/2022 1703
Styrene	50	56		1	112	78-123	08/20/2022 1703
1,1,2,2-Tetrachloroethane	50	51		1	102	71-121	08/20/2022 1703
Tetrachloroethene	50	50		1	100	74-129	08/20/2022 1703
Toluene	50	53		1	105	80-121	08/20/2022 1703
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	48		1	97	70-136	08/20/2022 1703
1,2,4-Trichlorobenzene	50	46		1	92	69-130	08/20/2022 1703
1,1,1-Trichloroethane	50	48		1	95	74-131	08/20/2022 1703
1,1,2-Trichloroethane	50	51		1	101	80-119	08/20/2022 1703

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51770-002
Batch: 51770
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	46		1	92	79-123	08/20/2022 1703
Trichlorofluoromethane	50	48		1	95	65-141	08/20/2022 1703
Vinyl chloride	50	50		1	101	58-137	08/20/2022 1703
Xylenes (total)	100	110		1	108	79-121	08/20/2022 1703

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		96	81-118
Bromofluorobenzene		100	85-114
Toluene-d8		103	89-112
Dibromofluoromethane		95	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51772-001
Batch: 51772
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	08/21/2022 1225
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	08/21/2022 1225
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	08/21/2022 1225
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	08/21/2022 1225
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	08/21/2022 1225
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	08/21/2022 1225
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	08/21/2022 1225
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	08/21/2022 1225
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	08/21/2022 1225
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	08/21/2022 1225
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	08/21/2022 1225
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51772-001
Batch: 51772
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		97	81-118
Bromofluorobenzene		93	85-114
Toluene-d8		101	89-112
Dibromofluoromethane		100	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51772-002
Batch: 51772
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	110		1	113	39-160	08/21/2022 1119
Benzene	50	49		1	98	79-120	08/21/2022 1119
Bromodichloromethane	50	49		1	99	79-125	08/21/2022 1119
Bromoform	50	52		1	104	66-130	08/21/2022 1119
Bromomethane (Methyl bromide)	50	46		1	93	53-141	08/21/2022 1119
2-Butanone (MEK)	100	96		1	96	56-143	08/21/2022 1119
Carbon disulfide	50	48		1	97	64-133	08/21/2022 1119
Carbon tetrachloride	50	47		1	94	72-136	08/21/2022 1119
Chlorobenzene	50	50		1	99	82-118	08/21/2022 1119
Chloroethane	50	48		1	97	60-138	08/21/2022 1119
Chloroform	50	47		1	94	79-124	08/21/2022 1119
Chloromethane (Methyl chloride)	50	49		1	98	50-139	08/21/2022 1119
Cyclohexane	50	49		1	99	71-130	08/21/2022 1119
1,2-Dibromo-3-chloropropane (DBCP)	50	56		1	111	62-128	08/21/2022 1119
Dibromochloromethane	50	54		1	107	74-126	08/21/2022 1119
1,2-Dibromoethane (EDB)	50	51		1	101	77-121	08/21/2022 1119
1,2-Dichlorobenzene	50	51		1	102	80-119	08/21/2022 1119
1,3-Dichlorobenzene	50	51		1	102	80-119	08/21/2022 1119
1,4-Dichlorobenzene	50	48		1	96	79-118	08/21/2022 1119
Dichlorodifluoromethane	50	55		1	109	32-152	08/21/2022 1119
1,1-Dichloroethane	50	49		1	98	77-125	08/21/2022 1119
1,2-Dichloroethane	50	48		1	97	73-128	08/21/2022 1119
1,1-Dichloroethene	50	49		1	97	71-131	08/21/2022 1119
cis-1,2-Dichloroethene	50	49		1	97	78-123	08/21/2022 1119
trans-1,2-Dichloroethene	50	48		1	96	75-124	08/21/2022 1119
1,2-Dichloropropane	50	50		1	100	78-122	08/21/2022 1119
cis-1,3-Dichloropropene	50	54		1	107	75-124	08/21/2022 1119
trans-1,3-Dichloropropene	50	55		1	111	73-127	08/21/2022 1119
Ethylbenzene	50	52		1	103	79-121	08/21/2022 1119
2-Hexanone	100	99		1	99	57-139	08/21/2022 1119
Isopropylbenzene	50	56		1	112	72-131	08/21/2022 1119
Methyl acetate	50	54		1	108	56-136	08/21/2022 1119
Methyl tertiary butyl ether (MTBE)	50	54		1	108	71-124	08/21/2022 1119
4-Methyl-2-pentanone	100	99		1	99	67-130	08/21/2022 1119
Methylcyclohexane	50	51		1	102	72-132	08/21/2022 1119
Methylene chloride	50	48		1	95	74-124	08/21/2022 1119
Styrene	50	56		1	112	78-123	08/21/2022 1119
1,1,2,2-Tetrachloroethane	50	52		1	104	71-121	08/21/2022 1119
Tetrachloroethene	50	50		1	101	74-129	08/21/2022 1119
Toluene	50	54		1	107	80-121	08/21/2022 1119
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	48		1	97	70-136	08/21/2022 1119
1,2,4-Trichlorobenzene	50	49		1	99	69-130	08/21/2022 1119
1,1,1-Trichloroethane	50	48		1	95	74-131	08/21/2022 1119
1,1,2-Trichloroethane	50	51		1	101	80-119	08/21/2022 1119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51772-002
Batch: 51772
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	46		1	93	79-123	08/21/2022 1119
Trichlorofluoromethane	50	49		1	98	65-141	08/21/2022 1119
Vinyl chloride	50	51		1	101	58-137	08/21/2022 1119
Xylenes (total)	100	110		1	109	79-121	08/21/2022 1119

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		91	81-118
Bromofluorobenzene		96	85-114
Toluene-d8		100	89-112
Dibromofluoromethane		93	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ52094-001
Batch: 52094
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	08/24/2022 1121
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	08/24/2022 1121
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	08/24/2022 1121
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	08/24/2022 1121
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	08/24/2022 1121
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	08/24/2022 1121
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	08/24/2022 1121
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	08/24/2022 1121
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	08/24/2022 1121
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	08/24/2022 1121
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	08/24/2022 1121
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ52094-001
Batch: 52094
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	08/24/2022 1121

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		111	81-118
Bromofluorobenzene		102	85-114
Toluene-d8		107	89-112
Dibromofluoromethane		111	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ52094-002
Batch: 52094
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	110		1	113	39-160	08/24/2022 0922
Benzene	50	48		1	97	79-120	08/24/2022 0922
Bromodichloromethane	50	50		1	101	79-125	08/24/2022 0922
Bromoform	50	46		1	92	66-130	08/24/2022 0922
Bromomethane (Methyl bromide)	50	47		1	94	53-141	08/24/2022 0922
2-Butanone (MEK)	100	110		1	115	56-143	08/24/2022 0922
Carbon disulfide	50	46		1	92	64-133	08/24/2022 0922
Carbon tetrachloride	50	50		1	99	72-136	08/24/2022 0922
Chlorobenzene	50	51		1	101	82-118	08/24/2022 0922
Chloroethane	50	45		1	91	60-138	08/24/2022 0922
Chloroform	50	50		1	99	79-124	08/24/2022 0922
Chloromethane (Methyl chloride)	50	44		1	88	50-139	08/24/2022 0922
Cyclohexane	50	39		1	78	71-130	08/24/2022 0922
1,2-Dibromo-3-chloropropane (DBCP)	50	49		1	97	62-128	08/24/2022 0922
Dibromochloromethane	50	52		1	104	74-126	08/24/2022 0922
1,2-Dibromoethane (EDB)	50	52		1	105	77-121	08/24/2022 0922
1,2-Dichlorobenzene	50	51		1	102	80-119	08/24/2022 0922
1,3-Dichlorobenzene	50	50		1	100	80-119	08/24/2022 0922
1,4-Dichlorobenzene	50	50		1	100	79-118	08/24/2022 0922
Dichlorodifluoromethane	50	44		1	89	32-152	08/24/2022 0922
1,1-Dichloroethane	50	47		1	94	77-125	08/24/2022 0922
1,2-Dichloroethane	50	50		1	100	73-128	08/24/2022 0922
1,1-Dichloroethene	50	48		1	96	71-131	08/24/2022 0922
cis-1,2-Dichloroethene	50	49		1	99	78-123	08/24/2022 0922
trans-1,2-Dichloroethene	50	50		1	100	75-124	08/24/2022 0922
1,2-Dichloropropane	50	47		1	93	78-122	08/24/2022 0922
cis-1,3-Dichloropropene	50	50		1	100	75-124	08/24/2022 0922
trans-1,3-Dichloropropene	50	52		1	103	73-127	08/24/2022 0922
Ethylbenzene	50	50		1	101	79-121	08/24/2022 0922
2-Hexanone	100	95		1	95	57-139	08/24/2022 0922
Isopropylbenzene	50	52		1	103	72-131	08/24/2022 0922
Methyl acetate	50	49		1	98	56-136	08/24/2022 0922
Methyl tertiary butyl ether (MTBE)	50	52		1	104	71-124	08/24/2022 0922
4-Methyl-2-pentanone	100	93		1	93	67-130	08/24/2022 0922
Methylcyclohexane	50	48		1	97	72-132	08/24/2022 0922
Methylene chloride	50	50		1	100	74-124	08/24/2022 0922
Styrene	50	52		1	104	78-123	08/24/2022 0922
1,1,2,2-Tetrachloroethane	50	47		1	94	71-121	08/24/2022 0922
Tetrachloroethene	50	50		1	99	74-129	08/24/2022 0922
Toluene	50	50		1	100	80-121	08/24/2022 0922
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	49		1	97	70-136	08/24/2022 0922
1,2,4-Trichlorobenzene	50	48		1	97	69-130	08/24/2022 0922
1,1,1-Trichloroethane	50	50		1	100	74-131	08/24/2022 0922
1,1,2-Trichloroethane	50	51		1	101	80-119	08/24/2022 0922

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ52094-002
Batch: 52094
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	50		1	100	79-123	08/24/2022 0922
Trichlorofluoromethane	50	46		1	91	65-141	08/24/2022 0922
Vinyl chloride	50	40		1	80	58-137	08/24/2022 0922
Xylenes (total)	100	100		1	102	79-121	08/24/2022 0922

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		100	81-118
Bromofluorobenzene		102	85-114
Toluene-d8		100	89-112
Dibromofluoromethane		106	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ52233-001
Batch: 52233
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	08/25/2022 1201
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	08/25/2022 1201
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	08/25/2022 1201
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	08/25/2022 1201
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	08/25/2022 1201
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	08/25/2022 1201
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	08/25/2022 1201
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	08/25/2022 1201
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	08/25/2022 1201
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	08/25/2022 1201
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	08/25/2022 1201
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ52233-001
Batch: 52233
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 1201

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		108	81-118
Bromofluorobenzene		100	85-114
Toluene-d8		106	89-112
Dibromofluoromethane		107	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ52233-002
Batch: 52233
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	170	N	1	169	39-160	08/25/2022 0951
Benzene	50	51		1	102	79-120	08/25/2022 0951
Bromodichloromethane	50	52		1	104	79-125	08/25/2022 0951
Bromoform	50	45		1	91	66-130	08/25/2022 0951
Bromomethane (Methyl bromide)	50	49		1	99	53-141	08/25/2022 0951
2-Butanone (MEK)	100	140	N	1	144	56-143	08/25/2022 0951
Carbon disulfide	50	50		1	99	64-133	08/25/2022 0951
Carbon tetrachloride	50	54		1	108	72-136	08/25/2022 0951
Chlorobenzene	50	52		1	104	82-118	08/25/2022 0951
Chloroethane	50	48		1	97	60-138	08/25/2022 0951
Chloroform	50	53		1	105	79-124	08/25/2022 0951
Chloromethane (Methyl chloride)	50	46		1	91	50-139	08/25/2022 0951
Cyclohexane	50	42		1	85	71-130	08/25/2022 0951
1,2-Dibromo-3-chloropropane (DBCP)	50	51		1	102	62-128	08/25/2022 0951
Dibromochloromethane	50	52		1	104	74-126	08/25/2022 0951
1,2-Dibromoethane (EDB)	50	53		1	106	77-121	08/25/2022 0951
1,2-Dichlorobenzene	50	53		1	106	80-119	08/25/2022 0951
1,3-Dichlorobenzene	50	52		1	104	80-119	08/25/2022 0951
1,4-Dichlorobenzene	50	51		1	103	79-118	08/25/2022 0951
Dichlorodifluoromethane	50	46		1	92	32-152	08/25/2022 0951
1,1-Dichloroethane	50	50		1	100	77-125	08/25/2022 0951
1,2-Dichloroethane	50	52		1	103	73-128	08/25/2022 0951
1,1-Dichloroethene	50	52		1	104	71-131	08/25/2022 0951
cis-1,2-Dichloroethene	50	52		1	104	78-123	08/25/2022 0951
trans-1,2-Dichloroethene	50	53		1	106	75-124	08/25/2022 0951
1,2-Dichloropropane	50	49		1	98	78-122	08/25/2022 0951
cis-1,3-Dichloropropene	50	52		1	103	75-124	08/25/2022 0951
trans-1,3-Dichloropropene	50	52		1	105	73-127	08/25/2022 0951
Ethylbenzene	50	52		1	105	79-121	08/25/2022 0951
2-Hexanone	100	110		1	106	57-139	08/25/2022 0951
Isopropylbenzene	50	54		1	109	72-131	08/25/2022 0951
Methyl acetate	50	51		1	101	56-136	08/25/2022 0951
Methyl tertiary butyl ether (MTBE)	50	52		1	104	71-124	08/25/2022 0951
4-Methyl-2-pentanone	100	94		1	94	67-130	08/25/2022 0951
Methylcyclohexane	50	52		1	105	72-132	08/25/2022 0951
Methylene chloride	50	53		1	105	74-124	08/25/2022 0951
Styrene	50	54		1	108	78-123	08/25/2022 0951
1,1,2,2-Tetrachloroethane	50	49		1	98	71-121	08/25/2022 0951
Tetrachloroethene	50	51		1	103	74-129	08/25/2022 0951
Toluene	50	53		1	105	80-121	08/25/2022 0951
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	54		1	108	70-136	08/25/2022 0951
1,2,4-Trichlorobenzene	50	54		1	107	69-130	08/25/2022 0951
1,1,1-Trichloroethane	50	54		1	108	74-131	08/25/2022 0951
1,1,2-Trichloroethane	50	52		1	104	80-119	08/25/2022 0951

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ52233-002
Batch: 52233
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	53		1	105	79-123	08/25/2022 0951
Trichlorofluoromethane	50	48		1	96	65-141	08/25/2022 0951
Vinyl chloride	50	44		1	88	58-137	08/25/2022 0951
Xylenes (total)	100	110		1	107	79-121	08/25/2022 0951

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		101	81-118
Bromofluorobenzene		103	85-114
Toluene-d8		104	89-112
Dibromofluoromethane		108	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MS

Sample ID: XH11020-001MS
Batch: 52233
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	ND	5000	4800		50	95	39-160	08/25/2022 1910
Benzene	ND	2500	2700		50	107	79-120	08/25/2022 1910
Bromodichloromethane	ND	2500	2600		50	105	79-125	08/25/2022 1910
Bromoform	ND	2500	2100		50	82	66-130	08/25/2022 1910
Bromomethane (Methyl bromide)	ND	2500	2500		50	99	53-141	08/25/2022 1910
2-Butanone (MEK)	ND	5000	5500		50	111	56-143	08/25/2022 1910
Carbon disulfide	ND	2500	2600		50	105	64-133	08/25/2022 1910
Carbon tetrachloride	ND	2500	2800		50	113	72-136	08/25/2022 1910
Chlorobenzene	ND	2500	2600		50	105	82-118	08/25/2022 1910
Chloroethane	ND	2500	2500		50	100	60-138	08/25/2022 1910
Chloroform	ND	2500	2800		50	112	79-124	08/25/2022 1910
Chloromethane (Methyl chloride)	ND	2500	2400		50	96	50-139	08/25/2022 1910
Cyclohexane	ND	2500	2300		50	93	71-130	08/25/2022 1910
1,2-Dibromo-3-chloropropane (DBCP)	ND	2500	2300		50	92	62-128	08/25/2022 1910
Dibromochloromethane	ND	2500	2400		50	97	74-126	08/25/2022 1910
1,2-Dibromoethane (EDB)	ND	2500	2600		50	103	77-121	08/25/2022 1910
1,2-Dichlorobenzene	ND	2500	2500		50	101	80-119	08/25/2022 1910
1,3-Dichlorobenzene	ND	2500	2500		50	101	80-119	08/25/2022 1910
1,4-Dichlorobenzene	ND	2500	2500		50	100	79-118	08/25/2022 1910
Dichlorodifluoromethane	ND	2500	2100		50	84	32-152	08/25/2022 1910
1,1-Dichloroethane	ND	2500	2700		50	106	77-125	08/25/2022 1910
1,2-Dichloroethane	ND	2500	2600		50	105	73-128	08/25/2022 1910
1,1-Dichloroethene	ND	2500	2700		50	107	71-131	08/25/2022 1910
cis-1,2-Dichloroethene	420	2500	3100		50	108	78-123	08/25/2022 1910
trans-1,2-Dichloroethene	ND	2500	2800		50	110	75-124	08/25/2022 1910
1,2-Dichloropropane	ND	2500	2600		50	103	78-122	08/25/2022 1910
cis-1,3-Dichloropropene	ND	2500	2500		50	102	75-124	08/25/2022 1910
trans-1,3-Dichloropropene	ND	2500	2500		50	102	73-127	08/25/2022 1910
Ethylbenzene	ND	2500	2800		50	110	79-121	08/25/2022 1910
2-Hexanone	ND	5000	4900		50	98	57-139	08/25/2022 1910
Isopropylbenzene	ND	2500	2800		50	113	72-131	08/25/2022 1910
Methyl acetate	ND	2500	2500		50	100	56-136	08/25/2022 1910
Methyl tertiary butyl ether (MTBE)	ND	2500	2600		50	105	71-124	08/25/2022 1910
4-Methyl-2-pentanone	ND	5000	4800		50	96	67-130	08/25/2022 1910
Methylcyclohexane	ND	2500	2800		50	110	72-132	08/25/2022 1910
Methylene chloride	ND	2500	2700		50	108	74-124	08/25/2022 1910
Styrene	ND	2500	2800		50	112	78-123	08/25/2022 1910
1,1,2,2-Tetrachloroethane	ND	2500	2400		50	95	71-121	08/25/2022 1910
Tetrachloroethene	150	2500	2700		50	102	74-129	08/25/2022 1910
Toluene	ND	2500	2700		50	108	80-121	08/25/2022 1910
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	2500	2700		50	110	70-136	08/25/2022 1910
1,2,4-Trichlorobenzene	ND	2500	2300		50	92	69-130	08/25/2022 1910
1,1,1-Trichloroethane	ND	2500	2900		50	115	74-131	08/25/2022 1910
1,1,2-Trichloroethane	ND	2500	2600		50	103	80-119	08/25/2022 1910

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MS

Sample ID: XH11020-001MS
Batch: 52233
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	4600	2500	7100		50	99	79-123	08/25/2022 1910
Trichlorofluoromethane	ND	2500	2400		50	97	65-141	08/25/2022 1910
Vinyl chloride	ND	2500	2400		50	95	58-137	08/25/2022 1910
Xylenes (total)	ND	5000	5400		50	109	79-121	08/25/2022 1910

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		104	81-118
Bromofluorobenzene		105	85-114
Toluene-d8		104	89-112
Dibromofluoromethane		110	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XH11020-001MD
Batch: 52233
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acetone	ND	5000	4500		50	89	6.7	39-160	20	08/25/2022 1933
Benzene	ND	2500	2600		50	106	0.86	79-120	20	08/25/2022 1933
Bromodichloromethane	ND	2500	2600		50	103	1.3	79-125	20	08/25/2022 1933
Bromoform	ND	2500	2000		50	80	2.8	66-130	20	08/25/2022 1933
Bromomethane (Methyl bromide)	ND	2500	2100		50	85	16	53-141	20	08/25/2022 1933
2-Butanone (MEK)	ND	5000	5400		50	108	2.6	56-143	20	08/25/2022 1933
Carbon disulfide	ND	2500	2700		50	106	1.4	64-133	20	08/25/2022 1933
Carbon tetrachloride	ND	2500	2800		50	111	1.6	72-136	20	08/25/2022 1933
Chlorobenzene	ND	2500	2600		50	105	0.37	82-118	20	08/25/2022 1933
Chloroethane	ND	2500	2000	+	50	81	21	60-138	20	08/25/2022 1933
Chloroform	ND	2500	2700		50	108	3.7	79-124	20	08/25/2022 1933
Chloromethane (Methyl chloride)	ND	2500	2100		50	85	13	50-139	20	08/25/2022 1933
Cyclohexane	ND	2500	2200		50	90	3.5	71-130	20	08/25/2022 1933
1,2-Dibromo-3-chloropropane (DBCP)	ND	2500	2300		50	91	1.3	62-128	20	08/25/2022 1933
Dibromochloromethane	ND	2500	2400		50	98	0.75	74-126	20	08/25/2022 1933
1,2-Dibromoethane (EDB)	ND	2500	2600		50	103	0.40	77-121	20	08/25/2022 1933
1,2-Dichlorobenzene	ND	2500	2500		50	101	0.56	80-119	20	08/25/2022 1933
1,3-Dichlorobenzene	ND	2500	2600		50	103	1.6	80-119	20	08/25/2022 1933
1,4-Dichlorobenzene	ND	2500	2500		50	101	1.2	79-118	20	08/25/2022 1933
Dichlorodifluoromethane	ND	2500	2100		50	85	1.3	32-152	20	08/25/2022 1933
1,1-Dichloroethane	ND	2500	2600		50	105	1.0	77-125	20	08/25/2022 1933
1,2-Dichloroethane	ND	2500	2500		50	100	4.5	73-128	20	08/25/2022 1933
1,1-Dichloroethene	ND	2500	2700		50	110	2.5	71-131	20	08/25/2022 1933
cis-1,2-Dichloroethene	420	2500	3100		50	108	0.097	78-123	20	08/25/2022 1933
trans-1,2-Dichloroethene	ND	2500	2800		50	111	0.78	75-124	20	08/25/2022 1933
1,2-Dichloropropane	ND	2500	2500		50	101	2.3	78-122	20	08/25/2022 1933
cis-1,3-Dichloropropene	ND	2500	2500		50	102	0.26	75-124	20	08/25/2022 1933
trans-1,3-Dichloropropene	ND	2500	2600		50	103	1.0	73-127	20	08/25/2022 1933
Ethylbenzene	ND	2500	2700		50	108	2.1	79-121	20	08/25/2022 1933
2-Hexanone	ND	5000	4700		50	94	4.4	57-139	20	08/25/2022 1933
Isopropylbenzene	ND	2500	2700		50	109	3.1	72-131	20	08/25/2022 1933
Methyl acetate	ND	2500	2400		50	96	3.7	56-136	20	08/25/2022 1933
Methyl tertiary butyl ether (MTBE)	ND	2500	2500		50	101	3.4	71-124	20	08/25/2022 1933
4-Methyl-2-pentanone	ND	5000	4500		50	90	6.2	67-130	20	08/25/2022 1933
Methylcyclohexane	ND	2500	2800		50	111	0.92	72-132	20	08/25/2022 1933
Methylene chloride	ND	2500	2700		50	109	0.95	74-124	20	08/25/2022 1933
Styrene	ND	2500	2700		50	108	2.9	78-123	20	08/25/2022 1933
1,1,2,2-Tetrachloroethane	ND	2500	2400		50	95	0.22	71-121	20	08/25/2022 1933
Tetrachloroethene	150	2500	2800		50	105	2.0	74-129	20	08/25/2022 1933
Toluene	ND	2500	2700		50	108	0.019	80-121	20	08/25/2022 1933
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	2500	2500		50	101	8.6	70-136	20	08/25/2022 1933
1,2,4-Trichlorobenzene	ND	2500	2400		50	96	4.8	69-130	20	08/25/2022 1933
1,1,1-Trichloroethane	ND	2500	2800		50	112	2.7	74-131	20	08/25/2022 1933
1,1,2-Trichloroethane	ND	2500	2600		50	102	0.32	80-119	20	08/25/2022 1933

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XH11020-001MD
Batch: 52233
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Trichloroethene	4600	2500	7200		50	104	1.7	79-123	20	08/25/2022 1933
Trichlorofluoromethane	ND	2500	2200		50	87	10	65-141	20	08/25/2022 1933
Vinyl chloride	ND	2500	2000		50	81	16	58-137	20	08/25/2022 1933
Xylenes (total)	ND	5000	5400		50	107	1.4	79-121	20	08/25/2022 1933

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		101	81-118
Bromofluorobenzene		102	85-114
Toluene-d8		106	89-112
Dibromofluoromethane		110	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ52303-001
Batch: 52303
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	08/25/2022 2041
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	08/25/2022 2041
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	08/25/2022 2041
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	08/25/2022 2041
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	08/25/2022 2041
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	08/25/2022 2041
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	08/25/2022 2041
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	08/25/2022 2041
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	08/25/2022 2041
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	08/25/2022 2041
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	08/25/2022 2041
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ52303-001
Batch: 52303
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		98	81-118
Bromofluorobenzene		103	85-114
Toluene-d8		99	89-112
Dibromofluoromethane		95	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ52303-002
Batch: 52303
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	150		1	153	39-160	08/25/2022 1934
Benzene	50	51		1	102	79-120	08/25/2022 1934
Bromodichloromethane	50	45		1	90	79-125	08/25/2022 1934
Bromoform	50	41		1	82	66-130	08/25/2022 1934
Bromomethane (Methyl bromide)	50	47		1	94	53-141	08/25/2022 1934
2-Butanone (MEK)	100	110		1	114	56-143	08/25/2022 1934
Carbon disulfide	50	48		1	97	64-133	08/25/2022 1934
Carbon tetrachloride	50	44		1	88	72-136	08/25/2022 1934
Chlorobenzene	50	45		1	91	82-118	08/25/2022 1934
Chloroethane	50	42		1	85	60-138	08/25/2022 1934
Chloroform	50	48		1	96	79-124	08/25/2022 1934
Chloromethane (Methyl chloride)	50	41		1	83	50-139	08/25/2022 1934
Cyclohexane	50	47		1	94	71-130	08/25/2022 1934
1,2-Dibromo-3-chloropropane (DBCP)	50	41		1	81	62-128	08/25/2022 1934
Dibromochloromethane	50	44		1	88	74-126	08/25/2022 1934
1,2-Dibromoethane (EDB)	50	48		1	95	77-121	08/25/2022 1934
1,2-Dichlorobenzene	50	44		1	89	80-119	08/25/2022 1934
1,3-Dichlorobenzene	50	45		1	91	80-119	08/25/2022 1934
1,4-Dichlorobenzene	50	44		1	88	79-118	08/25/2022 1934
Dichlorodifluoromethane	50	43		1	86	32-152	08/25/2022 1934
1,1-Dichloroethane	50	48		1	97	77-125	08/25/2022 1934
1,2-Dichloroethane	50	47		1	93	73-128	08/25/2022 1934
1,1-Dichloroethene	50	47		1	93	71-131	08/25/2022 1934
cis-1,2-Dichloroethene	50	49		1	99	78-123	08/25/2022 1934
trans-1,2-Dichloroethene	50	47		1	94	75-124	08/25/2022 1934
1,2-Dichloropropane	50	47		1	95	78-122	08/25/2022 1934
cis-1,3-Dichloropropene	50	48		1	96	75-124	08/25/2022 1934
trans-1,3-Dichloropropene	50	48		1	96	73-127	08/25/2022 1934
Ethylbenzene	50	48		1	95	79-121	08/25/2022 1934
2-Hexanone	100	110		1	113	57-139	08/25/2022 1934
Isopropylbenzene	50	47		1	93	72-131	08/25/2022 1934
Methyl acetate	50	54		1	107	56-136	08/25/2022 1934
Methyl tertiary butyl ether (MTBE)	50	51		1	103	71-124	08/25/2022 1934
4-Methyl-2-pentanone	100	100		1	102	67-130	08/25/2022 1934
Methylcyclohexane	50	45		1	90	72-132	08/25/2022 1934
Methylene chloride	50	47		1	94	74-124	08/25/2022 1934
Styrene	50	48		1	97	78-123	08/25/2022 1934
1,1,2,2-Tetrachloroethane	50	53		1	106	71-121	08/25/2022 1934
Tetrachloroethene	50	47		1	93	74-129	08/25/2022 1934
Toluene	50	49		1	99	80-121	08/25/2022 1934
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	40		1	80	70-136	08/25/2022 1934
1,2,4-Trichlorobenzene	50	42		1	84	69-130	08/25/2022 1934
1,1,1-Trichloroethane	50	46		1	92	74-131	08/25/2022 1934
1,1,2-Trichloroethane	50	48		1	97	80-119	08/25/2022 1934

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ52303-002
Batch: 52303
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	44		1	87	79-123	08/25/2022 1934
Trichlorofluoromethane	50	44		1	88	65-141	08/25/2022 1934
Vinyl chloride	50	43		1	86	58-137	08/25/2022 1934
Xylenes (total)	100	96		1	96	79-121	08/25/2022 1934

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		89	81-118
Bromofluorobenzene		95	85-114
Toluene-d8		93	89-112
Dibromofluoromethane		90	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MS

Sample ID: XH11020-002MS
Batch: 52303
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	ND	5000	6100		50	122	39-160	08/26/2022 0458
Benzene	ND	2500	2700		50	108	79-120	08/26/2022 0458
Bromodichloromethane	ND	2500	2300		50	90	79-125	08/26/2022 0458
Bromoform	ND	2500	2000		50	77	66-130	08/26/2022 0458
Bromomethane (Methyl bromide)	ND	2500	2600		50	105	53-141	08/26/2022 0458
2-Butanone (MEK)	ND	5000	5000		50	100	56-143	08/26/2022 0458
Carbon disulfide	ND	2500	2300		50	91	64-133	08/26/2022 0458
Carbon tetrachloride	ND	2500	2300		50	92	72-136	08/26/2022 0458
Chlorobenzene	ND	2500	2300		50	94	82-118	08/26/2022 0458
Chloroethane	ND	2500	2400		50	94	60-138	08/26/2022 0458
Chloroform	ND	2500	2500		50	101	79-124	08/26/2022 0458
Chloromethane (Methyl chloride)	ND	2500	2300		50	91	50-139	08/26/2022 0458
Cyclohexane	ND	2500	2500		50	100	71-130	08/26/2022 0458
1,2-Dibromo-3-chloropropane (DBCP)	ND	2500	1800		50	73	62-128	08/26/2022 0458
Dibromochloromethane	ND	2500	2100		50	86	74-126	08/26/2022 0458
1,2-Dibromoethane (EDB)	ND	2500	2400		50	96	77-121	08/26/2022 0458
1,2-Dichlorobenzene	ND	2500	2200		50	88	80-119	08/26/2022 0458
1,3-Dichlorobenzene	ND	2500	2300		50	92	80-119	08/26/2022 0458
1,4-Dichlorobenzene	ND	2500	2200		50	88	79-118	08/26/2022 0458
Dichlorodifluoromethane	ND	2500	2600		50	103	32-152	08/26/2022 0458
1,1-Dichloroethane	ND	2500	2500		50	102	77-125	08/26/2022 0458
1,2-Dichloroethane	ND	2500	2400		50	96	73-128	08/26/2022 0458
1,1-Dichloroethene	ND	2500	2500		50	98	71-131	08/26/2022 0458
cis-1,2-Dichloroethene	420	2500	3000		50	103	78-123	08/26/2022 0458
trans-1,2-Dichloroethene	ND	2500	2500		50	101	75-124	08/26/2022 0458
1,2-Dichloropropane	ND	2500	2500		50	99	78-122	08/26/2022 0458
cis-1,3-Dichloropropene	ND	2500	2300		50	94	75-124	08/26/2022 0458
trans-1,3-Dichloropropene	ND	2500	2200		50	90	73-127	08/26/2022 0458
Ethylbenzene	ND	2500	2500		50	99	79-121	08/26/2022 0458
2-Hexanone	ND	5000	5200		50	105	57-139	08/26/2022 0458
Isopropylbenzene	ND	2500	2500		50	98	72-131	08/26/2022 0458
Methyl acetate	ND	2500	2600		50	106	56-136	08/26/2022 0458
Methyl tertiary butyl ether (MTBE)	ND	2500	2600		50	104	71-124	08/26/2022 0458
4-Methyl-2-pentanone	ND	5000	5100		50	101	67-130	08/26/2022 0458
Methylcyclohexane	ND	2500	2500		50	98	72-132	08/26/2022 0458
Methylene chloride	ND	2500	2400		50	95	74-124	08/26/2022 0458
Styrene	ND	2500	2400		50	98	78-123	08/26/2022 0458
1,1,2,2-Tetrachloroethane	ND	2500	2600		50	104	71-121	08/26/2022 0458
Tetrachloroethene	220	2500	2700		50	98	74-129	08/26/2022 0458
Toluene	ND	2500	2500		50	102	80-121	08/26/2022 0458
1,1,2-Trichloro-1,2,2-Trifluoroethane	78	2500	2400		50	91	70-136	08/26/2022 0458
1,2,4-Trichlorobenzene	ND	2500	2000		50	78	69-130	08/26/2022 0458
1,1,1-Trichloroethane	ND	2500	2400		50	97	74-131	08/26/2022 0458
1,1,2-Trichloroethane	ND	2500	2400		50	98	80-119	08/26/2022 0458

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MS

Sample ID: XH11020-002MS
Batch: 52303
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	5100	2500	7400		50	89	79-123	08/26/2022 0458
Trichlorofluoromethane	ND	2500	2600		50	105	65-141	08/26/2022 0458
Vinyl chloride	ND	2500	2500		50	100	58-137	08/26/2022 0458
Xylenes (total)	ND	5000	4900		50	98	79-121	08/26/2022 0458

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		92	81-118
Bromofluorobenzene		97	85-114
Toluene-d8		96	89-112
Dibromofluoromethane		94	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XH11020-002MD
Batch: 52303
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acetone	ND	5000	6000		50	120	1.6	39-160	20	08/26/2022 0521
Benzene	ND	2500	2700		50	108	0.77	79-120	20	08/26/2022 0521
Bromodichloromethane	ND	2500	2300		50	91	0.45	79-125	20	08/26/2022 0521
Bromoform	ND	2500	2000		50	78	1.8	66-130	20	08/26/2022 0521
Bromomethane (Methyl bromide)	ND	2500	2500		50	99	6.0	53-141	20	08/26/2022 0521
2-Butanone (MEK)	ND	5000	5100		50	103	2.4	56-143	20	08/26/2022 0521
Carbon disulfide	ND	2500	2300		50	91	0.19	64-133	20	08/26/2022 0521
Carbon tetrachloride	ND	2500	2300		50	92	0.27	72-136	20	08/26/2022 0521
Chlorobenzene	ND	2500	2300		50	94	0.15	82-118	20	08/26/2022 0521
Chloroethane	ND	2500	2300		50	91	4.1	60-138	20	08/26/2022 0521
Chloroform	ND	2500	2500		50	100	0.65	79-124	20	08/26/2022 0521
Chloromethane (Methyl chloride)	ND	2500	2100		50	85	6.2	50-139	20	08/26/2022 0521
Cyclohexane	ND	2500	2500		50	100	0.48	71-130	20	08/26/2022 0521
1,2-Dibromo-3-chloropropane (DBCP)	ND	2500	1900		50	77	4.3	62-128	20	08/26/2022 0521
Dibromochloromethane	ND	2500	2100		50	86	0.087	74-126	20	08/26/2022 0521
1,2-Dibromoethane (EDB)	ND	2500	2400		50	95	0.82	77-121	20	08/26/2022 0521
1,2-Dichlorobenzene	ND	2500	2200		50	90	1.7	80-119	20	08/26/2022 0521
1,3-Dichlorobenzene	ND	2500	2300		50	93	1.2	80-119	20	08/26/2022 0521
1,4-Dichlorobenzene	ND	2500	2200		50	88	0.21	79-118	20	08/26/2022 0521
Dichlorodifluoromethane	ND	2500	2400		50	95	8.6	32-152	20	08/26/2022 0521
1,1-Dichloroethane	ND	2500	2500		50	101	0.95	77-125	20	08/26/2022 0521
1,2-Dichloroethane	ND	2500	2400		50	96	0.51	73-128	20	08/26/2022 0521
1,1-Dichloroethene	ND	2500	2400		50	98	0.60	71-131	20	08/26/2022 0521
cis-1,2-Dichloroethene	420	2500	3000		50	103	0.025	78-123	20	08/26/2022 0521
trans-1,2-Dichloroethene	ND	2500	2500		50	99	2.4	75-124	20	08/26/2022 0521
1,2-Dichloropropane	ND	2500	2400		50	97	1.3	78-122	20	08/26/2022 0521
cis-1,3-Dichloropropene	ND	2500	2400		50	94	0.55	75-124	20	08/26/2022 0521
trans-1,3-Dichloropropene	ND	2500	2300		50	91	0.63	73-127	20	08/26/2022 0521
Ethylbenzene	ND	2500	2500		50	99	0.72	79-121	20	08/26/2022 0521
2-Hexanone	ND	5000	5200		50	105	0.018	57-139	20	08/26/2022 0521
Isopropylbenzene	ND	2500	2500		50	98	0.013	72-131	20	08/26/2022 0521
Methyl acetate	ND	2500	2600		50	103	2.6	56-136	20	08/26/2022 0521
Methyl tertiary butyl ether (MTBE)	ND	2500	2500		50	99	5.2	71-124	20	08/26/2022 0521
4-Methyl-2-pentanone	ND	5000	5100		50	101	0.17	67-130	20	08/26/2022 0521
Methylcyclohexane	ND	2500	2500		50	98	0.098	72-132	20	08/26/2022 0521
Methylene chloride	ND	2500	2400		50	94	0.54	74-124	20	08/26/2022 0521
Styrene	ND	2500	2500		50	98	0.43	78-123	20	08/26/2022 0521
1,1,2,2-Tetrachloroethane	ND	2500	2600		50	104	0.038	71-121	20	08/26/2022 0521
Tetrachloroethene	220	2500	2700		50	98	0.19	74-129	20	08/26/2022 0521
Toluene	ND	2500	2600		50	102	0.41	80-121	20	08/26/2022 0521
1,1,2-Trichloro-1,2,2-Trifluoroethane	78	2500	2400		50	95	3.8	70-136	20	08/26/2022 0521
1,2,4-Trichlorobenzene	ND	2500	2100		50	83	5.9	69-130	20	08/26/2022 0521
1,1,1-Trichloroethane	ND	2500	2400		50	97	0.25	74-131	20	08/26/2022 0521
1,1,2-Trichloroethane	ND	2500	2400		50	98	0.25	80-119	20	08/26/2022 0521

LOQ = Limit of Quantitation
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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

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P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XH11020-002MD
Batch: 52303
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Trichloroethene	5100	2500	7300		50	88	0.48	79-123	20	08/26/2022 0521
Trichlorofluoromethane	ND	2500	2500		50	101	3.9	65-141	20	08/26/2022 0521
Vinyl chloride	ND	2500	2300		50	94	6.1	58-137	20	08/26/2022 0521
Xylenes (total)	ND	5000	4900		50	98	0.50	79-121	20	08/26/2022 0521

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		96	81-118
Bromofluorobenzene		100	85-114
Toluene-d8		100	89-112
Dibromofluoromethane		98	80-119

LOQ = Limit of Quantitation
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Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ50961-001
Batch: 50961
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/12/2022 1750

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acenaphthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Acenaphthylene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Acetophenone	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Atrazine	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Benzaldehyde	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Benzo(a)anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Benzo(a)pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Benzo(b)fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Benzo(g,h,i)perylene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Benzo(k)fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
1,1'-Biphenyl	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
4-Bromophenyl phenyl ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Butyl benzyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Caprolactam	2.0	U	1	3.0	2.0	1.0	ug/L	08/17/2022 1049
Carbazole	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
bis (2-Chloro-1-methylethyl) ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
4-Chloro-3-methyl phenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
4-Chloroaniline	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
bis(2-Chloroethoxy)methane	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
bis(2-Chloroethyl)ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
2-Chloronaphthalene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
2-Chlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
4-Chlorophenyl phenyl ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Chrysene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Dibenzo(a,h)anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Dibenzofuran	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
3,3'-Dichlorobenzidine	3.5	U	1	4.0	3.5	1.8	ug/L	08/17/2022 1049
2,4-Dichlorophenol	0.50	U	1	1.6	0.50	0.25	ug/L	08/17/2022 1049
Diethylphthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Dimethyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
2,4-Dimethylphenol	1.5	U	1	2.0	1.5	0.62	ug/L	08/17/2022 1049
Di-n-butyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
4,6-Dinitro-2-methylphenol	2.0	U	1	4.0	2.0	1.0	ug/L	08/17/2022 1049
2,4-Dinitrophenol	2.0	U	1	4.0	2.0	1.0	ug/L	08/17/2022 1049
2,4-Dinitrotoluene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
2,6-Dinitrotoluene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Di-n-octylphthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
bis(2-Ethylhexyl)phthalate	3.0	U	1	4.0	3.0	1.5	ug/L	08/17/2022 1049
Fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Fluorene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Hexachlorobenzene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Hexachlorobutadiene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Hexachlorocyclopentadiene	4.0	U	1	4.0	4.0	2.0	ug/L	08/17/2022 1049

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LOD = Limit of Detection

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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ50961-001
Batch: 50961
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/12/2022 1750

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Hexachloroethane	0.40	U	1	0.80	0.40	0.17	ug/L	08/17/2022 1049
Indeno(1,2,3-c,d)pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Isophorone	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
2-Methylnaphthalene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
2-Methylphenol	1.3	U	1	1.6	1.3	0.67	ug/L	08/17/2022 1049
3+4-Methylphenol	3.0	U	1	4.0	3.0	1.5	ug/L	08/17/2022 1049
Naphthalene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
2-Nitroaniline	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
3-Nitroaniline	2.0	U	1	3.0	2.0	1.0	ug/L	08/17/2022 1049
4-Nitroaniline	3.0	U	1	4.0	3.0	1.5	ug/L	08/17/2022 1049
Nitrobenzene	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
2-Nitrophenol	2.0	U	1	3.2	2.0	1.0	ug/L	08/17/2022 1049
4-Nitrophenol	4.0	U	1	5.0	4.0	2.0	ug/L	08/17/2022 1049
N-Nitrosodi-n-propylamine	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
N-Nitrosodiphenylamine (Diphenylamine)	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Pentachlorophenol	4.0	U	1	5.0	4.0	2.0	ug/L	08/17/2022 1049
Phenanthrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
Phenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
Pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/17/2022 1049
2,4,5-Trichlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049
2,4,6-Trichlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/17/2022 1049

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		84	44-119
2-Fluorophenol		46	19-119
Nitrobenzene-d5		81	44-120
Phenol-d5		58	10-115
Terphenyl-d14		101	50-134
2,4,6-Tribromophenol		86	43-140

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ50961-002
Batch: 50961
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/12/2022 1750

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acenaphthene	8.0	6.2		1	77	47-122	08/17/2022 1114
Acenaphthylene	8.0	6.8		1	85	41-130	08/17/2022 1114
Acetophenone	8.0	6.7		1	83	46-118	08/17/2022 1114
Anthracene	8.0	6.9		1	87	57-123	08/17/2022 1114
Atrazine	8.0	7.3		1	91	44-142	08/17/2022 1114
Benzaldehyde	8.0	6.2		1	78	20-115	08/17/2022 1114
Benzo(a)anthracene	8.0	7.3		1	91	58-125	08/17/2022 1114
Benzo(a)pyrene	8.0	7.1		1	88	54-128	08/17/2022 1114
Benzo(b)fluoranthene	8.0	7.3		1	91	53-131	08/17/2022 1114
Benzo(g,h,i)perylene	8.0	8.2		1	103	50-134	08/17/2022 1114
Benzo(k)fluoranthene	8.0	7.1		1	89	57-129	08/17/2022 1114
1,1'-Biphenyl	8.0	6.0		1	75	49-115	08/17/2022 1114
4-Bromophenyl phenyl ether	8.0	6.9		1	86	55-124	08/17/2022 1114
Butyl benzyl phthalate	8.0	8.4		1	105	53-134	08/17/2022 1114
Caprolactam	8.0	7.6		1	95	44-152	08/17/2022 1114
Carbazole	8.0	7.5		1	94	60-122	08/17/2022 1114
bis (2-Chloro-1-methylethyl) ether	8.0	7.3		1	91	37-130	08/17/2022 1114
4-Chloro-3-methyl phenol	8.0	6.6		1	83	52-119	08/17/2022 1114
4-Chloroaniline	8.0	6.1		1	77	33-117	08/17/2022 1114
bis(2-Chloroethoxy)methane	8.0	6.2		1	78	48-120	08/17/2022 1114
bis(2-Chloroethyl)ether	8.0	7.0		1	87	43-118	08/17/2022 1114
2-Chloronaphthalene	8.0	6.1		1	76	40-116	08/17/2022 1114
2-Chlorophenol	8.0	6.7		1	84	38-117	08/17/2022 1114
4-Chlorophenyl phenyl ether	8.0	6.7		1	83	53-121	08/17/2022 1114
Chrysene	8.0	6.9		1	87	59-123	08/17/2022 1114
Dibenzo(a,h)anthracene	8.0	7.8		1	97	51-134	08/17/2022 1114
Dibenzofuran	8.0	6.0		1	74	53-118	08/17/2022 1114
3,3'-Dichlorobenzidine	8.0	4.8		1	60	27-129	08/17/2022 1114
2,4-Dichlorophenol	8.0	6.2		1	77	47-121	08/17/2022 1114
Diethylphthalate	8.0	7.2		1	90	56-125	08/17/2022 1114
Dimethyl phthalate	8.0	7.0		1	88	45-127	08/17/2022 1114
2,4-Dimethylphenol	8.0	6.2		1	78	31-124	08/17/2022 1114
Di-n-butyl phthalate	8.0	7.9		1	98	59-127	08/17/2022 1114
4,6-Dinitro-2-methylphenol	8.0	5.3		1	66	44-137	08/17/2022 1114
2,4-Dinitrophenol	16	4.6		1	28	23-143	08/17/2022 1114
2,4-Dinitrotoluene	8.0	6.9		1	86	57-128	08/17/2022 1114
2,6-Dinitrotoluene	8.0	6.5		1	82	57-124	08/17/2022 1114
Di-n-octylphthalate	8.0	7.4		1	92	51-140	08/17/2022 1114
bis(2-Ethylhexyl)phthalate	8.0	9.6		1	119	55-135	08/17/2022 1114
Fluoranthene	8.0	7.3		1	91	57-128	08/17/2022 1114
Fluorene	8.0	6.4		1	80	52-124	08/17/2022 1114
Hexachlorobenzene	8.0	6.5		1	81	53-125	08/17/2022 1114
Hexachlorobutadiene	8.0	5.3		1	66	22-124	08/17/2022 1114
Hexachlorocyclopentadiene	40	20		1	50	16-96	08/17/2022 1114

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LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ50961-002
Batch: 50961
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/12/2022 1750

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Hexachloroethane	8.0	5.5		1	69	21-115	08/17/2022 1114
Indeno(1,2,3-c,d)pyrene	8.0	7.7		1	96	52-134	08/17/2022 1114
Isophorone	8.0	5.9		1	73	42-124	08/17/2022 1114
2-Methylnaphthalene	8.0	6.0		1	75	40-121	08/17/2022 1114
2-Methylphenol	8.0	7.1		1	89	30-117	08/17/2022 1114
3+4-Methylphenol	8.0	7.0		1	88	29-110	08/17/2022 1114
Naphthalene	8.0	6.1		1	77	40-121	08/17/2022 1114
2-Nitroaniline	8.0	7.5		1	93	55-127	08/17/2022 1114
3-Nitroaniline	8.0	5.7		1	71	41-128	08/17/2022 1114
4-Nitroaniline	8.0	6.7		1	83	30-135	08/17/2022 1114
Nitrobenzene	8.0	5.2		1	65	45-121	08/17/2022 1114
2-Nitrophenol	8.0	6.1		1	77	47-123	08/17/2022 1114
4-Nitrophenol	16	14		1	86	53-130	08/17/2022 1114
N-Nitrosodi-n-propylamine	8.0	7.1		1	89	49-119	08/17/2022 1114
N-Nitrosodiphenylamine (Diphenylamine)	8.0	7.8		1	97	51-123	08/17/2022 1114
Pentachlorophenol	16	9.9		1	62	35-138	08/17/2022 1114
Phenanthrene	8.0	6.8		1	84	59-120	08/17/2022 1114
Phenol	8.0	7.1		1	88	49-117	08/17/2022 1114
Pyrene	8.0	7.1		1	89	57-126	08/17/2022 1114
2,4,5-Trichlorophenol	8.0	6.4		1	81	53-123	08/17/2022 1114
2,4,6-Trichlorophenol	8.0	6.7		1	84	50-125	08/17/2022 1114

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		75	44-119
2-Fluorophenol		72	19-119
Nitrobenzene-d5		76	44-120
Phenol-d5		79	10-115
Terphenyl-d14		86	50-134
2,4,6-Tribromophenol		89	43-140

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MS

Sample ID: XH11020-003MS
Batch: 50961
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/12/2022 1750

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acenaphthene	ND	8.0	3.8		1	47	47-122	08/18/2022 1347
Acenaphthylene	ND	8.0	4.1		1	52	41-130	08/18/2022 1347
Acetophenone	ND	8.0	3.8		1	48	46-118	08/18/2022 1347
Anthracene	ND	8.0	4.7		1	59	57-123	08/18/2022 1347
Atrazine	ND	8.0	6.0		1	75	44-142	08/18/2022 1347
Benzaldehyde	ND	8.0	2.9		1	36	20-115	08/18/2022 1347
Benzo(a)anthracene	ND	8.0	6.4		1	79	58-125	08/18/2022 1347
Benzo(a)pyrene	ND	8.0	6.1		1	76	54-128	08/18/2022 1347
Benzo(b)fluoranthene	ND	8.0	6.5		1	82	53-131	08/18/2022 1347
Benzo(g,h,i)perylene	ND	8.0	6.7		1	84	50-134	08/18/2022 1347
Benzo(k)fluoranthene	ND	8.0	6.1		1	77	57-129	08/18/2022 1347
1,1'-Biphenyl	ND	8.0	3.7	N	1	46	49-115	08/18/2022 1347
4-Bromophenyl phenyl ether	ND	8.0	4.3	N	1	54	55-124	08/18/2022 1347
Butyl benzyl phthalate	ND	8.0	7.0		1	87	53-134	08/18/2022 1347
Caprolactam	ND	8.0	5.3		1	66	44-152	08/18/2022 1347
Carbazole	ND	8.0	6.1		1	76	60-122	08/18/2022 1347
bis (2-Chloro-1-methylethyl) ether	ND	8.0	3.5		1	44	37-130	08/18/2022 1347
4-Chloro-3-methyl phenol	ND	8.0	4.2		1	52	52-119	08/18/2022 1347
4-Chloroaniline	ND	8.0	3.2		1	39	33-117	08/18/2022 1347
bis(2-Chloroethoxy)methane	ND	8.0	3.9		1	49	48-120	08/18/2022 1347
bis(2-Chloroethyl)ether	ND	8.0	3.8		1	48	43-118	08/18/2022 1347
2-Chloronaphthalene	ND	8.0	3.8		1	47	40-116	08/18/2022 1347
2-Chlorophenol	ND	8.0	3.8		1	47	38-117	08/18/2022 1347
4-Chlorophenyl phenyl ether	ND	8.0	4.0	N	1	51	53-121	08/18/2022 1347
Chrysene	ND	8.0	6.2		1	77	59-123	08/18/2022 1347
Dibenzo(a,h)anthracene	ND	8.0	6.5		1	81	51-134	08/18/2022 1347
Dibenzofuran	ND	8.0	3.7	N	1	46	53-118	08/18/2022 1347
3,3'-Dichlorobenzidine	ND	8.0	4.2		1	52	27-129	08/18/2022 1347
2,4-Dichlorophenol	ND	8.0	3.8		1	47	47-121	08/18/2022 1347
Diethylphthalate	ND	8.0	4.6		1	57	56-125	08/18/2022 1347
Dimethyl phthalate	ND	8.0	4.2		1	53	45-127	08/18/2022 1347
2,4-Dimethylphenol	ND	8.0	4.3		1	53	31-124	08/18/2022 1347
Di-n-butyl phthalate	ND	8.0	6.3		1	78	59-127	08/18/2022 1347
4,6-Dinitro-2-methylphenol	ND	8.0	4.7		1	59	44-137	08/18/2022 1347
2,4-Dinitrophenol	ND	16	7.8		1	49	23-143	08/18/2022 1347
2,4-Dinitrotoluene	ND	8.0	4.3	N	1	54	57-128	08/18/2022 1347
2,6-Dinitrotoluene	ND	8.0	3.8	N	1	48	57-124	08/18/2022 1347
Di-n-octylphthalate	ND	8.0	6.2		1	77	51-140	08/18/2022 1347
bis(2-Ethylhexyl)phthalate	ND	8.0	7.5		1	94	55-135	08/18/2022 1347
Fluoranthene	ND	8.0	6.0		1	75	57-128	08/18/2022 1347
Fluorene	ND	8.0	3.9	N	1	49	52-124	08/18/2022 1347
Hexachlorobenzene	ND	8.0	4.2		1	53	53-125	08/18/2022 1347
Hexachlorobutadiene	ND	8.0	3.4		1	42	22-124	08/18/2022 1347
Hexachlorocyclopentadiene	ND	40	13		1	33	16-96	08/18/2022 1347

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MS

Sample ID: XH11020-003MS
Batch: 50961
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/12/2022 1750

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Hexachloroethane	ND	8.0	3.4		1	42	21-115	08/18/2022 1347
Indeno(1,2,3-c,d)pyrene	ND	8.0	6.3		1	79	52-134	08/18/2022 1347
Isophorone	ND	8.0	3.6		1	45	42-124	08/18/2022 1347
2-Methylnaphthalene	ND	8.0	3.9		1	49	40-121	08/18/2022 1347
2-Methylphenol	ND	8.0	4.2		1	53	30-117	08/18/2022 1347
3+4-Methylphenol	ND	8.0	3.9		1	49	29-110	08/18/2022 1347
Naphthalene	ND	8.0	3.9		1	49	40-121	08/18/2022 1347
2-Nitroaniline	ND	8.0	4.5		1	56	55-127	08/18/2022 1347
3-Nitroaniline	ND	8.0	3.2	N	1	40	41-128	08/18/2022 1347
4-Nitroaniline	ND	8.0	4.8		1	60	30-135	08/18/2022 1347
Nitrobenzene	ND	8.0	3.3	N	1	41	45-121	08/18/2022 1347
2-Nitrophenol	ND	8.0	3.9		1	49	47-123	08/18/2022 1347
4-Nitrophenol	ND	16	10		1	62	53-130	08/18/2022 1347
N-Nitrosodi-n-propylamine	ND	8.0	4.1		1	51	49-119	08/18/2022 1347
N-Nitrosodiphenylamine (Diphenylamine)	ND	8.0	4.9		1	62	51-123	08/18/2022 1347
Pentachlorophenol	ND	16	11		1	69	35-138	08/18/2022 1347
Phenanthrene	ND	8.0	4.6	N	1	57	59-120	08/18/2022 1347
Phenol	ND	8.0	3.9	N	1	48	49-117	08/18/2022 1347
Pyrene	ND	8.0	6.2		1	78	57-126	08/18/2022 1347
2,4,5-Trichlorophenol	ND	8.0	3.9	N	1	49	53-123	08/18/2022 1347
2,4,6-Trichlorophenol	ND	8.0	4.0	N	1	49	50-125	08/18/2022 1347

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		47	44-119
2-Fluorophenol		40	19-119
Nitrobenzene-d5		48	44-120
Phenol-d5		45	10-115
Terphenyl-d14		82	50-134
2,4,6-Tribromophenol		63	43-140

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MSD

Sample ID: XH11020-003MD
Batch: 50961
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/12/2022 1750

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acenaphthene	ND	8.0	4.3		1	54	13	47-122	20	08/18/2022 1412
Acenaphthylene	ND	8.0	4.7		1	59	13	41-130	20	08/18/2022 1412
Acetophenone	ND	8.0	4.4		1	54	12	46-118	20	08/18/2022 1412
Anthracene	ND	8.0	5.3		1	67	12	57-123	20	08/18/2022 1412
Atrazine	ND	8.0	6.0		1	75	0.68	44-142	20	08/18/2022 1412
Benzaldehyde	ND	8.0	3.5		1	44	18	20-115	20	08/18/2022 1412
Benzo(a)anthracene	ND	8.0	6.7		1	84	5.3	58-125	20	08/18/2022 1412
Benzo(a)pyrene	ND	8.0	6.5		1	82	6.5	54-128	20	08/18/2022 1412
Benzo(b)fluoranthene	ND	8.0	6.9		1	86	5.2	53-131	20	08/18/2022 1412
Benzo(g,h,i)perylene	ND	8.0	7.3		1	91	8.3	50-134	20	08/18/2022 1412
Benzo(k)fluoranthene	ND	8.0	6.7		1	84	8.8	57-129	20	08/18/2022 1412
1,1'-Biphenyl	ND	8.0	4.2		1	53	13	49-115	20	08/18/2022 1412
4-Bromophenyl phenyl ether	ND	8.0	5.0		1	63	15	55-124	20	08/18/2022 1412
Butyl benzyl phthalate	ND	8.0	7.4		1	92	5.4	53-134	20	08/18/2022 1412
Caprolactam	ND	8.0	5.8		1	73	9.9	44-152	20	08/18/2022 1412
Carbazole	ND	8.0	6.1		1	76	0.21	60-122	20	08/18/2022 1412
bis (2-Chloro-1-methylethyl) ether	ND	8.0	3.9		1	49	11	37-130	20	08/18/2022 1412
4-Chloro-3-methyl phenol	ND	8.0	4.9		1	61	16	52-119	20	08/18/2022 1412
4-Chloroaniline	ND	8.0	3.5		1	43	9.4	33-117	20	08/18/2022 1412
bis(2-Chloroethoxy)methane	ND	8.0	4.5		1	56	14	48-120	20	08/18/2022 1412
bis(2-Chloroethyl)ether	ND	8.0	4.3		1	53	12	43-118	20	08/18/2022 1412
2-Chloronaphthalene	ND	8.0	4.3		1	54	13	40-116	20	08/18/2022 1412
2-Chlorophenol	ND	8.0	4.4		1	55	14	38-117	20	08/18/2022 1412
4-Chlorophenyl phenyl ether	ND	8.0	4.7		1	59	16	53-121	20	08/18/2022 1412
Chrysene	ND	8.0	6.5		1	81	5.5	59-123	20	08/18/2022 1412
Dibenzo(a,h)anthracene	ND	8.0	7.0		1	88	7.7	51-134	20	08/18/2022 1412
Dibenzofuran	ND	8.0	4.2	N	1	52	13	53-118	20	08/18/2022 1412
3,3'-Dichlorobenzidine	ND	8.0	4.1		1	51	1.2	27-129	20	08/18/2022 1412
2,4-Dichlorophenol	ND	8.0	4.3		1	54	13	47-121	20	08/18/2022 1412
Diethylphthalate	ND	8.0	5.5		1	69	18	56-125	20	08/18/2022 1412
Dimethyl phthalate	ND	8.0	5.0		1	62	17	45-127	20	08/18/2022 1412
2,4-Dimethylphenol	ND	8.0	4.8		1	60	12	31-124	20	08/18/2022 1412
Di-n-butyl phthalate	ND	8.0	6.9		1	86	9.7	59-127	20	08/18/2022 1412
4,6-Dinitro-2-methylphenol	ND	8.0	5.0		1	62	6.2	44-137	20	08/18/2022 1412
2,4-Dinitrophenol	ND	16	7.6		1	47	3.7	23-143	20	08/18/2022 1412
2,4-Dinitrotoluene	ND	8.0	5.0		1	63	16	57-128	20	08/18/2022 1412
2,6-Dinitrotoluene	ND	8.0	4.7		1	58	19	57-124	20	08/18/2022 1412
Di-n-octylphthalate	ND	8.0	6.7		1	84	8.7	51-140	20	08/18/2022 1412
bis(2-Ethylhexyl)phthalate	ND	8.0	7.9		1	99	4.9	55-135	20	08/18/2022 1412
Fluoranthene	ND	8.0	6.5		1	81	8.2	57-128	20	08/18/2022 1412
Fluorene	ND	8.0	4.5		1	57	14	52-124	20	08/18/2022 1412
Hexachlorobenzene	ND	8.0	4.9		1	61	15	53-125	20	08/18/2022 1412
Hexachlorobutadiene	ND	8.0	4.0		1	50	16	22-124	20	08/18/2022 1412
Hexachlorocyclopentadiene	ND	40	14		1	36	10	16-96	20	08/18/2022 1412

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MSD

Sample ID: XH11020-003MD
Batch: 50961
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/12/2022 1750

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Hexachloroethane	ND	8.0	3.9		1	49	14	21-115	20	08/18/2022 1412
Indeno(1,2,3-c,d)pyrene	ND	8.0	6.9		1	86	8.3	52-134	20	08/18/2022 1412
Isophorone	ND	8.0	4.0		1	50	12	42-124	20	08/18/2022 1412
2-Methylnaphthalene	ND	8.0	4.4		1	56	12	40-121	20	08/18/2022 1412
2-Methylphenol	ND	8.0	4.8		1	60	12	30-117	20	08/18/2022 1412
3+4-Methylphenol	ND	8.0	4.3		1	54	10	29-110	20	08/18/2022 1412
Naphthalene	ND	8.0	4.4		1	55	12	40-121	20	08/18/2022 1412
2-Nitroaniline	ND	8.0	4.9		1	61	8.2	55-127	20	08/18/2022 1412
3-Nitroaniline	ND	8.0	3.6		1	44	10	41-128	20	08/18/2022 1412
4-Nitroaniline	ND	8.0	4.8		1	60	0.90	30-135	20	08/18/2022 1412
Nitrobenzene	ND	8.0	3.7		1	46	13	45-121	20	08/18/2022 1412
2-Nitrophenol	ND	8.0	4.4		1	55	12	47-123	20	08/18/2022 1412
4-Nitrophenol	ND	16	11		1	67	7.3	53-130	20	08/18/2022 1412
N-Nitrosodi-n-propylamine	ND	8.0	4.5		1	57	11	49-119	20	08/18/2022 1412
N-Nitrosodiphenylamine (Diphenylamine)	ND	8.0	5.6		1	70	13	51-123	20	08/18/2022 1412
Pentachlorophenol	ND	16	11		1	72	3.5	35-138	20	08/18/2022 1412
Phenanthrene	ND	8.0	5.2		1	65	13	59-120	20	08/18/2022 1412
Phenol	ND	8.0	4.4		1	54	12	49-117	40	08/18/2022 1412
Pyrene	ND	8.0	6.5		1	82	5.0	57-126	20	08/18/2022 1412
2,4,5-Trichlorophenol	ND	8.0	4.7		1	58	17	53-123	20	08/18/2022 1412
2,4,6-Trichlorophenol	ND	8.0	4.7		1	58	17	50-125	20	08/18/2022 1412

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		51	44-119
2-Fluorophenol		41	19-119
Nitrobenzene-d5		52	44-120
Phenol-d5		47	10-115
Terphenyl-d14		79	50-134
2,4,6-Tribromophenol		66	43-140

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MS

Sample ID: XH11020-004MS
Batch: 50961
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/12/2022 1750

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acenaphthene	ND	8.0	4.7		1	59	47-122	08/18/2022 1501
Acenaphthylene	ND	8.0	5.2		1	65	41-130	08/18/2022 1501
Acetophenone	ND	8.0	4.8		1	60	46-118	08/18/2022 1501
Anthracene	0.090	8.0	5.9		1	73	57-123	08/18/2022 1501
Atrazine	ND	8.0	5.7		1	71	44-142	08/18/2022 1501
Benzaldehyde	ND	8.0	3.8		1	47	20-115	08/18/2022 1501
Benzo(a)anthracene	ND	8.0	6.4		1	80	58-125	08/18/2022 1501
Benzo(a)pyrene	ND	8.0	6.2		1	78	54-128	08/18/2022 1501
Benzo(b)fluoranthene	ND	8.0	6.3		1	79	53-131	08/18/2022 1501
Benzo(g,h,i)perylene	ND	8.0	6.7		1	84	50-134	08/18/2022 1501
Benzo(k)fluoranthene	ND	8.0	6.4		1	80	57-129	08/18/2022 1501
1,1'-Biphenyl	ND	8.0	4.6		1	58	49-115	08/18/2022 1501
4-Bromophenyl phenyl ether	ND	8.0	5.6		1	70	55-124	08/18/2022 1501
Butyl benzyl phthalate	ND	8.0	7.2		1	90	53-134	08/18/2022 1501
Caprolactam	ND	8.0	6.4		1	81	44-152	08/18/2022 1501
Carbazole	ND	8.0	6.6		1	82	60-122	08/18/2022 1501
bis (2-Chloro-1-methylethyl) ether	ND	8.0	4.5		1	56	37-130	08/18/2022 1501
4-Chloro-3-methyl phenol	ND	8.0	5.2		1	65	52-119	08/18/2022 1501
4-Chloroaniline	ND	8.0	2.9		1	36	33-117	08/18/2022 1501
bis(2-Chloroethoxy)methane	ND	8.0	4.8		1	60	48-120	08/18/2022 1501
bis(2-Chloroethyl)ether	ND	8.0	4.7		1	59	43-118	08/18/2022 1501
2-Chloronaphthalene	ND	8.0	4.7		1	59	40-116	08/18/2022 1501
2-Chlorophenol	ND	8.0	4.7		1	59	38-117	08/18/2022 1501
4-Chlorophenyl phenyl ether	ND	8.0	5.3		1	66	53-121	08/18/2022 1501
Chrysene	ND	8.0	6.2		1	77	59-123	08/18/2022 1501
Dibenzo(a,h)anthracene	ND	8.0	6.5		1	82	51-134	08/18/2022 1501
Dibenzofuran	ND	8.0	4.7		1	59	53-118	08/18/2022 1501
3,3'-Dichlorobenzidine	ND	8.0	0.50	N	1	6.2	27-129	08/18/2022 1501
2,4-Dichlorophenol	ND	8.0	4.6		1	57	47-121	08/18/2022 1501
Diethylphthalate	ND	8.0	5.9		1	74	56-125	08/18/2022 1501
Dimethyl phthalate	ND	8.0	5.7		1	71	45-127	08/18/2022 1501
2,4-Dimethylphenol	ND	8.0	6.8		1	85	31-124	08/18/2022 1501
Di-n-butyl phthalate	ND	8.0	7.0		1	88	59-127	08/18/2022 1501
4,6-Dinitro-2-methylphenol	ND	8.0	5.1		1	63	44-137	08/18/2022 1501
2,4-Dinitrophenol	ND	16	9.1		1	57	23-143	08/18/2022 1501
2,4-Dinitrotoluene	ND	8.0	5.5		1	69	57-128	08/18/2022 1501
2,6-Dinitrotoluene	ND	8.0	5.2		1	66	57-124	08/18/2022 1501
Di-n-octylphthalate	ND	8.0	6.1		1	76	51-140	08/18/2022 1501
bis(2-Ethylhexyl)phthalate	ND	8.0	7.5		1	94	55-135	08/18/2022 1501
Fluoranthene	ND	8.0	6.3		1	79	57-128	08/18/2022 1501
Fluorene	ND	8.0	5.2		1	65	52-124	08/18/2022 1501
Hexachlorobenzene	ND	8.0	5.3		1	66	53-125	08/18/2022 1501
Hexachlorobutadiene	ND	8.0	4.2		1	53	22-124	08/18/2022 1501
Hexachlorocyclopentadiene	ND	40	16		1	39	16-96	08/18/2022 1501

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MS

Sample ID: XH11020-004MS
Batch: 50961
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/12/2022 1750

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Hexachloroethane	ND	8.0	4.3		1	54	21-115	08/18/2022 1501
Indeno(1,2,3-c,d)pyrene	ND	8.0	6.4		1	80	52-134	08/18/2022 1501
Isophorone	ND	8.0	4.4		1	55	42-124	08/18/2022 1501
2-Methylnaphthalene	ND	8.0	4.8		1	60	40-121	08/18/2022 1501
2-Methylphenol	ND	8.0	5.3		1	66	30-117	08/18/2022 1501
3+4-Methylphenol	ND	8.0	4.8		1	60	29-110	08/18/2022 1501
Naphthalene	ND	8.0	4.8		1	60	40-121	08/18/2022 1501
2-Nitroaniline	ND	8.0	5.9		1	74	55-127	08/18/2022 1501
3-Nitroaniline	ND	8.0	2.7	N	1	34	41-128	08/18/2022 1501
4-Nitroaniline	ND	8.0	4.8		1	60	30-135	08/18/2022 1501
Nitrobenzene	ND	8.0	4.0		1	49	45-121	08/18/2022 1501
2-Nitrophenol	ND	8.0	4.8		1	60	47-123	08/18/2022 1501
4-Nitrophenol	ND	16	11		1	68	53-130	08/18/2022 1501
N-Nitrosodi-n-propylamine	ND	8.0	5.1		1	63	49-119	08/18/2022 1501
N-Nitrosodiphenylamine (Diphenylamine)	ND	8.0	5.4		1	67	51-123	08/18/2022 1501
Pentachlorophenol	ND	16	13		1	81	35-138	08/18/2022 1501
Phenanthrene	ND	8.0	5.7		1	71	59-120	08/18/2022 1501
Phenol	ND	8.0	4.6		1	57	49-117	08/18/2022 1501
Pyrene	ND	8.0	6.5		1	81	57-126	08/18/2022 1501
2,4,5-Trichlorophenol	ND	8.0	5.1		1	64	53-123	08/18/2022 1501
2,4,6-Trichlorophenol	ND	8.0	5.1		1	64	50-125	08/18/2022 1501

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		56	44-119
2-Fluorophenol		48	19-119
Nitrobenzene-d5		56	44-120
Phenol-d5		52	10-115
Terphenyl-d14		75	50-134
2,4,6-Tribromophenol		75	43-140

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MSD

Sample ID: XH11020-004MD
Batch: 50961
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/12/2022 1750

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acenaphthene	ND	8.0	5.9	+	1	74	22	47-122	20	08/18/2022 1526
Acenaphthylene	ND	8.0	6.5	+	1	82	22	41-130	20	08/18/2022 1526
Acetophenone	ND	8.0	5.8		1	73	20	46-118	20	08/18/2022 1526
Anthracene	0.090	8.0	7.1		1	88	18	57-123	20	08/18/2022 1526
Atrazine	ND	8.0	6.4		1	80	11	44-142	20	08/18/2022 1526
Benzaldehyde	ND	8.0	4.2		1	52	10	20-115	20	08/18/2022 1526
Benzo(a)anthracene	ND	8.0	7.5		1	94	17	58-125	20	08/18/2022 1526
Benzo(a)pyrene	ND	8.0	7.4		1	93	18	54-128	20	08/18/2022 1526
Benzo(b)fluoranthene	ND	8.0	7.7		1	97	20	53-131	20	08/18/2022 1526
Benzo(g,h,i)perylene	ND	8.0	7.7		1	97	14	50-134	20	08/18/2022 1526
Benzo(k)fluoranthene	ND	8.0	7.2		1	90	12	57-129	20	08/18/2022 1526
1,1'-Biphenyl	ND	8.0	5.8	+	1	73	23	49-115	20	08/18/2022 1526
4-Bromophenyl phenyl ether	ND	8.0	6.9	+	1	87	21	55-124	20	08/18/2022 1526
Butyl benzyl phthalate	ND	8.0	8.6		1	108	18	53-134	20	08/18/2022 1526
Caprolactam	ND	8.0	8.1	+	1	101	23	44-152	20	08/18/2022 1526
Carbazole	ND	8.0	7.6		1	95	14	60-122	20	08/18/2022 1526
bis (2-Chloro-1-methylethyl) ether	ND	8.0	5.2		1	65	15	37-130	20	08/18/2022 1526
4-Chloro-3-methyl phenol	ND	8.0	6.5	+	1	81	22	52-119	20	08/18/2022 1526
4-Chloroaniline	ND	8.0	2.7		1	33	8.5	33-117	20	08/18/2022 1526
bis(2-Chloroethoxy)methane	ND	8.0	6.0	+	1	76	23	48-120	20	08/18/2022 1526
bis(2-Chloroethyl)ether	ND	8.0	5.6		1	70	17	43-118	20	08/18/2022 1526
2-Chloronaphthalene	ND	8.0	6.0	+	1	75	23	40-116	20	08/18/2022 1526
2-Chlorophenol	ND	8.0	5.9	+	1	73	21	38-117	20	08/18/2022 1526
4-Chlorophenyl phenyl ether	ND	8.0	6.6	+	1	83	22	53-121	20	08/18/2022 1526
Chrysene	ND	8.0	7.3		1	91	16	59-123	20	08/18/2022 1526
Dibenzo(a,h)anthracene	ND	8.0	7.7		1	96	16	51-134	20	08/18/2022 1526
Dibenzofuran	ND	8.0	5.9	+	1	73	22	53-118	20	08/18/2022 1526
3,3'-Dichlorobenzidine	ND	8.0	0.50	N	1	6.3	1.3	27-129	20	08/18/2022 1526
2,4-Dichlorophenol	ND	8.0	6.1	+	1	76	28	47-121	20	08/18/2022 1526
Diethylphthalate	ND	8.0	7.3	+	1	91	21	56-125	20	08/18/2022 1526
Dimethyl phthalate	ND	8.0	7.1	+	1	89	22	45-127	20	08/18/2022 1526
2,4-Dimethylphenol	ND	8.0	9.0	+	1	113	28	31-124	20	08/18/2022 1526
Di-n-butyl phthalate	ND	8.0	8.3		1	104	17	59-127	20	08/18/2022 1526
4,6-Dinitro-2-methylphenol	ND	8.0	5.8		1	72	13	44-137	20	08/18/2022 1526
2,4-Dinitrophenol	ND	16	11		1	67	15	23-143	20	08/18/2022 1526
2,4-Dinitrotoluene	ND	8.0	6.9	+	1	86	22	57-128	20	08/18/2022 1526
2,6-Dinitrotoluene	ND	8.0	6.5	+	1	82	22	57-124	20	08/18/2022 1526
Di-n-octylphthalate	ND	8.0	7.4		1	92	19	51-140	20	08/18/2022 1526
bis(2-Ethylhexyl)phthalate	ND	8.0	9.2		1	115	20	55-135	20	08/18/2022 1526
Fluoranthene	ND	8.0	7.3		1	91	14	57-128	20	08/18/2022 1526
Fluorene	ND	8.0	6.4	+	1	80	21	52-124	20	08/18/2022 1526
Hexachlorobenzene	ND	8.0	6.6	+	1	83	23	53-125	20	08/18/2022 1526
Hexachlorobutadiene	ND	8.0	5.2		1	65	20	22-124	20	08/18/2022 1526
Hexachlorocyclopentadiene	ND	40	19		1	47	19	16-96	20	08/18/2022 1526

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MSD

Sample ID: XH11020-004MD
Batch: 50961
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/12/2022 1750

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Hexachloroethane	ND	8.0	5.3	+	1	67	21	21-115	20	08/18/2022 1526
Indeno(1,2,3-c,d)pyrene	ND	8.0	7.4		1	93	15	52-134	20	08/18/2022 1526
Isophorone	ND	8.0	5.6	+	1	71	26	42-124	20	08/18/2022 1526
2-Methylnaphthalene	ND	8.0	5.9	+	1	74	21	40-121	20	08/18/2022 1526
2-Methylphenol	ND	8.0	6.3		1	79	18	30-117	20	08/18/2022 1526
3+4-Methylphenol	ND	8.0	6.1	+	1	76	23	29-110	20	08/18/2022 1526
Naphthalene	ND	8.0	5.8		1	73	20	40-121	20	08/18/2022 1526
2-Nitroaniline	ND	8.0	7.6	+	1	95	25	55-127	20	08/18/2022 1526
3-Nitroaniline	ND	8.0	3.4		1	42	20	41-128	20	08/18/2022 1526
4-Nitroaniline	ND	8.0	6.3	+	1	79	27	30-135	20	08/18/2022 1526
Nitrobenzene	ND	8.0	4.9	+	1	61	21	45-121	20	08/18/2022 1526
2-Nitrophenol	ND	8.0	6.0	+	1	75	23	47-123	20	08/18/2022 1526
4-Nitrophenol	ND	16	14	+	1	86	23	53-130	20	08/18/2022 1526
N-Nitrosodi-n-propylamine	ND	8.0	6.2		1	77	20	49-119	20	08/18/2022 1526
N-Nitrosodiphenylamine (Diphenylamine)	ND	8.0	6.6	+	1	83	21	51-123	20	08/18/2022 1526
Pentachlorophenol	ND	16	15		1	96	17	35-138	20	08/18/2022 1526
Phenanthrene	ND	8.0	6.8		1	85	17	59-120	20	08/18/2022 1526
Phenol	ND	8.0	5.8		1	72	23	49-117	40	08/18/2022 1526
Pyrene	ND	8.0	7.5		1	93	14	57-126	20	08/18/2022 1526
2,4,5-Trichlorophenol	ND	8.0	6.4	+	1	80	23	53-123	20	08/18/2022 1526
2,4,6-Trichlorophenol	ND	8.0	6.5	+	1	81	24	50-125	20	08/18/2022 1526

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		70	44-119
2-Fluorophenol		62	19-119
Nitrobenzene-d5		68	44-120
Phenol-d5		64	10-115
Terphenyl-d14		86	50-134
2,4,6-Tribromophenol		89	43-140

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ51409-001
Batch: 51409
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/17/2022 1500

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acenaphthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
Acenaphthylene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
Acetophenone	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
Anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
Atrazine	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
Benzaldehyde	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
Benzo(a)anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
Benzo(a)pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
Benzo(b)fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
Benzo(g,h,i)perylene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
Benzo(k)fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
1,1'-Biphenyl	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
4-Bromophenyl phenyl ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
Butyl benzyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
Caprolactam	2.0	U	1	3.0	2.0	1.0	ug/L	08/19/2022 0012
Carbazole	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
bis (2-Chloro-1-methylethyl) ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
4-Chloro-3-methyl phenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
4-Chloroaniline	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
bis(2-Chloroethoxy)methane	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
bis(2-Chloroethyl)ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
2-Chloronaphthalene	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
2-Chlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
4-Chlorophenyl phenyl ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
Chrysene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
Dibenzo(a,h)anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
Dibenzofuran	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
3,3'-Dichlorobenzidine	3.5	U	1	4.0	3.5	1.8	ug/L	08/19/2022 0012
2,4-Dichlorophenol	0.50	U	1	1.6	0.50	0.25	ug/L	08/19/2022 0012
Diethylphthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
Dimethyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
2,4-Dimethylphenol	1.5	U	1	2.0	1.5	0.62	ug/L	08/19/2022 0012
Di-n-butyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
4,6-Dinitro-2-methylphenol	2.0	U	1	4.0	2.0	1.0	ug/L	08/19/2022 0012
2,4-Dinitrophenol	2.0	U	1	4.0	2.0	1.0	ug/L	08/19/2022 0012
2,4-Dinitrotoluene	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
2,6-Dinitrotoluene	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
Di-n-octylphthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
bis(2-Ethylhexyl)phthalate	3.0	U	1	4.0	3.0	1.5	ug/L	08/19/2022 0012
Fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
Fluorene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
Hexachlorobenzene	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
Hexachlorobutadiene	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
Hexachlorocyclopentadiene	4.0	U	1	4.0	4.0	2.0	ug/L	08/19/2022 0012

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ51409-001
Batch: 51409
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/17/2022 1500

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Hexachloroethane	0.40	U	1	0.80	0.40	0.17	ug/L	08/19/2022 0012
Indeno(1,2,3-c,d)pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
Isophorone	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
2-Methylnaphthalene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
2-Methylphenol	1.3	U	1	1.6	1.3	0.67	ug/L	08/19/2022 0012
3+4-Methylphenol	3.0	U	1	4.0	3.0	1.5	ug/L	08/19/2022 0012
Naphthalene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
2-Nitroaniline	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
3-Nitroaniline	2.0	U	1	3.0	2.0	1.0	ug/L	08/19/2022 0012
4-Nitroaniline	3.0	U	1	4.0	3.0	1.5	ug/L	08/19/2022 0012
Nitrobenzene	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
2-Nitrophenol	2.0	U	1	3.2	2.0	1.0	ug/L	08/19/2022 0012
4-Nitrophenol	4.0	U	1	5.0	4.0	2.0	ug/L	08/19/2022 0012
N-Nitrosodi-n-propylamine	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
N-Nitrosodiphenylamine (Diphenylamine)	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
Pentachlorophenol	4.0	U	1	5.0	4.0	2.0	ug/L	08/19/2022 0012
Phenanthrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
Phenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
Pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/19/2022 0012
2,4,5-Trichlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012
2,4,6-Trichlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/19/2022 0012

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		76	44-119
2-Fluorophenol		49	19-119
Nitrobenzene-d5		72	44-120
Phenol-d5		61	10-115
Terphenyl-d14		91	50-134
2,4,6-Tribromophenol		81	43-140

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51409-002
Batch: 51409
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/17/2022 1500

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acenaphthene	8.0	6.2		1	78	47-122	08/19/2022 0036
Acenaphthylene	8.0	7.0		1	87	41-130	08/19/2022 0036
Acetophenone	8.0	6.3		1	79	46-118	08/19/2022 0036
Anthracene	8.0	6.8		1	85	57-123	08/19/2022 0036
Atrazine	8.0	7.1		1	89	44-142	08/19/2022 0036
Benzaldehyde	8.0	6.1		1	76	20-115	08/19/2022 0036
Benzo(a)anthracene	8.0	6.9		1	86	58-125	08/19/2022 0036
Benzo(a)pyrene	8.0	6.8		1	85	54-128	08/19/2022 0036
Benzo(b)fluoranthene	8.0	7.1		1	89	53-131	08/19/2022 0036
Benzo(g,h,i)perylene	8.0	7.1		1	89	50-134	08/19/2022 0036
Benzo(k)fluoranthene	8.0	7.0		1	88	57-129	08/19/2022 0036
1,1'-Biphenyl	8.0	6.1		1	77	49-115	08/19/2022 0036
4-Bromophenyl phenyl ether	8.0	6.9		1	86	55-124	08/19/2022 0036
Butyl benzyl phthalate	8.0	7.9		1	98	53-134	08/19/2022 0036
Caprolactam	8.0	7.9		1	99	44-152	08/19/2022 0036
Carbazole	8.0	6.8		1	85	60-122	08/19/2022 0036
bis (2-Chloro-1-methylethyl) ether	8.0	5.9		1	74	37-130	08/19/2022 0036
4-Chloro-3-methyl phenol	8.0	6.7		1	84	52-119	08/19/2022 0036
4-Chloroaniline	8.0	6.4		1	80	33-117	08/19/2022 0036
bis(2-Chloroethoxy)methane	8.0	6.8		1	85	48-120	08/19/2022 0036
bis(2-Chloroethyl)ether	8.0	6.5		1	81	43-118	08/19/2022 0036
2-Chloronaphthalene	8.0	6.2		1	78	40-116	08/19/2022 0036
2-Chlorophenol	8.0	6.6		1	82	38-117	08/19/2022 0036
4-Chlorophenyl phenyl ether	8.0	6.7		1	84	53-121	08/19/2022 0036
Chrysene	8.0	6.7		1	84	59-123	08/19/2022 0036
Dibenzo(a,h)anthracene	8.0	6.9		1	86	51-134	08/19/2022 0036
Dibenzofuran	8.0	6.1		1	77	53-118	08/19/2022 0036
3,3'-Dichlorobenzidine	8.0	3.4		1	43	27-129	08/19/2022 0036
2,4-Dichlorophenol	8.0	6.5		1	81	47-121	08/19/2022 0036
Diethylphthalate	8.0	7.1		1	89	56-125	08/19/2022 0036
Dimethyl phthalate	8.0	7.2		1	90	45-127	08/19/2022 0036
2,4-Dimethylphenol	8.0	7.6		1	94	31-124	08/19/2022 0036
Di-n-butyl phthalate	8.0	7.6		1	95	59-127	08/19/2022 0036
4,6-Dinitro-2-methylphenol	8.0	5.2		1	65	44-137	08/19/2022 0036
2,4-Dinitrophenol	16	6.1		1	38	23-143	08/19/2022 0036
2,4-Dinitrotoluene	8.0	6.7		1	84	57-128	08/19/2022 0036
2,6-Dinitrotoluene	8.0	6.5		1	82	57-124	08/19/2022 0036
Di-n-octylphthalate	8.0	6.9		1	86	51-140	08/19/2022 0036
bis(2-Ethylhexyl)phthalate	8.0	8.1		1	101	55-135	08/19/2022 0036
Fluoranthene	8.0	7.1		1	89	57-128	08/19/2022 0036
Fluorene	8.0	6.6		1	82	52-124	08/19/2022 0036
Hexachlorobenzene	8.0	6.5		1	82	53-125	08/19/2022 0036
Hexachlorobutadiene	8.0	5.6		1	71	22-124	08/19/2022 0036
Hexachlorocyclopentadiene	40	19		1	47	16-96	08/19/2022 0036

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51409-002
Batch: 51409
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/17/2022 1500

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Hexachloroethane	8.0	5.8		1	73	21-115	08/19/2022 0036
Indeno(1,2,3-c,d)pyrene	8.0	6.7		1	84	52-134	08/19/2022 0036
Isophorone	8.0	6.4		1	80	42-124	08/19/2022 0036
2-Methylnaphthalene	8.0	6.5		1	81	40-121	08/19/2022 0036
2-Methylphenol	8.0	7.2		1	90	30-117	08/19/2022 0036
3+4-Methylphenol	8.0	6.6		1	83	29-110	08/19/2022 0036
Naphthalene	8.0	6.5		1	81	40-121	08/19/2022 0036
2-Nitroaniline	8.0	7.5		1	94	55-127	08/19/2022 0036
3-Nitroaniline	8.0	5.3		1	66	41-128	08/19/2022 0036
4-Nitroaniline	8.0	6.7		1	84	30-135	08/19/2022 0036
Nitrobenzene	8.0	5.5		1	69	45-121	08/19/2022 0036
2-Nitrophenol	8.0	6.6		1	82	47-123	08/19/2022 0036
4-Nitrophenol	16	11		1	70	53-130	08/19/2022 0036
N-Nitrosodi-n-propylamine	8.0	6.9		1	87	49-119	08/19/2022 0036
N-Nitrosodiphenylamine (Diphenylamine)	8.0	7.2		1	90	51-123	08/19/2022 0036
Pentachlorophenol	16	9.0		1	56	35-138	08/19/2022 0036
Phenanthrene	8.0	6.6		1	83	59-120	08/19/2022 0036
Phenol	8.0	6.6		1	83	49-117	08/19/2022 0036
Pyrene	8.0	7.3		1	92	57-126	08/19/2022 0036
2,4,5-Trichlorophenol	8.0	6.2		1	78	53-123	08/19/2022 0036
2,4,6-Trichlorophenol	8.0	6.6		1	82	50-125	08/19/2022 0036

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		80	44-119
2-Fluorophenol		77	19-119
Nitrobenzene-d5		82	44-120
Phenol-d5		79	10-115
Terphenyl-d14		93	50-134
2,4,6-Tribromophenol		87	43-140

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MS

Sample ID: XH11020-018MS
Batch: 51409
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/17/2022 1500

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acenaphthene	ND	16	13		1	80	47-122	08/19/2022 0619
Acenaphthylene	ND	16	14		1	89	41-130	08/19/2022 0619
Acetophenone	ND	16	13		1	82	46-118	08/19/2022 0619
Anthracene	ND	16	14		1	87	57-123	08/19/2022 0619
Atrazine	ND	16	15		1	94	44-142	08/19/2022 0619
Benzaldehyde	0.76	16	14		1	85	20-115	08/19/2022 0619
Benzo(a)anthracene	ND	16	14		1	89	58-125	08/19/2022 0619
Benzo(a)pyrene	ND	16	14		1	85	54-128	08/19/2022 0619
Benzo(b)fluoranthene	ND	16	15		1	92	53-131	08/19/2022 0619
Benzo(g,h,i)perylene	ND	16	16		1	98	50-134	08/19/2022 0619
Benzo(k)fluoranthene	ND	16	14		1	91	57-129	08/19/2022 0619
1,1'-Biphenyl	ND	16	13		1	80	49-115	08/19/2022 0619
4-Bromophenyl phenyl ether	ND	16	14		1	88	55-124	08/19/2022 0619
Butyl benzyl phthalate	ND	16	16		1	101	53-134	08/19/2022 0619
Caprolactam	3.1	16	21		1	110	44-152	08/19/2022 0619
Carbazole	ND	16	14		1	90	60-122	08/19/2022 0619
bis (2-Chloro-1-methylethyl) ether	ND	16	13		1	79	37-130	08/19/2022 0619
4-Chloro-3-methyl phenol	ND	16	14		1	85	52-119	08/19/2022 0619
4-Chloroaniline	ND	16	9.9		1	62	33-117	08/19/2022 0619
bis(2-Chloroethoxy)methane	ND	16	14		1	87	48-120	08/19/2022 0619
bis(2-Chloroethyl)ether	ND	16	14		1	86	43-118	08/19/2022 0619
2-Chloronaphthalene	ND	16	13		1	81	40-116	08/19/2022 0619
2-Chlorophenol	ND	16	14		1	85	38-117	08/19/2022 0619
4-Chlorophenyl phenyl ether	ND	16	14		1	86	53-121	08/19/2022 0619
Chrysene	ND	16	14		1	87	59-123	08/19/2022 0619
Dibenzo(a,h)anthracene	ND	16	15		1	93	51-134	08/19/2022 0619
Dibenzofuran	ND	16	13		1	78	53-118	08/19/2022 0619
3,3'-Dichlorobenzidine	ND	16	5.0		1	31	27-129	08/19/2022 0619
2,4-Dichlorophenol	ND	16	13		1	82	47-121	08/19/2022 0619
Diethylphthalate	ND	16	15		1	93	56-125	08/19/2022 0619
Dimethyl phthalate	ND	16	15		1	92	45-127	08/19/2022 0619
2,4-Dimethylphenol	ND	16	18		1	114	31-124	08/19/2022 0619
Di-n-butyl phthalate	ND	16	16		1	99	59-127	08/19/2022 0619
4,6-Dinitro-2-methylphenol	ND	16	8.9		1	56	44-137	08/19/2022 0619
2,4-Dinitrophenol	ND	32	11		1	34	23-143	08/19/2022 0619
2,4-Dinitrotoluene	ND	16	14		1	88	57-128	08/19/2022 0619
2,6-Dinitrotoluene	ND	16	14		1	85	57-124	08/19/2022 0619
Di-n-octylphthalate	ND	16	14		1	86	51-140	08/19/2022 0619
bis(2-Ethylhexyl)phthalate	ND	16	16		1	101	55-135	08/19/2022 0619
Fluoranthene	ND	16	15		1	91	57-128	08/19/2022 0619
Fluorene	ND	16	14		1	85	52-124	08/19/2022 0619
Hexachlorobenzene	ND	16	13		1	84	53-125	08/19/2022 0619
Hexachlorobutadiene	ND	16	12		1	72	22-124	08/19/2022 0619
Hexachlorocyclopentadiene	ND	80	38		1	47	16-96	08/19/2022 0619

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MS

Sample ID: XH11020-018MS
Batch: 51409
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/17/2022 1500

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Hexachloroethane	ND	16	12		1	76	21-115	08/19/2022 0619
Indeno(1,2,3-c,d)pyrene	ND	16	14		1	91	52-134	08/19/2022 0619
Isophorone	ND	16	13		1	81	42-124	08/19/2022 0619
2-Methylnaphthalene	ND	16	13		1	83	40-121	08/19/2022 0619
2-Methylphenol	ND	16	19	N	1	120	30-117	08/19/2022 0619
3+4-Methylphenol	ND	16	15		1	93	29-110	08/19/2022 0619
Naphthalene	ND	16	13		1	83	40-121	08/19/2022 0619
2-Nitroaniline	ND	16	15		1	95	55-127	08/19/2022 0619
3-Nitroaniline	ND	16	8.8		1	55	41-128	08/19/2022 0619
4-Nitroaniline	ND	16	12		1	75	30-135	08/19/2022 0619
Nitrobenzene	ND	16	11		1	70	45-121	08/19/2022 0619
2-Nitrophenol	ND	16	14		1	84	47-123	08/19/2022 0619
4-Nitrophenol	ND	32	23		1	72	53-130	08/19/2022 0619
N-Nitrosodi-n-propylamine	ND	16	14		1	89	49-119	08/19/2022 0619
N-Nitrosodiphenylamine (Diphenylamine)	ND	16	15		1	95	51-123	08/19/2022 0619
Pentachlorophenol	ND	32	23		1	73	35-138	08/19/2022 0619
Phenanthrene	ND	16	14		1	85	59-120	08/19/2022 0619
Phenol	ND	16	14		1	88	49-117	08/19/2022 0619
Pyrene	ND	16	15		1	92	57-126	08/19/2022 0619
2,4,5-Trichlorophenol	ND	16	12		1	78	53-123	08/19/2022 0619
2,4,6-Trichlorophenol	ND	16	13		1	83	50-125	08/19/2022 0619

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		85	44-119
2-Fluorophenol		83	19-119
Nitrobenzene-d5		85	44-120
Phenol-d5		85	10-115
Terphenyl-d14		97	50-134
2,4,6-Tribromophenol		92	43-140

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MSD

Sample ID: XH11020-018MD
Batch: 51409
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/17/2022 1500

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acenaphthene	ND	16	13		1	79	1.5	47-122	20	08/19/2022 0643
Acenaphthylene	ND	16	14		1	88	0.70	41-130	20	08/19/2022 0643
Acetophenone	ND	16	13		1	83	1.8	46-118	20	08/19/2022 0643
Anthracene	ND	16	14		1	88	1.1	57-123	20	08/19/2022 0643
Atrazine	ND	16	15		1	93	1.3	44-142	20	08/19/2022 0643
Benzaldehyde	0.76	16	14		1	83	1.9	20-115	20	08/19/2022 0643
Benzo(a)anthracene	ND	16	15		1	91	2.5	58-125	20	08/19/2022 0643
Benzo(a)pyrene	ND	16	14		1	90	5.1	54-128	20	08/19/2022 0643
Benzo(b)fluoranthene	ND	16	15		1	94	2.0	53-131	20	08/19/2022 0643
Benzo(g,h,i)perylene	ND	16	16		1	102	3.7	50-134	20	08/19/2022 0643
Benzo(k)fluoranthene	ND	16	15		1	92	1.0	57-129	20	08/19/2022 0643
1,1'-Biphenyl	ND	16	13		1	79	1.1	49-115	20	08/19/2022 0643
4-Bromophenyl phenyl ether	ND	16	14		1	88	0.77	55-124	20	08/19/2022 0643
Butyl benzyl phthalate	ND	16	16		1	102	0.66	53-134	20	08/19/2022 0643
Caprolactam	3.1	16	19		1	101	7.1	44-152	20	08/19/2022 0643
Carbazole	ND	16	15		1	92	2.3	60-122	20	08/19/2022 0643
bis (2-Chloro-1-methylethyl) ether	ND	16	13		1	79	0.19	37-130	20	08/19/2022 0643
4-Chloro-3-methyl phenol	ND	16	13		1	82	3.8	52-119	20	08/19/2022 0643
4-Chloroaniline	ND	16	9.8		1	61	0.83	33-117	20	08/19/2022 0643
bis(2-Chloroethoxy)methane	ND	16	14		1	85	3.2	48-120	20	08/19/2022 0643
bis(2-Chloroethyl)ether	ND	16	14		1	85	1.1	43-118	20	08/19/2022 0643
2-Chloronaphthalene	ND	16	13		1	80	0.46	40-116	20	08/19/2022 0643
2-Chlorophenol	ND	16	13		1	83	2.4	38-117	20	08/19/2022 0643
4-Chlorophenyl phenyl ether	ND	16	14		1	86	0.36	53-121	20	08/19/2022 0643
Chrysene	ND	16	14		1	87	0.070	59-123	20	08/19/2022 0643
Dibenzo(a,h)anthracene	ND	16	16		1	97	4.3	51-134	20	08/19/2022 0643
Dibenzofuran	ND	16	13		1	78	0.014	53-118	20	08/19/2022 0643
3,3'-Dichlorobenzidine	ND	16	5.3		1	33	6.1	27-129	20	08/19/2022 0643
2,4-Dichlorophenol	ND	16	13		1	80	2.4	47-121	20	08/19/2022 0643
Diethylphthalate	ND	16	15		1	94	0.18	56-125	20	08/19/2022 0643
Dimethyl phthalate	ND	16	14		1	90	1.4	45-127	20	08/19/2022 0643
2,4-Dimethylphenol	ND	16	17		1	106	6.7	31-124	20	08/19/2022 0643
Di-n-butyl phthalate	ND	16	16		1	101	2.3	59-127	20	08/19/2022 0643
4,6-Dinitro-2-methylphenol	ND	16	7.8		1	49	14	44-137	20	08/19/2022 0643
2,4-Dinitrophenol	ND	32	10		1	32	5.0	23-143	20	08/19/2022 0643
2,4-Dinitrotoluene	ND	16	14		1	88	0.78	57-128	20	08/19/2022 0643
2,6-Dinitrotoluene	ND	16	13		1	84	1.4	57-124	20	08/19/2022 0643
Di-n-octylphthalate	ND	16	14		1	90	4.3	51-140	20	08/19/2022 0643
bis(2-Ethylhexyl)phthalate	ND	16	17		1	108	6.7	55-135	20	08/19/2022 0643
Fluoranthene	ND	16	15		1	94	2.9	57-128	20	08/19/2022 0643
Fluorene	ND	16	13		1	84	1.2	52-124	20	08/19/2022 0643
Hexachlorobenzene	ND	16	13		1	84	0.28	53-125	20	08/19/2022 0643
Hexachlorobutadiene	ND	16	11		1	70	3.6	22-124	20	08/19/2022 0643
Hexachlorocyclopentadiene	ND	80	38		1	48	1.1	16-96	20	08/19/2022 0643

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MSD

Sample ID: XH11020-018MD
Batch: 51409
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/17/2022 1500

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Hexachloroethane	ND	16	11		1	70	7.9	21-115	20	08/19/2022 0643
Indeno(1,2,3-c,d)pyrene	ND	16	15		1	96	5.6	52-134	20	08/19/2022 0643
Isophorone	ND	16	12		1	78	4.4	42-124	20	08/19/2022 0643
2-Methylnaphthalene	ND	16	13		1	80	3.7	40-121	20	08/19/2022 0643
2-Methylphenol	ND	16	19	N	1	120	0.038	30-117	20	08/19/2022 0643
3+4-Methylphenol	ND	16	15		1	94	1.5	29-110	20	08/19/2022 0643
Naphthalene	ND	16	13		1	80	3.7	40-121	20	08/19/2022 0643
2-Nitroaniline	ND	16	15		1	91	3.7	55-127	20	08/19/2022 0643
3-Nitroaniline	ND	16	8.4		1	52	4.6	41-128	20	08/19/2022 0643
4-Nitroaniline	ND	16	12		1	75	0.74	30-135	20	08/19/2022 0643
Nitrobenzene	ND	16	11		1	67	4.2	45-121	20	08/19/2022 0643
2-Nitrophenol	ND	16	13		1	81	3.9	47-123	20	08/19/2022 0643
4-Nitrophenol	ND	32	24		1	74	1.8	53-130	20	08/19/2022 0643
N-Nitrosodi-n-propylamine	ND	16	14		1	90	1.8	49-119	20	08/19/2022 0643
N-Nitrosodiphenylamine (Diphenylamine)	ND	16	16		1	98	3.2	51-123	20	08/19/2022 0643
Pentachlorophenol	ND	32	23		1	73	0.32	35-138	20	08/19/2022 0643
Phenanthrene	ND	16	14		1	85	0.68	59-120	20	08/19/2022 0643
Phenol	ND	16	14		1	88	0.021	49-117	40	08/19/2022 0643
Pyrene	ND	16	15		1	93	1.2	57-126	20	08/19/2022 0643
2,4,5-Trichlorophenol	ND	16	13		1	79	2.0	53-123	20	08/19/2022 0643
2,4,6-Trichlorophenol	ND	16	13		1	82	1.4	50-125	20	08/19/2022 0643

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		85	44-119
2-Fluorophenol		78	19-119
Nitrobenzene-d5		82	44-120
Phenol-d5		84	10-115
Terphenyl-d14		97	50-134
2,4,6-Tribromophenol		93	43-140

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ51699-001
Batch: 51699
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/19/2022 1600

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acenaphthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/23/2022 1637
Acenaphthylene	0.10	U	1	0.20	0.10	0.040	ug/L	08/23/2022 1637
Acetophenone	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
Anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/23/2022 1637
Atrazine	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
Benzaldehyde	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
Benzo(a)anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/23/2022 1637
Benzo(a)pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/23/2022 1637
Benzo(b)fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/23/2022 1637
Benzo(g,h,i)perylene	0.10	U	1	0.20	0.10	0.040	ug/L	08/23/2022 1637
Benzo(k)fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/23/2022 1637
1,1'-Biphenyl	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
4-Bromophenyl phenyl ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
Butyl benzyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
Caprolactam	2.0	U	1	3.0	2.0	1.0	ug/L	08/23/2022 1637
Carbazole	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
bis (2-Chloro-1-methylethyl) ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
4-Chloro-3-methyl phenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
4-Chloroaniline	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
bis(2-Chloroethoxy)methane	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
bis(2-Chloroethyl)ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
2-Chloronaphthalene	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
2-Chlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
4-Chlorophenyl phenyl ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
Chrysene	0.10	U	1	0.20	0.10	0.040	ug/L	08/23/2022 1637
Dibenzo(a,h)anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/23/2022 1637
Dibenzofuran	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
3,3'-Dichlorobenzidine	3.5	U	1	4.0	3.5	1.8	ug/L	08/23/2022 1637
2,4-Dichlorophenol	0.50	U	1	1.6	0.50	0.25	ug/L	08/23/2022 1637
Diethylphthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
Dimethyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
2,4-Dimethylphenol	1.5	U	1	2.0	1.5	0.62	ug/L	08/23/2022 1637
Di-n-butyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
4,6-Dinitro-2-methylphenol	2.0	U	1	4.0	2.0	1.0	ug/L	08/23/2022 1637
2,4-Dinitrophenol	2.0	U	1	4.0	2.0	1.0	ug/L	08/23/2022 1637
2,4-Dinitrotoluene	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
2,6-Dinitrotoluene	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
Di-n-octylphthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
bis(2-Ethylhexyl)phthalate	3.0	U	1	4.0	3.0	1.5	ug/L	08/23/2022 1637
Fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/23/2022 1637
Fluorene	0.10	U	1	0.20	0.10	0.040	ug/L	08/23/2022 1637
Hexachlorobenzene	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
Hexachlorobutadiene	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
Hexachlorocyclopentadiene	4.0	U	1	4.0	4.0	2.0	ug/L	08/23/2022 1637

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ51699-001
Batch: 51699
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/19/2022 1600

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Hexachloroethane	0.40	U	1	0.80	0.40	0.17	ug/L	08/23/2022 1637
Indeno(1,2,3-c,d)pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/23/2022 1637
Isophorone	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
2-Methylnaphthalene	0.10	U	1	0.20	0.10	0.040	ug/L	08/23/2022 1637
2-Methylphenol	1.3	U	1	1.6	1.3	0.67	ug/L	08/23/2022 1637
3+4-Methylphenol	3.0	U	1	4.0	3.0	1.5	ug/L	08/23/2022 1637
Naphthalene	0.10	U	1	0.20	0.10	0.040	ug/L	08/23/2022 1637
2-Nitroaniline	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
3-Nitroaniline	2.0	U	1	3.0	2.0	1.0	ug/L	08/23/2022 1637
4-Nitroaniline	3.0	U	1	4.0	3.0	1.5	ug/L	08/23/2022 1637
Nitrobenzene	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
2-Nitrophenol	2.0	U	1	3.2	2.0	1.0	ug/L	08/23/2022 1637
4-Nitrophenol	4.0	U	1	5.0	4.0	2.0	ug/L	08/23/2022 1637
N-Nitrosodi-n-propylamine	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
N-Nitrosodiphenylamine (Diphenylamine)	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
Pentachlorophenol	4.0	U	1	5.0	4.0	2.0	ug/L	08/23/2022 1637
Phenanthrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/23/2022 1637
Phenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
Pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/23/2022 1637
2,4,5-Trichlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637
2,4,6-Trichlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/23/2022 1637

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		73	44-119
2-Fluorophenol		48	19-119
Nitrobenzene-d5		69	44-120
Phenol-d5		52	10-115
Terphenyl-d14		85	50-134
2,4,6-Tribromophenol		71	43-140

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51699-002
Batch: 51699
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/19/2022 1600

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acenaphthene	8.0	5.9		1	74	47-122	08/23/2022 1702
Acenaphthylene	8.0	6.4		1	80	41-130	08/23/2022 1702
Acetophenone	8.0	6.1		1	77	46-118	08/23/2022 1702
Anthracene	8.0	6.4		1	79	57-123	08/23/2022 1702
Atrazine	8.0	6.6		1	83	44-142	08/23/2022 1702
Benzaldehyde	8.0	6.9		1	86	20-115	08/23/2022 1702
Benzo(a)anthracene	8.0	6.6		1	83	58-125	08/23/2022 1702
Benzo(a)pyrene	8.0	6.7		1	84	54-128	08/23/2022 1702
Benzo(b)fluoranthene	8.0	7.0		1	88	53-131	08/23/2022 1702
Benzo(g,h,i)perylene	8.0	7.4		1	93	50-134	08/23/2022 1702
Benzo(k)fluoranthene	8.0	7.2		1	90	57-129	08/23/2022 1702
1,1'-Biphenyl	8.0	6.0		1	75	49-115	08/23/2022 1702
4-Bromophenyl phenyl ether	8.0	6.4		1	80	55-124	08/23/2022 1702
Butyl benzyl phthalate	8.0	7.6		1	95	53-134	08/23/2022 1702
Caprolactam	8.0	8.1		1	102	44-152	08/23/2022 1702
Carbazole	8.0	6.5		1	82	60-122	08/23/2022 1702
bis (2-Chloro-1-methylethyl) ether	8.0	5.7		1	72	37-130	08/23/2022 1702
4-Chloro-3-methyl phenol	8.0	6.2		1	77	52-119	08/23/2022 1702
4-Chloroaniline	8.0	2.7		1	34	33-117	08/23/2022 1702
bis(2-Chloroethoxy)methane	8.0	6.3		1	78	48-120	08/23/2022 1702
bis(2-Chloroethyl)ether	8.0	6.3		1	78	43-118	08/23/2022 1702
2-Chloronaphthalene	8.0	6.1		1	76	40-116	08/23/2022 1702
2-Chlorophenol	8.0	6.0		1	75	38-117	08/23/2022 1702
4-Chlorophenyl phenyl ether	8.0	6.2		1	78	53-121	08/23/2022 1702
Chrysene	8.0	6.6		1	82	59-123	08/23/2022 1702
Dibenzo(a,h)anthracene	8.0	7.0		1	88	51-134	08/23/2022 1702
Dibenzofuran	8.0	5.7		1	71	53-118	08/23/2022 1702
3,3'-Dichlorobenzidine	8.0	1.3	N	1	16	27-129	08/23/2022 1702
2,4-Dichlorophenol	8.0	5.8		1	73	47-121	08/23/2022 1702
Diethylphthalate	8.0	6.9		1	86	56-125	08/23/2022 1702
Dimethyl phthalate	8.0	6.7		1	83	45-127	08/23/2022 1702
2,4-Dimethylphenol	8.0	7.1		1	89	31-124	08/23/2022 1702
Di-n-butyl phthalate	8.0	7.2		1	90	59-127	08/23/2022 1702
4,6-Dinitro-2-methylphenol	8.0	5.9		1	74	44-137	08/23/2022 1702
2,4-Dinitrophenol	16	8.2		1	51	23-143	08/23/2022 1702
2,4-Dinitrotoluene	8.0	6.4		1	80	57-128	08/23/2022 1702
2,6-Dinitrotoluene	8.0	6.2		1	78	57-124	08/23/2022 1702
Di-n-octylphthalate	8.0	7.5		1	94	51-140	08/23/2022 1702
bis(2-Ethylhexyl)phthalate	8.0	8.8		1	110	55-135	08/23/2022 1702
Fluoranthene	8.0	6.7		1	84	57-128	08/23/2022 1702
Fluorene	8.0	6.2		1	78	52-124	08/23/2022 1702
Hexachlorobenzene	8.0	6.2		1	78	53-125	08/23/2022 1702
Hexachlorobutadiene	8.0	5.7		1	72	22-124	08/23/2022 1702
Hexachlorocyclopentadiene	40	22		1	55	16-96	08/23/2022 1702

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51699-002
Batch: 51699
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/19/2022 1600

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Hexachloroethane	8.0	6.1		1	76	21-115	08/23/2022 1702
Indeno(1,2,3-c,d)pyrene	8.0	6.9		1	86	52-134	08/23/2022 1702
Isophorone	8.0	5.9		1	74	42-124	08/23/2022 1702
2-Methylnaphthalene	8.0	6.1		1	77	40-121	08/23/2022 1702
2-Methylphenol	8.0	6.5		1	82	30-117	08/23/2022 1702
3+4-Methylphenol	8.0	7.4		1	92	29-110	08/23/2022 1702
Naphthalene	8.0	6.1		1	76	40-121	08/23/2022 1702
2-Nitroaniline	8.0	6.7		1	84	55-127	08/23/2022 1702
3-Nitroaniline	8.0	2.8	N	1	35	41-128	08/23/2022 1702
4-Nitroaniline	8.0	4.1		1	51	30-135	08/23/2022 1702
Nitrobenzene	8.0	5.1		1	64	45-121	08/23/2022 1702
2-Nitrophenol	8.0	6.1		1	76	47-123	08/23/2022 1702
4-Nitrophenol	16	10		1	63	53-130	08/23/2022 1702
N-Nitrosodi-n-propylamine	8.0	6.7		1	84	49-119	08/23/2022 1702
N-Nitrosodiphenylamine (Diphenylamine)	8.0	6.5		1	82	51-123	08/23/2022 1702
Pentachlorophenol	16	11		1	67	35-138	08/23/2022 1702
Phenanthrene	8.0	6.3		1	78	59-120	08/23/2022 1702
Phenol	8.0	6.1		1	76	49-117	08/23/2022 1702
Pyrene	8.0	6.8		1	85	57-126	08/23/2022 1702
2,4,5-Trichlorophenol	8.0	5.8		1	72	53-123	08/23/2022 1702
2,4,6-Trichlorophenol	8.0	6.0		1	75	50-125	08/23/2022 1702

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		76	44-119
2-Fluorophenol		64	19-119
Nitrobenzene-d5		76	44-120
Phenol-d5		72	10-115
Terphenyl-d14		87	50-134
2,4,6-Tribromophenol		75	43-140

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Dissolved Gases - MB

Sample ID: XQ51742-001
Batch: 51742
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Ethane	5.0	U	1	10	5.0	2.5	ug/L	08/19/2022 2044
Ethene	5.0	U	1	10	5.0	2.5	ug/L	08/19/2022 2044

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Dissolved Gases - LCS

Sample ID: XQ51742-002
Batch: 51742
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Ethane	550	700		1	127	74-131	08/19/2022 1941
Ethene	520	640		1	124	72-133	08/19/2022 1941

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Dissolved Gases - LCSD

Sample ID: XQ51742-003
Batch: 51742
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Ethane	550	710		1	129	1.3	74-131	30	08/19/2022 1955
Ethene	520	650		1	127	1.9	72-133	30	08/19/2022 1955

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Dissolved Gases - MB

Sample ID: XQ52041-001
Batch: 52041
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Methane	5.0	U	1	10	5.0	2.5	ug/L	08/23/2022 2135

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Dissolved Gases - LCS

Sample ID: XQ52041-002
Batch: 52041
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Methane	300	320		1	107	73-125	08/23/2022 2031

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Dissolved Gases - MS

Sample ID: XH11020-016MS
Batch: 52041
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Methane	760	300	840	N	1	28	73-125	08/24/2022 0053

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Dissolved Gases - MSD

Sample ID: XH11020-016MD
Batch: 52041
Analytical Method: RSK - 175
Matrix: Aqueous

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Methane	760	300	1000		1	95	21	73-125	30	08/24/2022 0107

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection
U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MB

Sample ID: XQ50907-001
Batch: 50907
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 08/15/2022 0850

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Arsenic	2.5	U	1	5.0	2.5	1.3	ug/L	09/01/2022 0123
Barium	2.5	U	1	5.0	2.5	1.3	ug/L	09/01/2022 0123
Cadmium	0.25	U	1	0.50	0.25	0.13	ug/L	09/01/2022 0123
Chromium	2.5	U	1	5.0	2.5	1.3	ug/L	09/01/2022 0123
Lead	0.50	U	1	1.0	0.50	0.25	ug/L	09/01/2022 0123
Selenium	2.5	U	1	5.0	2.5	1.3	ug/L	09/01/2022 0123
Silver	0.50	U	1	1.0	0.50	0.25	ug/L	09/01/2022 0123

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - LCS

Sample ID: XQ50907-002
Batch: 50907
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 08/15/2022 0850

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Arsenic	100	100		1	101	84-116	09/01/2022 0132
Barium	100	100		1	102	86-114	09/01/2022 0132
Cadmium	100	99		1	99	87-115	09/01/2022 0132
Chromium	100	110		1	110	85-116	09/01/2022 0132
Lead	100	110		1	109	88-115	09/01/2022 0132
Selenium	100	86		1	86	80-120	09/01/2022 0132
Silver	100	110		1	112	85-116	09/01/2022 0132

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MB

Sample ID: XQ51538-001
Batch: 51538
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 08/19/2022 0743

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Arsenic	2.5	U	1	5.0	2.5	1.3	ug/L	08/23/2022 0623
Barium	2.5	U	1	5.0	2.5	1.3	ug/L	08/23/2022 0623
Cadmium	0.25	U	1	0.50	0.25	0.13	ug/L	08/23/2022 0623
Chromium	2.5	U	1	5.0	2.5	1.3	ug/L	08/23/2022 0623
Lead	0.50	U	1	1.0	0.50	0.25	ug/L	08/23/2022 0623
Selenium	2.5	U	1	5.0	2.5	1.3	ug/L	08/23/2022 0623
Silver	0.50	U	1	1.0	0.50	0.25	ug/L	08/23/2022 0623

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - LCS

Sample ID: XQ51538-002
Batch: 51538
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 08/19/2022 0743

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Arsenic	100	100		1	103	84-116	08/23/2022 0631
Barium	100	99		1	99	86-114	08/23/2022 0631
Cadmium	100	88		1	88	87-115	08/23/2022 0631
Chromium	100	100		1	103	85-116	08/23/2022 0631
Lead	100	100		1	101	88-115	08/23/2022 0631
Selenium	100	94		1	94	80-120	08/23/2022 0631
Silver	100	97		1	97	85-116	08/23/2022 0631

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MB

Sample ID: XQ51007-001
Batch: 51007
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 08/13/2022 1352

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Mercury	0.18	U	1	0.20	0.18	0.091	ug/L	08/13/2022 1721

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - LCS

Sample ID: XQ51007-002
Batch: 51007
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 08/13/2022 1352

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Mercury	2.0	2.0		1	102	82-119	08/13/2022 1724

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MB

Sample ID: XQ51636-001
Batch: 51636
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 08/20/2022 0825

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Mercury	0.18	U	1	0.20	0.18	0.091	ug/L	08/20/2022 1247

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - LCS

Sample ID: XQ51636-002
Batch: 51636
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 08/20/2022 0825

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Mercury	2.0	1.9		1	93	82-119	08/20/2022 1250

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MS

Sample ID: XH11020-009MS
Batch: 51636
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 08/20/2022 0825

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Mercury	ND	2.0	1.9		1	96	82-119	08/20/2022 1301

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MSD

Sample ID: XH11020-009MD
Batch: 51636
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 08/20/2022 0825

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Mercury	ND	2.0	1.9		1	94	2.0	82-119	20	08/20/2022 1304

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MS

Sample ID: XH11020-016MS
Batch: 51636
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 08/20/2022 0825

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Mercury	ND	2.0	1.8		1	92	82-119	08/20/2022 1309

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MSD

Sample ID: XH11020-016MD
Batch: 51636
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 08/20/2022 0825

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Mercury	ND	2.0	1.8		1	90	2.7	82-119	20	08/20/2022 1317

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Chain of Custody
and
Miscellaneous Documents

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www.pacelabs.com

Number 137987

Client: Terracon Consultants
Address: 2401 Brentwood Rd Suite 107
City: Raleigh State: NC Zip Code: 27604
Project Name: TAMP
Project No.: 7021P145
P.O. No.:

Report to Contact: Ethan.Dinwiddie@Terracon.com
Sampler's Signature: X
Printed Name: Taylor Savitski

Telephone No. / E-mail: Don.Malone@Terracon.com
Analysis (Attach list if more space is needed)

Quote No.: 25322
Page 1 of 1
XH11020
CSD
4

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	B-Grab C-Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	No of Containers by Preservative Type: Unpres.	H2SO4	HNO3	HCl	NaOH	NaOH/Zn	Field Filtered	VOCs 8260	SVOCs 8270	PCRA 8 Metals	TDC 9060	Dissolved Gases RSK-175					Remarks / Cooler I.D.
MW-107	8/10	1345	G	X			2	1	1	5				X	X	X	X	X					
DUP-GW-02	↓	—	G	X			2		1	3				X	X	X							
EB-GW-02	↓	1700	G	X			2		1	3				X	X	X							
EB-GW-01	↓	1600	G	X			2		1	3				X	X	X							
TB-06	↓	—	G	X						2				X									

Turn Around Time Required (Prior lab approval required for expedited TAT.): ☒ Standard ☐ Rush (Specify)

Sample Disposal: ☐ Return to Client ☒ Disposal by Lab

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☒ Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by: [signature]	8/10	2000	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by: Fed ex	8.11.22	1015	4. Laboratory received by: [signature]	8.11.22	1015

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on ice (Circle) Yes No Ice Pack
Receipt Temp. 1.5 °C
Temp Blank ☒ Y ☐ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME003N2-01

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Number 137984

Client: Terrason Consultants
Address: 2401 Brentwood Rd, Suite 102
City: Raleigh | State: NC | Zip Code: 27604
Project Name: TAMP
Project No.: 7021P145 | P.O. No.:

Report to Contact: Etha.Dinwiddie@Terrason.com
Sampler's Signature: X
Printed Name: Ethan Dinwiddie

Telephone No. / E-mail: Don.Malone@Terrason.com
Analysis (Attach list if more space is needed)

Quote No. 25322
Page ___ of ___
XH11020
CSD

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	Grab Or Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	No of Containers by Preservative Type: Dispose	HCl/O4	HNO3	HCl	NaOH	Solids Kit	Field Filtered	VOCs 8260	SVOCs 8270	RCRA 8 Metals	TOC 9060	Dissolved Gases RSK-175					Remarks / Cooler I.D.
MW-138	8/9	1430	G	X						3				X									
MW-127	↓	1530	G	X						3				X									
MW-133	↓	1545	G	X						3				X									
MW-119	↓	1630	G	X			2		1	3				X	X	X							
MW-122	↓	1745	G	X						3				X									
MS-GW-02	↓	1635	G	X			2		1	3				X									
MSD-GW-02	↓	1640	G	X			2		1	3				X									
MW-124	8/10	1005	G	X						3				X									
FB-01	↓	1245	G	X						3				X									
TB-04	↓	—	G	X						2				X									

Turn Around Time Required (Prior lab approval required for expedited TAT.): ☒ Standard ☐ Rush (Specify)
Sample Disposal: ☐ Return to Client ☒ Disposal by Lab
Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☒ Unknown
QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by	8/10/22		1. Received by	8-10-22	1450
2. Relinquished by	8/10/22	1550	2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by: Fed Ex	08/11/22	1015	4. Laboratory received by: [signature]	08/11/22	1015

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Circle): Yes No Ice Pack
Receipt Temp. 4.8 °C
Temp Blank ☐ Y ☒ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME003N2-01

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Number 137983

Client: Terracon Consultants	Report to Contact: Ethan.Dinwiddie@Terracon.com	Telephone No. / E-mail: Dan.Malone@Terracon.com	Quote No.: 25322
Address: 2401 Brentwood Rd, Suite 107	Sampler's Signature: X [signature]	Analysis (Attach list if more space is needed)	Page ___ of ___
City: Raleigh; State: NC; Zip Code: 27604	Printed Name: Ethan Dinwiddie		XH11020
Project Name: TAMP			CSD
Project No.: 7021P145; P.O. No.:			

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	G=Grab C=Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	No of Containers by Preservative Type: Unpres.	HSSOK	HNO3	HCl	NaOH	NaOH/Zn	Fluid Preserved	VOCs	SVOC	Metals	TOC	Dissolved Gases					Remarks / Cooler I.D.
MW-101	8/9/22 ~~[illegible]~~	1610	G	X			2		3	3				X	X	X							
MW-117	8/9/22	1515	G	X			2		3	3				X	X	X							
MW-109	8/9/22	1445	G	X			2	1	5	5				X	X	X	X	X					
MB-GW-01	8/9/22	1505	G	X			2	1	6	5				X	X	X	X	X					
MSD-GW-01	8/9/22	1520					2	1	5	5				X	X	X	X	X					
TB-05	8/10/22						2		2	2				X									

Turn Around Time Required (Prior lab approval required for expedited TAT.): ☑ Standard ☐ Rush (Specify)

Sample Disposal: ☐ Return to Client ☑ Disposal by Lab

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☑ Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by [signature]	8/10		1. Received by [signature]	8.10.22	1450
2. Relinquished by [signature]	8/10	1545	2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by Fed ex	8.11.22	1015	4. Laboratory received by [signature]	8.11.22	1015

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Circle) (Yes) No Ice Pack
Receipt Temp 7.6 °C
Temp Blank ☐ Y ☑ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME003N2-01

DC#_Title: ENV-FRM-WCOI-0286 v02_Samples Receipt Checklist (SRC)
Effective Date: 8/2/2022

Sample Receipt Checklist (SRC)

Client: Terracon Cooler Inspected by/date: KNR / 08/11/2022 Lot #: XH11020

Means of receipt: [ ] Pace [ ] Client [ ] UPS [✓] FedEx [ ] Other: _____

[ ] Yes	[✓] No		1. Were custody seals present on the cooler?
[ ] Yes	[ ] No	[✓] NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: 22-1645 Chlorine Strip ID: NA Tested by: CHR
Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA
4.5/4.5 °C NA/NA °C NA/NA °C NA / NA °C
Method: [✓] Temperature Blank [ ] Against Bottles IR Gun ID: 8 IR Gun Correction Factor: 0 °C
Method of coolant: [✓] Wet Ice [ ] Ice Packs [ ] Dry Ice [ ] None

[✓] Yes	[ ] No	[ ] NA	3. Were all coolers received at or below 6.0°C? If no, was Project Manager notified? PM was Notified by: phone / email / face-to-face (circle one).
[ ] Yes	[✓] No	[ ] NA	4. Is the commercial courier's packing slip attached to this form?
[✓] Yes	[ ] No		5. Were proper custody procedures (relinquished/received) followed?
[✓] Yes	[ ] No		6. Were sample IDs listed on the COC and all sample containers?
[✓] Yes	[ ] No		7. Was collection date & time listed on the COC and all sample containers?
[✓] Yes	[ ] No		8. Did all container label information (ID, date, time) agree with the COC?
[✓] Yes	[ ] No		9. Were tests to be performed listed on the COC?
[✓] Yes	[ ] No		10. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? _____
[✓] Yes	[ ] No		11. Was adequate sample volume available?
[✓] Yes	[ ] No		12. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
[✓] Yes	[✓] No		13. Were all samples containers accounted for? (No missing/excess)
[ ] Yes	[✓] No	[ ] NA	14. Were VOA, 8015C and RSK-175 samples free of bubbles >"pea-size" (¼" or 6mm in diameter) in any of the VOA vials?
[✓] Yes	[ ] No	[ ] NA	15. Were all DRO/metals/nutrient samples received at a pH of < 2?
[ ] Yes	[ ] No	[✓] NA	16. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
[ ] Yes	[ ] No	[✓] NA	17. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
[✓] Yes	[ ] No	[ ] NA	18. Was the quote number listed on the container label? If yes, Quote # 25322

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA. ☐
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) 001(3), 003(1), 004(3), 005(1), 006(1), 010(3), 014(2), 017 were received with bubbles ≥ 6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Unique ID: NA.

Comments: bubbles continued: ~~001~~ 017(2) missing sample container for -017

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Report of Analysis

Terracon Consultants, Inc.
2401 Brentwood Road
Suite 107 I
Raleigh, NC 27604
Attention: Ethan Dinwiddie

Project Name: TAMP

Project Number: 7021P145

Lot Number:**XH12007**

Date Completed:09/02/2022

09/14/2022 12:31 PM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.
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Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
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Case Narrative
Terracon Consultants, Inc.
Lot Number: XH12007

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Additionally, the DoD QSM version 5.3 has been followed for these samples. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs, the DoD QSM, or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

VOA 8260D

The continuing calibration verification (CCV) associated with samples XH12007-001, XH12007-003, and XH12007-004 for Acetone (52.4%) recovered above the upper control limit. The samples associated with this CCV were non-detect for the affected analyte; therefore, the data has been reported.

The closing continuing calibration verification (CCV) associated with samples: XH12007-001, XH12007-003, and XH12007-004 was not analyzed at end of sequence. The MSD run at the end of the sequence was copied and processed as a 8260 closing CCV. The CCV passed acceptance criteria and the data has been reported.

XH12007-001 (MW-132) (Run 1) (Analysis Batch 51688)
XH12007-003 (MW-116) (Run 1) (Analysis Batch 51688)
XH12007-004 (TB-08) (Run 1) (Analysis Batch 51688)

Sample XH12007-004 (TB-08) was received with an air bubble in both of the sample vials.

The closing continuing calibration verification (CCV) associated with samples XH12007-003 and XH12007-004 for Trichloroethene (372%) recovered above the upper control limit. The samples associated with this CCV were non-detect for the affected analyte; therefore, the data has been reported.

XH12007-003 (MW-116) (Run 1) (Analysis Batch 51688) TCL VOCs (OLM04.3) (DOD QSM 5.4)
XH12007-004 (TB-08) (Run 1) (Analysis Batch 51688) TCL VOCs (OLM04.3) (DOD QSM 5.4)

Reanalysis of the following samples was performed outside of the analytical holding time: XH12007-003 (MW-116) and XH12007-004 (TB-08). The above samples were run outside of holding time due to Bromoform and 1,2-dibromo-3-chloropropane failing low in the continuous calibration verification in run 1. Both runs have been reported

Reanalysis of sample XH12007-001 (MW-132) was performed outside of the analytical holding time. The sample was run outside of holding time due to Bromoform, and 1,2-dibromo-3-chloropropane failing low in the continuous calibration verification (CCV) in Run 1. They were also reanalyzed due to a high CCV of trichloroethene. Both runs have been reported.

RSK175-methane

The method blank associated with batch 51425 had Methane detected at a concentration that was above the DL but below the LOQ. All samples associated with this method blank that have detections for Methane have been flagged with a "B".

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Sample Summary

Terracon Consultants, Inc.

Lot Number: XH12007

Project Name: TAMP

Project Number: 7021P145

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	MW-132	Aqueous	08/10/2022 0905	08/12/2022
002	MW-106	Aqueous	08/10/2022 1035	08/12/2022
003	MW-116	Aqueous	08/10/2022 1150	08/12/2022
004	TB-08	Aqueous	08/10/2022	08/12/2022

(4 samples)

Detection Summary
Terracon Consultants, Inc.
Lot Number: XH12007
Project Name: TAMP
Project Number: 7021P145

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	MW-132	Aqueous	TOC	SM 5310C-	2500		ug/L	6
001	MW-132	Aqueous	Acetone	8260D	8.5	J	ug/L	7
001	MW-132	Aqueous	cis-1,2-Dichloroethene	8260D	1.1		ug/L	7
001	MW-132	Aqueous	Tetrachloroethene	8260D	2.0		ug/L	7
001	MW-132	Aqueous	Trichloroethene	8260D	15	H	ug/L	10
001	MW-132	Aqueous	Anthracene	8270E	0.074	J	ug/L	11
001	MW-132	Aqueous	Methane	RSK - 175	46	B	ug/L	13
001	MW-132	Aqueous	Barium	6020B	29		ug/L	14
001	MW-132	Aqueous	Cadmium	6020B	0.25	J	ug/L	14
001	MW-132	Aqueous	Chromium	6020B	4.0	J	ug/L	14
001	MW-132	Aqueous	Lead	6020B	4.0		ug/L	14
002	MW-106	Aqueous	Benzene	8260D	0.97	J	ug/L	15
002	MW-106	Aqueous	Cyclohexane	8260D	3.5		ug/L	15
002	MW-106	Aqueous	cis-1,2-Dichloroethene	8260D	1.5		ug/L	15
002	MW-106	Aqueous	Ethylbenzene	8260D	6.0		ug/L	15
002	MW-106	Aqueous	Isopropylbenzene	8260D	0.90	J	ug/L	15
002	MW-106	Aqueous	Methyl tertiary butyl ether	8260D	0.67	J	ug/L	15
002	MW-106	Aqueous	Methylcyclohexane	8260D	1.9	J	ug/L	15
002	MW-106	Aqueous	Trichloroethene	8260D	2.0		ug/L	16
002	MW-106	Aqueous	Vinyl chloride	8260D	5.0		ug/L	16
002	MW-106	Aqueous	Xylenes (total)	8260D	5.1		ug/L	16
002	MW-106	Aqueous	Acenaphthene	8270E	0.070	J	ug/L	17
002	MW-106	Aqueous	Anthracene	8270E	0.042	J	ug/L	17
002	MW-106	Aqueous	bis(2-Ethylhexyl)phthalate	8270E	3.7	J	ug/L	17
002	MW-106	Aqueous	Fluorene	8270E	0.072	J	ug/L	17
002	MW-106	Aqueous	2-Methylnaphthalene	8270E	0.18	J	ug/L	18
002	MW-106	Aqueous	Naphthalene	8270E	1.1		ug/L	18
002	MW-106	Aqueous	Phenanthrene	8270E	0.042	J	ug/L	18
002	MW-106	Aqueous	Barium	6020B	54		ug/L	19
002	MW-106	Aqueous	Cadmium	6020B	0.23	J	ug/L	19
003	MW-116	Aqueous	Acetone	8260D	5.0	J	ug/L	20
003	MW-116	Aqueous	Chloroform	8260D	0.77	J	ug/L	20
003	MW-116	Aqueous	Chloromethane (Methyl	8260D	0.65	J	ug/L	20
003	MW-116	Aqueous	Trichlorofluoromethane	8260D	3.8		ug/L	21
003	MW-116	Aqueous	Barium	6020B	30		ug/L	26
003	MW-116	Aqueous	Cadmium	6020B	0.60		ug/L	26
003	MW-116	Aqueous	Chromium	6020B	3.2	J	ug/L	26
003	MW-116	Aqueous	Lead	6020B	0.55	J	ug/L	26

(38 detections)

Inorganic non-metals

Client: **Terracon Consultants, Inc.**			Laboratory ID: **XH12007-001**
Description: **MW-132**			Matrix: **Aqueous**
Date Sampled: **08/10/2022 0905**	Project Name: **TAMP**		
Date Received: **08/12/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(TOC) SM 5310C-2011	1	08/27/2022 0324	CMM		52324

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
TOC		**SM 5310C-2011**	**2500**		**2000**	1500	**600**	**ug/L**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH12007-001**	
Description: **MW-132**		Matrix: **Aqueous**	
Date Sampled: **08/10/2022 0905**	Project Name: **TAMP**		
Date Received: **08/12/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1417	JWO		51688
2	5030B	8260D	1	08/25/2022 2313	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**8.5**	**J**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**1.1**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**2.0**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH12007-001**	
Description: **MW-132**		Matrix: **Aqueous**	
Date Sampled: **08/10/2022 0905**	Project Name: **TAMP**		
Date Received: **08/12/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1417	JWO		51688
2	5030B	8260D	1	08/25/2022 2313	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**19**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		98	81-118	H	98	81-118
Bromofluorobenzene		99	85-114	H	100	85-114
Toluene-d8		97	89-112	H	98	89-112
Dibromofluoromethane		91	80-119	H	97	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH12007-001**

Description: **MW-132** Matrix: **Aqueous**

Date Sampled: **08/10/2022 0905** Project Name: **TAMP**

Date Received: **08/12/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1417	JWO		51688
2	5030B	8260D	1	08/25/2022 2313	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**9.1**	**HJ**	**20**	10	**5.0**	**ug/L**	**2**
Benzene	71-43-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromoform	75-25-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chloroethane	75-00-3	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
Chloroform	67-66-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chloromethane (Methyl chloride)	**74-87-3**	**8260D**	**0.91**	**HJ**	**2.0**	1.0	**0.50**	**ug/L**	**2**
Cyclohexane	110-82-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	1.2	UH	2.0	1.2	0.60	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**0.93**	**HJ**	**1.0**	0.80	**0.40**	**ug/L**	**2**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Methylcyclohexane	108-87-2	8260D	0.80	UH	5.0	0.80	0.40	ug/L	2
Methylene chloride	75-09-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Styrene	100-42-5	8260D	0.82	UH	1.0	0.82	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Tetrachloroethene	**127-18-4**	**8260D**	**1.6**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Toluene	108-88-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	UH	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH12007-001**	
Description: **MW-132**		Matrix: **Aqueous**	
Date Sampled: **08/10/2022 0905**	Project Name: **TAMP**		
Date Received: **08/12/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1417	JWO		51688
2	5030B	8260D	1	08/25/2022 2313	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Trichloroethene	**79-01-6**	**8260D**	**15**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Trichlorofluoromethane	75-69-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Vinyl chloride	75-01-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		98	81-118	H	98	81-118
Bromofluorobenzene		99	85-114	H	100	85-114
Toluene-d8		97	89-112	H	98	89-112
Dibromofluoromethane		91	80-119	H	97	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH12007-001**

Description: **MW-132** Matrix: **Aqueous**

Date Sampled: **08/10/2022 0905** Project Name: **TAMP**

Date Received: **08/12/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/18/2022 1705	CMF	08/15/2022 1300	51087

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	**120-12-7**	**8270E**	**0.074**	**J**	**0.20**	0.10	**0.040**	**ug/L**	**1**
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	84-74-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

LOQ = Limit of Quantitation
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U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
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S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH12007-001**

Description: **MW-132** Matrix: **Aqueous**

Date Sampled: **08/10/2022 0905** Project Name: **TAMP**

Date Received: **08/12/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/18/2022 1705	CMF	08/15/2022 1300	51087

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		79	44-119
2-Fluorophenol		45	19-119
Nitrobenzene-d5		70	44-120
Phenol-d5		59	10-115
Terphenyl-d14		99	50-134
2,4,6-Tribromophenol		98	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Dissolved Gases

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH12007-001**	
Description: **MW-132**		Matrix: **Aqueous**	
Date Sampled: **08/10/2022 0905**	Project Name: **TAMP**		
Date Received: **08/12/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	08/17/2022 2105	JM1		51425

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Ethane	74-84-0	RSK - 175	5.0	U	10	5.0	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	5.0	U	10	5.0	2.5	ug/L	1
Methane	**74-82-8**	**RSK - 175**	**46**	**B**	**10**	5.0	**2.5**	**ug/L**	**1**

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH12007-001**	
Description: **MW-132**		Matrix: **Aqueous**	
Date Sampled: **08/10/2022 0905**	Project Name: **TAMP**		
Date Received: **08/12/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	08/31/2022 1712	BNW	08/18/2022 0043	51351
1		7470A	1	08/13/2022 1836	MRW2	08/13/2022 1352	51007

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**29**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	**7440-43-9**	**6020B**	**0.25**	**J**	**0.50**	0.25	**0.13**	**ug/L**	**1**
Chromium	**7440-47-3**	**6020B**	**4.0**	**J**	**5.0**	2.5	**1.3**	**ug/L**	**1**
Lead	**7439-92-1**	**6020B**	**4.0**		**1.0**	0.50	**0.25**	**ug/L**	**1**
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH12007-002**

Description: **MW-106** Matrix: **Aqueous**

Date Sampled: **08/10/2022 1035** Project Name: **TAMP**

Date Received: **08/12/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/21/2022 1650	JMM2		51772

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	**71-43-2**	**8260D**	**0.97**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	**110-82-7**	**8260D**	**3.5**		**1.0**	0.80	**0.40**	**ug/L**	**1**
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**1.5**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	**100-41-4**	**8260D**	**6.0**		**1.0**	0.80	**0.40**	**ug/L**	**1**
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	**98-82-8**	**8260D**	**0.90**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260D**	**0.67**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	**108-87-2**	**8260D**	**1.9**	**J**	**5.0**	0.80	**0.40**	**ug/L**	**1**
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH12007-002**	
Description: **MW-106**		Matrix: **Aqueous**	
Date Sampled: **08/10/2022 1035**	Project Name: **TAMP**		
Date Received: **08/12/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/21/2022 1650	JMM2		51772

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**2.0**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	**75-01-4**	**8260D**	**5.0**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Xylenes (total)	**1330-20-7**	**8260D**	**5.1**		**1.0**	0.80	**0.40**	**ug/L**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		93	81-118
Bromofluorobenzene		93	85-114
Toluene-d8		98	89-112
Dibromofluoromethane		93	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH12007-002**
Description: **MW-106** Matrix: **Aqueous**
Date Sampled: **08/10/2022 1035** Project Name: **TAMP**
Date Received: **08/12/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/18/2022 1730	CMF	08/15/2022 1300	51087

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	**83-32-9**	**8270E**	**0.070**	**J**	**0.20**	0.10	**0.040**	**ug/L**	**1**
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	**120-12-7**	**8270E**	**0.042**	**J**	**0.20**	0.10	**0.040**	**ug/L**	**1**
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	84-74-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	**117-81-7**	**8270E**	**3.7**	**J**	**4.0**	3.0	**1.5**	**ug/L**	**1**
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	**86-73-7**	**8270E**	**0.072**	**J**	**0.20**	0.10	**0.040**	**ug/L**	**1**
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH12007-002**

Description: **MW-106** Matrix: **Aqueous**

Date Sampled: **08/10/2022 1035** Project Name: **TAMP**

Date Received: **08/12/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/18/2022 1730	CMF	08/15/2022 1300	51087

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	**91-57-6**	**8270E**	**0.18**	**J**	**0.20**	0.10	**0.040**	**ug/L**	**1**
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	**91-20-3**	**8270E**	**1.1**		**0.20**	0.10	**0.040**	**ug/L**	**1**
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	**85-01-8**	**8270E**	**0.042**	**J**	**0.20**	0.10	**0.040**	**ug/L**	**1**
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		86	44-119
2-Fluorophenol		50	19-119
Nitrobenzene-d5		79	44-120
Phenol-d5		60	10-115
Terphenyl-d14		113	50-134
2,4,6-Tribromophenol		101	43-140

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Metals

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH12007-002**	
Description: **MW-106**		Matrix: **Aqueous**	
Date Sampled: **08/10/2022 1035**	Project Name: **TAMP**		
Date Received: **08/12/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	08/31/2022 1721	BNW	08/18/2022 0043	51351
1		7470A	1	08/13/2022 1834	MRW2	08/13/2022 1352	51007

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**54**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	**7440-43-9**	**6020B**	**0.23**	**J**	**0.50**	0.25	**0.13**	**ug/L**	**1**
Chromium	7440-47-3	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Lead	7439-92-1	6020B	0.50	U	1.0	0.50	0.25	ug/L	1
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH12007-003**	
Description: **MW-116**		Matrix: **Aqueous**	
Date Sampled: **08/10/2022 1150**	Project Name: **TAMP**		
Date Received: **08/12/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1504	JWO		51688
2	5030B	8260D	1	08/25/2022 2336	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**5.0**	**J**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	**67-66-3**	**8260D**	**0.77**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
Chloromethane (Methyl chloride)	**74-87-3**	**8260D**	**0.65**	**J**	**2.0**	1.0	**0.50**	**ug/L**	**1**
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH12007-003**	
Description: **MW-116**		Matrix: **Aqueous**	
Date Sampled: **08/10/2022 1150**	Project Name: **TAMP**		
Date Received: **08/12/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1504	JWO		51688
2	5030B	8260D	1	08/25/2022 2336	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichlorofluoromethane	**75-69-4**	**8260D**	**3.8**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		97	81-118	H	100	81-118
Bromofluorobenzene		103	85-114	H	105	85-114
Toluene-d8		99	89-112	H	99	89-112
Dibromofluoromethane		94	80-119	H	96	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Description: **MW-116** Matrix: **Aqueous**

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Date Received: **08/12/2022** Project Number: **7021P145**

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1	5030B	8260D	1	08/19/2022 1504	JWO		51688
2	5030B	8260D	1	08/25/2022 2336	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**6.1**	**HJ**	**20**	10	**5.0**	**ug/L**	**2**
Benzene	71-43-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromoform	75-25-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chloroethane	75-00-3	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
Chloroform	**67-66-3**	**8260D**	**0.76**	**HJ**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	UH	2.0	1.0	0.50	ug/L	2
Cyclohexane	110-82-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	1.2	UH	2.0	1.2	0.60	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Methylcyclohexane	108-87-2	8260D	0.80	UH	5.0	0.80	0.40	ug/L	2
Methylene chloride	75-09-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Styrene	100-42-5	8260D	0.82	UH	1.0	0.82	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Tetrachloroethene	127-18-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Toluene	108-88-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	UH	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
U = Not detected at or above the LOD
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
LOD = Limit of Detection
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH12007-003**	
Description: **MW-116**		Matrix: **Aqueous**	
Date Sampled: **08/10/2022 1150**	Project Name: **TAMP**		
Date Received: **08/12/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1504	JWO		51688
2	5030B	8260D	1	08/25/2022 2336	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Trichloroethene	79-01-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Trichlorofluoromethane	**75-69-4**	**8260D**	**4.2**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Vinyl chloride	75-01-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		97	81-118	H	100	81-118
Bromofluorobenzene		103	85-114	H	105	85-114
Toluene-d8		99	89-112	H	99	89-112
Dibromofluoromethane		94	80-119	H	96	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH12007-003**

Description: **MW-116** Matrix: **Aqueous**

Date Sampled: **08/10/2022 1150** Project Name: **TAMP**

Date Received: **08/12/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/18/2022 1755	CMF	08/15/2022 1300	51087

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acenaphthene	83-32-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acenaphthylene	208-96-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Acetophenone	98-86-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Atrazine	1912-24-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzofuran	132-64-9	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	3.5	U	4.0	3.5	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	0.50	U	1.6	0.50	0.25	ug/L	1
Diethylphthalate	84-66-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	1.5	U	2.0	1.5	0.62	ug/L	1
Di-n-butyl phthalate	84-74-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	2.0	U	4.0	2.0	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Fluoranthene	206-44-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Fluorene	86-73-7	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	4.0	U	4.0	4.0	2.0	ug/L	1

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Semivolatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XH12007-003**

Description: **MW-116** Matrix: **Aqueous**

Date Sampled: **08/10/2022 1150** Project Name: **TAMP**

Date Received: **08/12/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	08/18/2022 1755	CMF	08/15/2022 1300	51087

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Hexachloroethane	67-72-1	8270E	0.40	U	0.80	0.40	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Isophorone	78-59-1	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Methylphenol	95-48-7	8270E	1.3	U	1.6	1.3	0.67	ug/L	1
3+4-Methylphenol	106-44-5	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	2.0	U	3.0	2.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	3.0	U	4.0	3.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2-Nitrophenol	88-75-5	8270E	2.0	U	3.2	2.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	4.0	U	5.0	4.0	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
Phenol	108-95-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	0.10	U	0.20	0.10	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	1.0	U	1.6	1.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	1.0	U	1.6	1.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		68	44-119
2-Fluorophenol		42	19-119
Nitrobenzene-d5		64	44-120
Phenol-d5		57	10-115
Terphenyl-d14		93	50-134
2,4,6-Tribromophenol		78	43-140

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Metals

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH12007-003**	
Description: **MW-116**		Matrix: **Aqueous**	
Date Sampled: **08/10/2022 1150**	Project Name: **TAMP**		
Date Received: **08/12/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	08/31/2022 1729	BNW	08/18/2022 0043	51351
1		7470A	1	08/13/2022 1831	MRW2	08/13/2022 1352	51007

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Arsenic	7440-38-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Barium	**7440-39-3**	**6020B**	**30**		**5.0**	2.5	**1.3**	**ug/L**	**1**
Cadmium	**7440-43-9**	**6020B**	**0.60**		**0.50**	0.25	**0.13**	**ug/L**	**1**
Chromium	**7440-47-3**	**6020B**	**3.2**	**J**	**5.0**	2.5	**1.3**	**ug/L**	**1**
Lead	**7439-92-1**	**6020B**	**0.55**	**J**	**1.0**	0.50	**0.25**	**ug/L**	**1**
Mercury	7439-97-6	7470A	0.18	U	0.20	0.18	0.091	ug/L	1
Selenium	7782-49-2	6020B	2.5	U	5.0	2.5	1.3	ug/L	1
Silver	7440-22-4	6020B	0.50	U	1.0	0.50	0.25	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH12007-004**	
Description: **TB-08**		Matrix: **Aqueous**	
Date Sampled: **08/10/2022**	Project Name: **TAMP**		
Date Received: **08/12/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1331	JWO		51688
2	5030B	8260D	1	08/25/2022 2203	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH12007-004**	
Description: **TB-08**		Matrix: **Aqueous**	
Date Sampled: **08/10/2022**	Project Name: **TAMP**		
Date Received: **08/12/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1331	JWO		51688
2	5030B	8260D	1	08/25/2022 2203	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		99	81-118	H	98	81-118
Bromofluorobenzene		104	85-114	H	101	85-114
Toluene-d8		100	89-112	H	99	89-112
Dibromofluoromethane		94	80-119	H	95	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH12007-004**	
Description: **TB-08**		Matrix: **Aqueous**	
Date Sampled: **08/10/2022**	Project Name: **TAMP**		
Date Received: **08/12/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1331	JWO		51688
2	5030B	8260D	1	08/25/2022 2203	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	UH	20	10	5.0	ug/L	2
Benzene	71-43-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromoform	75-25-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chloroethane	75-00-3	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
Chloroform	67-66-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	UH	2.0	1.0	0.50	ug/L	2
Cyclohexane	110-82-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	1.2	UH	2.0	1.2	0.60	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Methylcyclohexane	108-87-2	8260D	0.80	UH	5.0	0.80	0.40	ug/L	2
Methylene chloride	75-09-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Styrene	100-42-5	8260D	0.82	UH	1.0	0.82	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Tetrachloroethene	127-18-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Toluene	108-88-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	UH	1.0	0.84	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XH12007-004**	
Description: **TB-08**		Matrix: **Aqueous**	
Date Sampled: **08/10/2022**	Project Name: **TAMP**		
Date Received: **08/12/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	08/19/2022 1331	JWO		51688
2	5030B	8260D	1	08/25/2022 2203	JMM2		52303

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Trichloroethene	79-01-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Trichlorofluoromethane	75-69-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Vinyl chloride	75-01-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		99	81-118	H	98	81-118
Bromofluorobenzene		104	85-114	H	101	85-114
Toluene-d8		100	89-112	H	99	89-112
Dibromofluoromethane		94	80-119	H	95	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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QC Summary

Inorganic non-metals - MB

Sample ID: XQ52324-001
Batch: 52324
Analytical Method: SM 5310C-2011
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
TOC	1500	U	1	2000	1500	600	ug/L	08/27/2022 0227

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCS

Sample ID: XQ52324-002
Batch: 52324
Analytical Method: SM 5310C-2011

Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
TOC	20000	20000		1	100	90-110	08/27/2022 0238

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51688-001
Batch: 51688
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	08/19/2022 1206
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	08/19/2022 1206
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	08/19/2022 1206
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	08/19/2022 1206
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	08/19/2022 1206
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	08/19/2022 1206
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	08/19/2022 1206
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	08/19/2022 1206
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	08/19/2022 1206
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	08/19/2022 1206
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	08/19/2022 1206
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51688-001
Batch: 51688
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	08/19/2022 1206

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		98	81-118
Bromofluorobenzene		94	85-114
Toluene-d8		95	89-112
Dibromofluoromethane		91	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51688-002
Batch: 51688
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	150		1	152	39-160	08/19/2022 0849
Benzene	50	49		1	98	79-120	08/19/2022 0849
Bromodichloromethane	50	43		1	86	79-125	08/19/2022 0849
Bromoform	50	38		1	76	66-130	08/19/2022 0849
Bromomethane (Methyl bromide)	50	50		1	101	53-141	08/19/2022 0849
2-Butanone (MEK)	100	110		1	109	56-143	08/19/2022 0849
Carbon disulfide	50	44		1	87	64-133	08/19/2022 0849
Carbon tetrachloride	50	42		1	83	72-136	08/19/2022 0849
Chlorobenzene	50	45		1	91	82-118	08/19/2022 0849
Chloroethane	50	42		1	84	60-138	08/19/2022 0849
Chloroform	50	46		1	92	79-124	08/19/2022 0849
Chloromethane (Methyl chloride)	50	46		1	92	50-139	08/19/2022 0849
Cyclohexane	50	45		1	89	71-130	08/19/2022 0849
1,2-Dibromo-3-chloropropane (DBCP)	50	37		1	74	62-128	08/19/2022 0849
Dibromochloromethane	50	42		1	83	74-126	08/19/2022 0849
1,2-Dibromoethane (EDB)	50	47		1	95	77-121	08/19/2022 0849
1,2-Dichlorobenzene	50	44		1	88	80-119	08/19/2022 0849
1,3-Dichlorobenzene	50	44		1	88	80-119	08/19/2022 0849
1,4-Dichlorobenzene	50	43		1	86	79-118	08/19/2022 0849
Dichlorodifluoromethane	50	45		1	91	32-152	08/19/2022 0849
1,1-Dichloroethane	50	45		1	90	77-125	08/19/2022 0849
1,2-Dichloroethane	50	46		1	92	73-128	08/19/2022 0849
1,1-Dichloroethene	50	44		1	89	71-131	08/19/2022 0849
cis-1,2-Dichloroethene	50	47		1	93	78-123	08/19/2022 0849
trans-1,2-Dichloroethene	50	44		1	89	75-124	08/19/2022 0849
1,2-Dichloropropane	50	46		1	92	78-122	08/19/2022 0849
cis-1,3-Dichloropropene	50	45		1	91	75-124	08/19/2022 0849
trans-1,3-Dichloropropene	50	45		1	90	73-127	08/19/2022 0849
Ethylbenzene	50	46		1	92	79-121	08/19/2022 0849
2-Hexanone	100	110		1	107	57-139	08/19/2022 0849
Isopropylbenzene	50	46		1	93	72-131	08/19/2022 0849
Methyl acetate	50	48		1	96	56-136	08/19/2022 0849
Methyl tertiary butyl ether (MTBE)	50	51		1	101	71-124	08/19/2022 0849
4-Methyl-2-pentanone	100	97		1	97	67-130	08/19/2022 0849
Methylcyclohexane	50	44		1	87	72-132	08/19/2022 0849
Methylene chloride	50	45		1	90	74-124	08/19/2022 0849
Styrene	50	48		1	96	78-123	08/19/2022 0849
1,1,2,2-Tetrachloroethane	50	49		1	98	71-121	08/19/2022 0849
Tetrachloroethene	50	46		1	91	74-129	08/19/2022 0849
Toluene	50	48		1	95	80-121	08/19/2022 0849
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	41		1	82	70-136	08/19/2022 0849
1,2,4-Trichlorobenzene	50	42		1	83	69-130	08/19/2022 0849
1,1,1-Trichloroethane	50	44		1	89	74-131	08/19/2022 0849
1,1,2-Trichloroethane	50	49		1	97	80-119	08/19/2022 0849

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51688-002
Batch: 51688
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	43		1	86	79-123	08/19/2022 0849
Trichlorofluoromethane	50	45		1	90	65-141	08/19/2022 0849
Vinyl chloride	50	50		1	100	58-137	08/19/2022 0849
Xylenes (total)	100	94		1	94	79-121	08/19/2022 0849

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		88	81-118
Bromofluorobenzene		101	85-114
Toluene-d8		91	89-112
Dibromofluoromethane		88	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51772-001
Batch: 51772
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	08/21/2022 1225
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	08/21/2022 1225
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	08/21/2022 1225
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	08/21/2022 1225
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	08/21/2022 1225
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	08/21/2022 1225
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	08/21/2022 1225
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	08/21/2022 1225
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	08/21/2022 1225
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	08/21/2022 1225
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	08/21/2022 1225
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ51772-001
Batch: 51772
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	08/21/2022 1225

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		97	81-118
Bromofluorobenzene		93	85-114
Toluene-d8		101	89-112
Dibromofluoromethane		100	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51772-002
Batch: 51772
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	110		1	113	39-160	08/21/2022 1119
Benzene	50	49		1	98	79-120	08/21/2022 1119
Bromodichloromethane	50	49		1	99	79-125	08/21/2022 1119
Bromoform	50	52		1	104	66-130	08/21/2022 1119
Bromomethane (Methyl bromide)	50	46		1	93	53-141	08/21/2022 1119
2-Butanone (MEK)	100	96		1	96	56-143	08/21/2022 1119
Carbon disulfide	50	48		1	97	64-133	08/21/2022 1119
Carbon tetrachloride	50	47		1	94	72-136	08/21/2022 1119
Chlorobenzene	50	50		1	99	82-118	08/21/2022 1119
Chloroethane	50	48		1	97	60-138	08/21/2022 1119
Chloroform	50	47		1	94	79-124	08/21/2022 1119
Chloromethane (Methyl chloride)	50	49		1	98	50-139	08/21/2022 1119
Cyclohexane	50	49		1	99	71-130	08/21/2022 1119
1,2-Dibromo-3-chloropropane (DBCP)	50	56		1	111	62-128	08/21/2022 1119
Dibromochloromethane	50	54		1	107	74-126	08/21/2022 1119
1,2-Dibromoethane (EDB)	50	51		1	101	77-121	08/21/2022 1119
1,2-Dichlorobenzene	50	51		1	102	80-119	08/21/2022 1119
1,3-Dichlorobenzene	50	51		1	102	80-119	08/21/2022 1119
1,4-Dichlorobenzene	50	48		1	96	79-118	08/21/2022 1119
Dichlorodifluoromethane	50	55		1	109	32-152	08/21/2022 1119
1,1-Dichloroethane	50	49		1	98	77-125	08/21/2022 1119
1,2-Dichloroethane	50	48		1	97	73-128	08/21/2022 1119
1,1-Dichloroethene	50	49		1	97	71-131	08/21/2022 1119
cis-1,2-Dichloroethene	50	49		1	97	78-123	08/21/2022 1119
trans-1,2-Dichloroethene	50	48		1	96	75-124	08/21/2022 1119
1,2-Dichloropropane	50	50		1	100	78-122	08/21/2022 1119
cis-1,3-Dichloropropene	50	54		1	107	75-124	08/21/2022 1119
trans-1,3-Dichloropropene	50	55		1	111	73-127	08/21/2022 1119
Ethylbenzene	50	52		1	103	79-121	08/21/2022 1119
2-Hexanone	100	99		1	99	57-139	08/21/2022 1119
Isopropylbenzene	50	56		1	112	72-131	08/21/2022 1119
Methyl acetate	50	54		1	108	56-136	08/21/2022 1119
Methyl tertiary butyl ether (MTBE)	50	54		1	108	71-124	08/21/2022 1119
4-Methyl-2-pentanone	100	99		1	99	67-130	08/21/2022 1119
Methylcyclohexane	50	51		1	102	72-132	08/21/2022 1119
Methylene chloride	50	48		1	95	74-124	08/21/2022 1119
Styrene	50	56		1	112	78-123	08/21/2022 1119
1,1,2,2-Tetrachloroethane	50	52		1	104	71-121	08/21/2022 1119
Tetrachloroethene	50	50		1	101	74-129	08/21/2022 1119
Toluene	50	54		1	107	80-121	08/21/2022 1119
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	48		1	97	70-136	08/21/2022 1119
1,2,4-Trichlorobenzene	50	49		1	99	69-130	08/21/2022 1119
1,1,1-Trichloroethane	50	48		1	95	74-131	08/21/2022 1119
1,1,2-Trichloroethane	50	51		1	101	80-119	08/21/2022 1119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51772-002
Batch: 51772
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	46		1	93	79-123	08/21/2022 1119
Trichlorofluoromethane	50	49		1	98	65-141	08/21/2022 1119
Vinyl chloride	50	51		1	101	58-137	08/21/2022 1119
Xylenes (total)	100	110		1	109	79-121	08/21/2022 1119

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		91	81-118
Bromofluorobenzene		96	85-114
Toluene-d8		100	89-112
Dibromofluoromethane		93	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ52303-001
Batch: 52303
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	08/25/2022 2041
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	08/25/2022 2041
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	08/25/2022 2041
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	08/25/2022 2041
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	08/25/2022 2041
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	08/25/2022 2041
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	08/25/2022 2041
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	08/25/2022 2041
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	08/25/2022 2041
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	08/25/2022 2041
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	08/25/2022 2041
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ52303-001
Batch: 52303
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	08/25/2022 2041

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		98	81-118
Bromofluorobenzene		103	85-114
Toluene-d8		99	89-112
Dibromofluoromethane		95	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ52303-002
Batch: 52303
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	150		1	153	39-160	08/25/2022 1934
Benzene	50	51		1	102	79-120	08/25/2022 1934
Bromodichloromethane	50	45		1	90	79-125	08/25/2022 1934
Bromoform	50	41		1	82	66-130	08/25/2022 1934
Bromomethane (Methyl bromide)	50	47		1	94	53-141	08/25/2022 1934
2-Butanone (MEK)	100	110		1	114	56-143	08/25/2022 1934
Carbon disulfide	50	48		1	97	64-133	08/25/2022 1934
Carbon tetrachloride	50	44		1	88	72-136	08/25/2022 1934
Chlorobenzene	50	45		1	91	82-118	08/25/2022 1934
Chloroethane	50	42		1	85	60-138	08/25/2022 1934
Chloroform	50	48		1	96	79-124	08/25/2022 1934
Chloromethane (Methyl chloride)	50	41		1	83	50-139	08/25/2022 1934
Cyclohexane	50	47		1	94	71-130	08/25/2022 1934
1,2-Dibromo-3-chloropropane (DBCP)	50	41		1	81	62-128	08/25/2022 1934
Dibromochloromethane	50	44		1	88	74-126	08/25/2022 1934
1,2-Dibromoethane (EDB)	50	48		1	95	77-121	08/25/2022 1934
1,2-Dichlorobenzene	50	44		1	89	80-119	08/25/2022 1934
1,3-Dichlorobenzene	50	45		1	91	80-119	08/25/2022 1934
1,4-Dichlorobenzene	50	44		1	88	79-118	08/25/2022 1934
Dichlorodifluoromethane	50	43		1	86	32-152	08/25/2022 1934
1,1-Dichloroethane	50	48		1	97	77-125	08/25/2022 1934
1,2-Dichloroethane	50	47		1	93	73-128	08/25/2022 1934
1,1-Dichloroethene	50	47		1	93	71-131	08/25/2022 1934
cis-1,2-Dichloroethene	50	49		1	99	78-123	08/25/2022 1934
trans-1,2-Dichloroethene	50	47		1	94	75-124	08/25/2022 1934
1,2-Dichloropropane	50	47		1	95	78-122	08/25/2022 1934
cis-1,3-Dichloropropene	50	48		1	96	75-124	08/25/2022 1934
trans-1,3-Dichloropropene	50	48		1	96	73-127	08/25/2022 1934
Ethylbenzene	50	48		1	95	79-121	08/25/2022 1934
2-Hexanone	100	110		1	113	57-139	08/25/2022 1934
Isopropylbenzene	50	47		1	93	72-131	08/25/2022 1934
Methyl acetate	50	54		1	107	56-136	08/25/2022 1934
Methyl tertiary butyl ether (MTBE)	50	51		1	103	71-124	08/25/2022 1934
4-Methyl-2-pentanone	100	100		1	102	67-130	08/25/2022 1934
Methylcyclohexane	50	45		1	90	72-132	08/25/2022 1934
Methylene chloride	50	47		1	94	74-124	08/25/2022 1934
Styrene	50	48		1	97	78-123	08/25/2022 1934
1,1,2,2-Tetrachloroethane	50	53		1	106	71-121	08/25/2022 1934
Tetrachloroethene	50	47		1	93	74-129	08/25/2022 1934
Toluene	50	49		1	99	80-121	08/25/2022 1934
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	40		1	80	70-136	08/25/2022 1934
1,2,4-Trichlorobenzene	50	42		1	84	69-130	08/25/2022 1934
1,1,1-Trichloroethane	50	46		1	92	74-131	08/25/2022 1934
1,1,2-Trichloroethane	50	48		1	97	80-119	08/25/2022 1934

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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ52303-002
Batch: 52303
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	44		1	87	79-123	08/25/2022 1934
Trichlorofluoromethane	50	44		1	88	65-141	08/25/2022 1934
Vinyl chloride	50	43		1	86	58-137	08/25/2022 1934
Xylenes (total)	100	96		1	96	79-121	08/25/2022 1934

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		89	81-118
Bromofluorobenzene		95	85-114
Toluene-d8		93	89-112
Dibromofluoromethane		90	80-119

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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ51087-001
Batch: 51087
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/15/2022 1300

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acenaphthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/18/2022 0942
Acenaphthylene	0.10	U	1	0.20	0.10	0.040	ug/L	08/18/2022 0942
Acetophenone	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
Anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/18/2022 0942
Atrazine	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
Benzaldehyde	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
Benzo(a)anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/18/2022 0942
Benzo(a)pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/18/2022 0942
Benzo(b)fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/18/2022 0942
Benzo(g,h,i)perylene	0.10	U	1	0.20	0.10	0.040	ug/L	08/18/2022 0942
Benzo(k)fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/18/2022 0942
1,1'-Biphenyl	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
4-Bromophenyl phenyl ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
Butyl benzyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
Caprolactam	2.0	U	1	3.0	2.0	1.0	ug/L	08/18/2022 0942
Carbazole	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
bis (2-Chloro-1-methylethyl) ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
4-Chloro-3-methyl phenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
4-Chloroaniline	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
bis(2-Chloroethoxy)methane	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
bis(2-Chloroethyl)ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
2-Chloronaphthalene	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
2-Chlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
4-Chlorophenyl phenyl ether	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
Chrysene	0.10	U	1	0.20	0.10	0.040	ug/L	08/18/2022 0942
Dibenzo(a,h)anthracene	0.10	U	1	0.20	0.10	0.040	ug/L	08/18/2022 0942
Dibenzofuran	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
3,3'-Dichlorobenzidine	3.5	U	1	4.0	3.5	1.8	ug/L	08/18/2022 0942
2,4-Dichlorophenol	0.50	U	1	1.6	0.50	0.25	ug/L	08/18/2022 0942
Diethylphthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
Dimethyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
2,4-Dimethylphenol	1.5	U	1	2.0	1.5	0.62	ug/L	08/18/2022 0942
Di-n-butyl phthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
4,6-Dinitro-2-methylphenol	2.0	U	1	4.0	2.0	1.0	ug/L	08/18/2022 0942
2,4-Dinitrophenol	2.0	U	1	4.0	2.0	1.0	ug/L	08/18/2022 0942
2,4-Dinitrotoluene	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
2,6-Dinitrotoluene	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
Di-n-octylphthalate	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
bis(2-Ethylhexyl)phthalate	3.0	U	1	4.0	3.0	1.5	ug/L	08/18/2022 0942
Fluoranthene	0.10	U	1	0.20	0.10	0.040	ug/L	08/18/2022 0942
Fluorene	0.10	U	1	0.20	0.10	0.040	ug/L	08/18/2022 0942
Hexachlorobenzene	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
Hexachlorobutadiene	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
Hexachlorocyclopentadiene	4.0	U	1	4.0	4.0	2.0	ug/L	08/18/2022 0942

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P = The RPD between two GC columns exceeds 40%
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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: XQ51087-001
Batch: 51087
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/15/2022 1300

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Hexachloroethane	0.40	U	1	0.80	0.40	0.17	ug/L	08/18/2022 0942
Indeno(1,2,3-c,d)pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/18/2022 0942
Isophorone	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
2-Methylnaphthalene	0.10	U	1	0.20	0.10	0.040	ug/L	08/18/2022 0942
2-Methylphenol	1.3	U	1	1.6	1.3	0.67	ug/L	08/18/2022 0942
3+4-Methylphenol	3.0	U	1	4.0	3.0	1.5	ug/L	08/18/2022 0942
Naphthalene	0.10	U	1	0.20	0.10	0.040	ug/L	08/18/2022 0942
2-Nitroaniline	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
3-Nitroaniline	2.0	U	1	3.0	2.0	1.0	ug/L	08/18/2022 0942
4-Nitroaniline	3.0	U	1	4.0	3.0	1.5	ug/L	08/18/2022 0942
Nitrobenzene	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
2-Nitrophenol	2.0	U	1	3.2	2.0	1.0	ug/L	08/18/2022 0942
4-Nitrophenol	4.0	U	1	5.0	4.0	2.0	ug/L	08/18/2022 0942
N-Nitrosodi-n-propylamine	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
N-Nitrosodiphenylamine (Diphenylamine)	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
Pentachlorophenol	4.0	U	1	5.0	4.0	2.0	ug/L	08/18/2022 0942
Phenanthrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/18/2022 0942
Phenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
Pyrene	0.10	U	1	0.20	0.10	0.040	ug/L	08/18/2022 0942
2,4,5-Trichlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942
2,4,6-Trichlorophenol	1.0	U	1	1.6	1.0	0.50	ug/L	08/18/2022 0942

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		74	44-119
2-Fluorophenol		47	19-119
Nitrobenzene-d5		68	44-120
Phenol-d5		57	10-115
Terphenyl-d14		100	50-134
2,4,6-Tribromophenol		78	43-140

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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51087-002
Batch: 51087
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/15/2022 1300

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acenaphthene	8.0	6.7		1	84	47-122	08/18/2022 1006
Acenaphthylene	8.0	7.5		1	93	41-130	08/18/2022 1006
Acetophenone	8.0	7.0		1	88	46-118	08/18/2022 1006
Anthracene	8.0	7.4		1	92	57-123	08/18/2022 1006
Atrazine	8.0	7.3		1	91	44-142	08/18/2022 1006
Benzaldehyde	8.0	4.9		1	61	20-115	08/18/2022 1006
Benzo(a)anthracene	8.0	7.8		1	98	58-125	08/18/2022 1006
Benzo(a)pyrene	8.0	8.0		1	100	54-128	08/18/2022 1006
Benzo(b)fluoranthene	8.0	7.9		1	98	53-131	08/18/2022 1006
Benzo(g,h,i)perylene	8.0	8.2		1	103	50-134	08/18/2022 1006
Benzo(k)fluoranthene	8.0	7.7		1	96	57-129	08/18/2022 1006
1,1'-Biphenyl	8.0	6.8		1	85	49-115	08/18/2022 1006
4-Bromophenyl phenyl ether	8.0	7.4		1	92	55-124	08/18/2022 1006
Butyl benzyl phthalate	8.0	8.6		1	107	53-134	08/18/2022 1006
Caprolactam	8.0	7.7		1	96	44-152	08/18/2022 1006
Carbazole	8.0	7.0		1	88	60-122	08/18/2022 1006
bis (2-Chloro-1-methylethyl) ether	8.0	6.7		1	83	37-130	08/18/2022 1006
4-Chloro-3-methyl phenol	8.0	7.2		1	89	52-119	08/18/2022 1006
4-Chloroaniline	8.0	5.6		1	70	33-117	08/18/2022 1006
bis(2-Chloroethoxy)methane	8.0	7.1		1	89	48-120	08/18/2022 1006
bis(2-Chloroethyl)ether	8.0	7.1		1	89	43-118	08/18/2022 1006
2-Chloronaphthalene	8.0	7.0		1	87	40-116	08/18/2022 1006
2-Chlorophenol	8.0	7.4		1	93	38-117	08/18/2022 1006
4-Chlorophenyl phenyl ether	8.0	7.3		1	92	53-121	08/18/2022 1006
Chrysene	8.0	7.4		1	93	59-123	08/18/2022 1006
Dibenzo(a,h)anthracene	8.0	7.9		1	99	51-134	08/18/2022 1006
Dibenzofuran	8.0	6.6		1	82	53-118	08/18/2022 1006
3,3'-Dichlorobenzidine	8.0	4.8		1	60	27-129	08/18/2022 1006
2,4-Dichlorophenol	8.0	7.0		1	88	47-121	08/18/2022 1006
Diethylphthalate	8.0	7.8		1	97	56-125	08/18/2022 1006
Dimethyl phthalate	8.0	7.7		1	97	45-127	08/18/2022 1006
2,4-Dimethylphenol	8.0	8.7		1	109	31-124	08/18/2022 1006
Di-n-butyl phthalate	8.0	8.3		1	104	59-127	08/18/2022 1006
4,6-Dinitro-2-methylphenol	8.0	6.3		1	79	44-137	08/18/2022 1006
2,4-Dinitrophenol	16	9.2		1	57	23-143	08/18/2022 1006
2,4-Dinitrotoluene	8.0	7.4		1	93	57-128	08/18/2022 1006
2,6-Dinitrotoluene	8.0	7.2		1	89	57-124	08/18/2022 1006
Di-n-octylphthalate	8.0	7.6		1	95	51-140	08/18/2022 1006
bis(2-Ethylhexyl)phthalate	8.0	9.8		1	122	55-135	08/18/2022 1006
Fluoranthene	8.0	7.8		1	97	57-128	08/18/2022 1006
Fluorene	8.0	6.9		1	87	52-124	08/18/2022 1006
Hexachlorobenzene	8.0	7.3		1	91	53-125	08/18/2022 1006
Hexachlorobutadiene	8.0	6.7		1	83	22-124	08/18/2022 1006
Hexachlorocyclopentadiene	40	26		1	66	16-96	08/18/2022 1006

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: XQ51087-002
Batch: 51087
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/15/2022 1300

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Hexachloroethane	8.0	6.4		1	80	21-115	08/18/2022 1006
Indeno(1,2,3-c,d)pyrene	8.0	7.8		1	98	52-134	08/18/2022 1006
Isophorone	8.0	6.5		1	82	42-124	08/18/2022 1006
2-Methylnaphthalene	8.0	7.0		1	88	40-121	08/18/2022 1006
2-Methylphenol	8.0	7.9		1	99	30-117	08/18/2022 1006
3+4-Methylphenol	8.0	7.5		1	94	29-110	08/18/2022 1006
Naphthalene	8.0	7.0		1	87	40-121	08/18/2022 1006
2-Nitroaniline	8.0	7.6		1	95	55-127	08/18/2022 1006
3-Nitroaniline	8.0	5.0		1	63	41-128	08/18/2022 1006
4-Nitroaniline	8.0	6.3		1	79	30-135	08/18/2022 1006
Nitrobenzene	8.0	5.8		1	73	45-121	08/18/2022 1006
2-Nitrophenol	8.0	7.0		1	87	47-123	08/18/2022 1006
4-Nitrophenol	16	13		1	82	53-130	08/18/2022 1006
N-Nitrosodi-n-propylamine	8.0	7.4		1	92	49-119	08/18/2022 1006
N-Nitrosodiphenylamine (Diphenylamine)	8.0	7.2		1	91	51-123	08/18/2022 1006
Pentachlorophenol	16	13		1	79	35-138	08/18/2022 1006
Phenanthrene	8.0	7.1		1	88	59-120	08/18/2022 1006
Phenol	8.0	7.6		1	94	49-117	08/18/2022 1006
Pyrene	8.0	7.8		1	97	57-126	08/18/2022 1006
2,4,5-Trichlorophenol	8.0	6.8		1	85	53-123	08/18/2022 1006
2,4,6-Trichlorophenol	8.0	7.3		1	91	50-125	08/18/2022 1006

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		85	44-119
2-Fluorophenol		83	19-119
Nitrobenzene-d5		83	44-120
Phenol-d5		86	10-115
Terphenyl-d14		95	50-134
2,4,6-Tribromophenol		90	43-140

LOQ = Limit of Quantitation
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LOD = Limit of Detection

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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Dissolved Gases - MB

Sample ID: XQ51425-001
Batch: 51425
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Ethane	5.0	U	1	10	5.0	2.5	ug/L	08/17/2022 1458
Ethene	5.0	U	1	10	5.0	2.5	ug/L	08/17/2022 1458
Methane	**3.1**	**J**	**1**	**10**	5.0	**2.5**	**ug/L**	**08/17/2022 1458**

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Dissolved Gases - LCS

Sample ID: XQ51425-002
Batch: 51425
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Ethane	550	550		1	99	74-131	08/17/2022 1252
Ethene	520	510		1	100	72-133	08/17/2022 1252
Methane	300	310		1	105	73-125	08/17/2022 1252

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Dissolved Gases - LCSD

Sample ID: XQ51425-003
Batch: 51425
Analytical Method: RSK - 175
Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Ethane	550	540		1	98	0.90	74-131	30	08/17/2022 1306
Ethene	520	510		1	99	0.71	72-133	30	08/17/2022 1306
Methane	300	310		1	106	0.90	73-125	30	08/17/2022 1306

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MB

Sample ID: XQ51351-001
Batch: 51351
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 08/18/2022 0043

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Arsenic	2.5	U	1	5.0	2.5	1.3	ug/L	08/31/2022 1655
Barium	2.5	U	1	5.0	2.5	1.3	ug/L	08/31/2022 1655
Cadmium	0.25	U	1	0.50	0.25	0.13	ug/L	08/31/2022 1655
Chromium	2.5	U	1	5.0	2.5	1.3	ug/L	08/31/2022 1655
Lead	0.50	U	1	1.0	0.50	0.25	ug/L	08/31/2022 1655
Selenium	2.5	U	1	5.0	2.5	1.3	ug/L	08/31/2022 1655
Silver	0.50	U	1	1.0	0.50	0.25	ug/L	08/31/2022 1655

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - LCS

Sample ID: XQ51351-002
Batch: 51351
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 08/18/2022 0043

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Arsenic	100	95		1	95	84-116	08/31/2022 1704
Barium	100	99		1	99	86-114	08/31/2022 1704
Cadmium	100	95		1	95	87-115	08/31/2022 1704
Chromium	100	100		1	104	85-116	08/31/2022 1704
Lead	100	100		1	104	88-115	08/31/2022 1704
Selenium	100	85		1	85	80-120	08/31/2022 1704
Silver	100	110		1	106	85-116	08/31/2022 1704

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - MB

Sample ID: XQ51007-001
Batch: 51007
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 08/13/2022 1352

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Mercury	0.18	U	1	0.20	0.18	0.091	ug/L	08/13/2022 1721

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Metals - LCS

Sample ID: XQ51007-002
Batch: 51007
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 08/13/2022 1352

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Mercury	2.0	2.0		1	102	82-119	08/13/2022 1724

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Chain of Custody
and
Miscellaneous Documents

Pace Analytical®

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Number 137986

Client: Terracon Consultants
Address: 2401 Brentwood Rd Suite 107
City: Raleigh | State: NC | Zip Code: 27604
Project Name: TAMP
Project No.: 7021P145
P.O. No.:

Report to Contact: Ethan.Dinwiddie@Terracon.com
Sampler's Signature: X [signature]
Printed Name: Taylor Savitski

Telephone No. / E-mail: Don.Malone@Terracon.com
Analysis (Attach list if more space is needed)

Quote No.: 25322
Page 1 of 1
Lot # Bar Code (lab use only): Cooler 3 of 4
XH12007
CSD

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	Grab/Comp	Matrix: Aqueous	Matrix: Solid	Matrix: Wipe	Matrix: Air	No of Containers by Preservative Type: Unpres.	H2SO4	HNO3	HCl	NaOH	NaOH Zn	Fixed Filtered	VOCs 8260	SVOCs 8270	RCRA 8 Metals	TOC 9060	Dissolved Gases RSK-175
MW-132	8/10	905	G	X				2	1	2	5				X	X	X	X	X
MW-106	↓	1035	G	X				2		1	3				X	X	X		
MW-116	↓	1150	G	X				2		1	3				X	X	X		
TB-08	↓	—	G	X							2				X	X	X		

Turn Around Time Required (Prior lab approval required for expedited TAT.): X Standard ☐ Rush (Specify)

Sample Disposal: ☐ Return to Client X Disposal by Lab

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison X Unknown

QC Requirements (Specify)

	Date	Time
1. Relinquished by [signature]	8/10	2000
2. Relinquished by		
3. Relinquished by		
4. Relinquished by [signature]	8.12.22	0930

	Date	Time
1. Received by		
2. Received by		
3. Received by		
4. Laboratory received by [signature]	8-12-22	0930

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Circle) Yes No Ice Pack
Receipt Temp. 2.0 °C
Temp Blank ☐ Y ☐ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME002N2-01

DC#_Title: ENV-FRM-WCOL-0286 v02_Samples Receipt Checklist (SRC)
Effective Date: 8/2/2022

Sample Receipt Checklist (SRC)

Client: Terracon

Cooler Inspected by/date: CER / 08/12/2022 Lot #: XH12007

Means of receipt: ☐ Pace ☐ Client ☐ UPS ☑ FedEx ☐ Other:

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: 22-1645 Chlorine Strip ID: NA Tested by: CER

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

2.0 / 2.0 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 8 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☑ Yes	☐ No	☐ NA	3. Were all coolers received at or below 6.0°C? If no, was Project Manager notified? PM was Notified by: phone / email / face-to-face (circle one).
☑ Yes	☐ No	☐ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC and all sample containers?
☑ Yes	☐ No		7. Was collection date & time listed on the COC and all sample containers?
☑ Yes	☐ No		8. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		9. Were tests to be performed listed on the COC?
☑ Yes	☐ No		10. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
☑ Yes	☐ No		11. Was adequate sample volume available?
☐ Yes	☑ No		12. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☑ Yes	☐ No		13. Were all samples containers accounted for? (No missing/excess)
☐ Yes	☑ No	☐ NA	14. Were VOA, 8015C and RSK-175 samples free of bubbles >"pea-size" (¼" or 6mm in diameter) in any of the VOA vials?
☑ Yes	☐ No	☐ NA	15. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	16. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	17. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☑ Yes	☐ No	☐ NA	18. Was the quote number listed on the container label? If yes, Quote # 25322

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA. ☐
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) -003(2)-004(2) were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Unique ID: NA.

Comments:

Qualtrax ID: 56360

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Page 1 of 1

Beacon Environmental
2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
1.410.838.8780

CERTIFICATE OF ANALYSIS

Beacon Proposal No.: 220705H02

Laboratory Work Order: 0006480R

Project Description:
Tarheel Army Missile Plant
Burlington, NC

Client PO No.: P00077053

Prepared for:
Ethan Dinwiddie
Terracon
2401 Brentwood Road, Suite 107
Raleigh, NC 27604

Ryan W. Schneider
Senior Project Manager

August 22, 2022
Report amended to report duplicate.

All data meet requirements as specified in the Beacon Environmental Quality Assurance Project Plan and the results relate only to the samples reported. The work performed was in accordance with ISO/IEC 17025:2017, except compounds reported with ∉ are not included in Beacon's scope of accreditation and all samples were analyzed within a 24-hour tune window. This report shall not be reproduced, except in full, without written approval of the laboratory. Release of the data contained in this data package has been authorized by the Laboratory Director or his signee, as verified by the following signatures:

Steven C. Thornley
Laboratory Director

Peter B. Kelly
Quality Manager

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1.410.838.8780

CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Sample Summary

Lab Sample ID	Client Sample ID	Received	Analysis	Matrix
0006480-01	Trip 1	08/01/2022	EPA 8260C	Air
Sampler Type:	Beacon Passive Sampler			
0006480-02	PSG-01	08/01/2022	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0006480-03	PSG-02	08/01/2022	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0006480-04	PSG-03	08/01/2022	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0006480-05	PSG-04	08/01/2022	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0006480-06	PSG-05	08/01/2022	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0006480-07	PSG-01 Dup	08/01/2022	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			

Project Completeness

Samples Received: 7
Samples Analyzed: 7

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Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Case Narrative

U.S. EPA Method 8260C

All samples were analyzed using thermal desorption-gas chromatography/mass spectrometry (TD-GC/MS) instrumentation following U.S. EPA Method 8260C, with laboratory results provided in nanograms (ng) and micrograms per cubic meter (µg/m^3). Laboratory QA/QC procedures included internal standards, surrogates, and blanks based on EPA Method 8260C. Analyses and reporting were under BEACON's Quality Assurance Project Plan.

Passive Soil-Gas Survey Notes

If sample locations are covered with or near the edge of an impervious surface (*e.g.*, asphalt or concrete), the concentrations of compounds in soil gas are higher than if the surfacing was not present. Therefore, the sample location conditions should be considered when comparing results between locations.

Survey findings are exclusive to this project and when the spatial relationships are compared with results of other BEACON Surveys it is necessary to incorporate information from both investigations (*e.g.*, depth to sources, soil types, porosity, soil moisture, presence of impervious surfacing, sample collection times).

Reporting Limits

The RLs represent a baseline above which results meet laboratory-determined limits of precision and accuracy. All reported results are within the calibration range. The project method quantitation limit (MQL) is the limit of quantitation (LOQ) as noted in the data tables. Beacon determined uptake rates for a suite of compounds with the Beacon sampler for sampling in air. Beacon calculated the uptake rates for the remaining compounds using Graham's Law of Diffusion. The reported data includes LOQ limits.

Project Details

Samples were received in proper condition and laboratory control parameters were met unless otherwise noted below. The work performed was in accordance with ISO/IEC 17025:2017, except compounds reported with ∉ are not included in Beacon's scope of accreditation and samples were analyzed within a 24-hour tune window.

End of Case Narrative

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Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Analytical Results

2203A Commerce Road, Suite 1
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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Summary of Compound Detections- Mass

Lab Sample ID: 0006480-02 | **PSG-01** Soil Gas | Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	File ID
Toluene	108-88-3	**56**		5.294	25	C22080140.D

Lab Sample ID: 0006480-06 | **PSG-05** Soil Gas | Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	File ID
∉ **TPH C10-C15**		**13,700**		9.810	5,000	C22080144.D

Lab Sample ID: 0006480-07 | **PSG-01 Dup** Soil Gas | Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	File ID
Benzene	71-43-2	**29**		3.627	25	C22081606.D
Toluene	108-88-3	**96**		5.294	25	C22081606.D

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Summary of Compound Detections- Concentration

Lab Sample ID: 0006480-02 | **PSG-01** Soil Gas | Method: EPA 8260C

Analyte	CAS#	Result (µg/m³)	Q	RT	LOQ (µg/m³)	File ID
Toluene	108-88-3	**15.8**		5.294	7.11	C22080140.D

Lab Sample ID: 0006480-06 | **PSG-05** Soil Gas | Method: EPA 8260C

Analyte	CAS#	Result (µg/m³)	Q	RT	LOQ (µg/m³)	File ID
∉ **TPH C10-C15**		**2,320**		9.810	848	C22080144.D

Lab Sample ID: 0006480-07 | **PSG-01 Dup** Soil Gas | Method: EPA 8260C

Analyte	CAS#	Result (µg/m³)	Q	RT	LOQ (µg/m³)	File ID
Benzene	71-43-2	**6.30**		3.627	5.37	C22081606.D
Toluene	108-88-3	**27.3**		5.294	7.11	C22081606.D

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Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Data Summary Table- Mass

Compound	Frequency	LOQ (ng)	Max Value (ng)
Toluene	1	25	56
TPH C10-C15	1	5,000	13,700

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Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Data Summary Table- Concentration

Compound	Frequency	LOQ (µg/m³)	Max Value (µg/m³)
Toluene	1	7.11	15.8
TPH C10-C15	1	848	2,320

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Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Detailed Analytical Results

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Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Detailed Analytical Results- Mass

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Lab Sample ID: 0006480-01

Trip 1

Air

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	08/02/2022 16:22	C22080139.D
1,1-Dichloroethene	75-35-4	<10		10	08/02/2022 16:22	C22080139.D
Methylene Chloride	75-09-2	<10		10	08/02/2022 16:22	C22080139.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	08/02/2022 16:22	C22080139.D
trans-1,2-Dichloroethene	156-60-5	<10		10	08/02/2022 16:22	C22080139.D
Methyl-t-butyl ether	1634-04-4	<25		25	08/02/2022 16:22	C22080139.D
1,1-Dichloroethane	75-34-3	<10		10	08/02/2022 16:22	C22080139.D
cis-1,2-Dichloroethene	156-59-2	<10		10	08/02/2022 16:22	C22080139.D
Chloroform	67-66-3	<10		10	08/02/2022 16:22	C22080139.D
1,2-Dichloroethane	107-06-2	<10		10	08/02/2022 16:22	C22080139.D
1,1,1-Trichloroethane	71-55-6	<10		10	08/02/2022 16:22	C22080139.D
Carbon Tetrachloride	56-23-5	<10		10	08/02/2022 16:22	C22080139.D
Benzene	71-43-2	<25		25	08/02/2022 16:22	C22080139.D
Trichloroethene	79-01-6	<10		10	08/02/2022 16:22	C22080139.D
1,4-Dioxane	123-91-1	<10		10	08/02/2022 16:22	C22080139.D
1,1,2-Trichloroethane	79-00-5	<10		10	08/02/2022 16:22	C22080139.D
Toluene	108-88-3	<25		25	08/02/2022 16:22	C22080139.D
1,2-Dibromoethane (EDB)	106-93-4	<10		10	08/02/2022 16:22	C22080139.D
Tetrachloroethene	127-18-4	<10		10	08/02/2022 16:22	C22080139.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	08/02/2022 16:22	C22080139.D
Chlorobenzene	108-90-7	<10		10	08/02/2022 16:22	C22080139.D
Ethylbenzene	100-41-4	<25		25	08/02/2022 16:22	C22080139.D
p & m-Xylene	179601-23-1	<25		25	08/02/2022 16:22	C22080139.D
o-Xylene	95-47-6	<25		25	08/02/2022 16:22	C22080139.D
1,2,3-Trichloropropane	96-18-4	<10		10	08/02/2022 16:22	C22080139.D
Isopropylbenzene	98-82-8	<25		25	08/02/2022 16:22	C22080139.D
1,3,5-Trimethylbenzene	108-67-8	<25		25	08/02/2022 16:22	C22080139.D
1,2,4-Trimethylbenzene	95-63-6	<25		25	08/02/2022 16:22	C22080139.D
1,3-Dichlorobenzene	541-73-1	<10		10	08/02/2022 16:22	C22080139.D
1,4-Dichlorobenzene	106-46-7	<10		10	08/02/2022 16:22	C22080139.D
1,2-Dichlorobenzene	95-50-1	<10		10	08/02/2022 16:22	C22080139.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	08/02/2022 16:22	C22080139.D
Naphthalene	91-20-3	<25		25	08/02/2022 16:22	C22080139.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	08/02/2022 16:22	C22080139.D
2-Methylnaphthalene	91-57-6	<25		25	08/02/2022 16:22	C22080139.D
∉ TPH C4-C9		<5,000		5,000	08/02/2022 16:22	C22080139.D
∉ TPH C10-C15		<5,000		5,000	08/02/2022 16:22	C22080139.D

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Lab Sample ID: 0006480-02

PSG-01

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	08/02/2022 16:47	C22080140.D
1,1-Dichloroethene	75-35-4	<10		10	08/02/2022 16:47	C22080140.D
Methylene Chloride	75-09-2	<10		10	08/02/2022 16:47	C22080140.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	08/02/2022 16:47	C22080140.D
trans-1,2-Dichloroethene	156-60-5	<10		10	08/02/2022 16:47	C22080140.D
Methyl-t-butyl ether	1634-04-4	<25		25	08/02/2022 16:47	C22080140.D
1,1-Dichloroethane	75-34-3	<10		10	08/02/2022 16:47	C22080140.D
cis-1,2-Dichloroethene	156-59-2	<10		10	08/02/2022 16:47	C22080140.D
Chloroform	67-66-3	<10		10	08/02/2022 16:47	C22080140.D
1,2-Dichloroethane	107-06-2	<10		10	08/02/2022 16:47	C22080140.D
1,1,1-Trichloroethane	71-55-6	<10		10	08/02/2022 16:47	C22080140.D
Carbon Tetrachloride	56-23-5	<10		10	08/02/2022 16:47	C22080140.D
Benzene	71-43-2	<25		25	08/02/2022 16:47	C22080140.D
Trichloroethene	79-01-6	<10		10	08/02/2022 16:47	C22080140.D
1,4-Dioxane	123-91-1	<10		10	08/02/2022 16:47	C22080140.D
1,1,2-Trichloroethane	79-00-5	<10		10	08/02/2022 16:47	C22080140.D
Toluene	108-88-3	**56**		25	08/02/2022 16:47	C22080140.D
1,2-Dibromoethane (EDB)	106-93-4	<10		10	08/02/2022 16:47	C22080140.D
Tetrachloroethene	127-18-4	<10		10	08/02/2022 16:47	C22080140.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	08/02/2022 16:47	C22080140.D
Chlorobenzene	108-90-7	<10		10	08/02/2022 16:47	C22080140.D
Ethylbenzene	100-41-4	<25		25	08/02/2022 16:47	C22080140.D
p & m-Xylene	179601-23-1	<25		25	08/02/2022 16:47	C22080140.D
o-Xylene	95-47-6	<25		25	08/02/2022 16:47	C22080140.D
1,2,3-Trichloropropane	96-18-4	<10		10	08/02/2022 16:47	C22080140.D
Isopropylbenzene	98-82-8	<25		25	08/02/2022 16:47	C22080140.D
1,3,5-Trimethylbenzene	108-67-8	<25		25	08/02/2022 16:47	C22080140.D
1,2,4-Trimethylbenzene	95-63-6	<25		25	08/02/2022 16:47	C22080140.D
1,3-Dichlorobenzene	541-73-1	<10		10	08/02/2022 16:47	C22080140.D
1,4-Dichlorobenzene	106-46-7	<10		10	08/02/2022 16:47	C22080140.D
1,2-Dichlorobenzene	95-50-1	<10		10	08/02/2022 16:47	C22080140.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	08/02/2022 16:47	C22080140.D
Naphthalene	91-20-3	<25		25	08/02/2022 16:47	C22080140.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	08/02/2022 16:47	C22080140.D
2-Methylnaphthalene	91-57-6	<25		25	08/02/2022 16:47	C22080140.D
∉ TPH C4-C9		<5,000		5,000	08/02/2022 16:47	C22080140.D
∉ TPH C10-C15		<5,000		5,000	08/02/2022 16:47	C22080140.D

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Lab Sample ID: 0006480-03

PSG-02

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	08/02/2022 17:13	C22080141.D
1,1-Dichloroethene	75-35-4	<10		10	08/02/2022 17:13	C22080141.D
Methylene Chloride	75-09-2	<10		10	08/02/2022 17:13	C22080141.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	08/02/2022 17:13	C22080141.D
trans-1,2-Dichloroethene	156-60-5	<10		10	08/02/2022 17:13	C22080141.D
Methyl-t-butyl ether	1634-04-4	<25		25	08/02/2022 17:13	C22080141.D
1,1-Dichloroethane	75-34-3	<10		10	08/02/2022 17:13	C22080141.D
cis-1,2-Dichloroethene	156-59-2	<10		10	08/02/2022 17:13	C22080141.D
Chloroform	67-66-3	<10		10	08/02/2022 17:13	C22080141.D
1,2-Dichloroethane	107-06-2	<10		10	08/02/2022 17:13	C22080141.D
1,1,1-Trichloroethane	71-55-6	<10		10	08/02/2022 17:13	C22080141.D
Carbon Tetrachloride	56-23-5	<10		10	08/02/2022 17:13	C22080141.D
Benzene	71-43-2	<25		25	08/02/2022 17:13	C22080141.D
Trichloroethene	79-01-6	<10		10	08/02/2022 17:13	C22080141.D
1,4-Dioxane	123-91-1	<10		10	08/02/2022 17:13	C22080141.D
1,1,2-Trichloroethane	79-00-5	<10		10	08/02/2022 17:13	C22080141.D
Toluene	108-88-3	<25		25	08/02/2022 17:13	C22080141.D
1,2-Dibromoethane (EDB)	106-93-4	<10		10	08/02/2022 17:13	C22080141.D
Tetrachloroethene	127-18-4	<10		10	08/02/2022 17:13	C22080141.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	08/02/2022 17:13	C22080141.D
Chlorobenzene	108-90-7	<10		10	08/02/2022 17:13	C22080141.D
Ethylbenzene	100-41-4	<25		25	08/02/2022 17:13	C22080141.D
p & m-Xylene	179601-23-1	<25		25	08/02/2022 17:13	C22080141.D
o-Xylene	95-47-6	<25		25	08/02/2022 17:13	C22080141.D
1,2,3-Trichloropropane	96-18-4	<10		10	08/02/2022 17:13	C22080141.D
Isopropylbenzene	98-82-8	<25		25	08/02/2022 17:13	C22080141.D
1,3,5-Trimethylbenzene	108-67-8	<25		25	08/02/2022 17:13	C22080141.D
1,2,4-Trimethylbenzene	95-63-6	<25		25	08/02/2022 17:13	C22080141.D
1,3-Dichlorobenzene	541-73-1	<10		10	08/02/2022 17:13	C22080141.D
1,4-Dichlorobenzene	106-46-7	<10		10	08/02/2022 17:13	C22080141.D
1,2-Dichlorobenzene	95-50-1	<10		10	08/02/2022 17:13	C22080141.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	08/02/2022 17:13	C22080141.D
Naphthalene	91-20-3	<25		25	08/02/2022 17:13	C22080141.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	08/02/2022 17:13	C22080141.D
2-Methylnaphthalene	91-57-6	<25		25	08/02/2022 17:13	C22080141.D
∉ TPH C4-C9		<5,000		5,000	08/02/2022 17:13	C22080141.D
∉ TPH C10-C15		<5,000		5,000	08/02/2022 17:13	C22080141.D

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Lab Sample ID: 0006480-04

PSG-03

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	08/02/2022 17:39	C22080142.D
1,1-Dichloroethene	75-35-4	<10		10	08/02/2022 17:39	C22080142.D
Methylene Chloride	75-09-2	<10		10	08/02/2022 17:39	C22080142.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	08/02/2022 17:39	C22080142.D
trans-1,2-Dichloroethene	156-60-5	<10		10	08/02/2022 17:39	C22080142.D
Methyl-t-butyl ether	1634-04-4	<25		25	08/02/2022 17:39	C22080142.D
1,1-Dichloroethane	75-34-3	<10		10	08/02/2022 17:39	C22080142.D
cis-1,2-Dichloroethene	156-59-2	<10		10	08/02/2022 17:39	C22080142.D
Chloroform	67-66-3	<10		10	08/02/2022 17:39	C22080142.D
1,2-Dichloroethane	107-06-2	<10		10	08/02/2022 17:39	C22080142.D
1,1,1-Trichloroethane	71-55-6	<10		10	08/02/2022 17:39	C22080142.D
Carbon Tetrachloride	56-23-5	<10		10	08/02/2022 17:39	C22080142.D
Benzene	71-43-2	<25		25	08/02/2022 17:39	C22080142.D
Trichloroethene	79-01-6	<10		10	08/02/2022 17:39	C22080142.D
1,4-Dioxane	123-91-1	<10		10	08/02/2022 17:39	C22080142.D
1,1,2-Trichloroethane	79-00-5	<10		10	08/02/2022 17:39	C22080142.D
Toluene	108-88-3	<25		25	08/02/2022 17:39	C22080142.D
1,2-Dibromoethane (EDB)	106-93-4	<10		10	08/02/2022 17:39	C22080142.D
Tetrachloroethene	127-18-4	<10		10	08/02/2022 17:39	C22080142.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	08/02/2022 17:39	C22080142.D
Chlorobenzene	108-90-7	<10		10	08/02/2022 17:39	C22080142.D
Ethylbenzene	100-41-4	<25		25	08/02/2022 17:39	C22080142.D
p & m-Xylene	179601-23-1	<25		25	08/02/2022 17:39	C22080142.D
o-Xylene	95-47-6	<25		25	08/02/2022 17:39	C22080142.D
1,2,3-Trichloropropane	96-18-4	<10		10	08/02/2022 17:39	C22080142.D
Isopropylbenzene	98-82-8	<25		25	08/02/2022 17:39	C22080142.D
1,3,5-Trimethylbenzene	108-67-8	<25		25	08/02/2022 17:39	C22080142.D
1,2,4-Trimethylbenzene	95-63-6	<25		25	08/02/2022 17:39	C22080142.D
1,3-Dichlorobenzene	541-73-1	<10		10	08/02/2022 17:39	C22080142.D
1,4-Dichlorobenzene	106-46-7	<10		10	08/02/2022 17:39	C22080142.D
1,2-Dichlorobenzene	95-50-1	<10		10	08/02/2022 17:39	C22080142.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	08/02/2022 17:39	C22080142.D
Naphthalene	91-20-3	<25		25	08/02/2022 17:39	C22080142.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	08/02/2022 17:39	C22080142.D
2-Methylnaphthalene	91-57-6	<25		25	08/02/2022 17:39	C22080142.D
∉ TPH C4-C9		<5,000		5,000	08/02/2022 17:39	C22080142.D
∉ TPH C10-C15		<5,000		5,000	08/02/2022 17:39	C22080142.D

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Forest Hill, MD 21050 USA
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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Lab Sample ID: 0006480-05

PSG-04

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	08/02/2022 18:05	C22080143.D
1,1-Dichloroethene	75-35-4	<10		10	08/02/2022 18:05	C22080143.D
Methylene Chloride	75-09-2	<10		10	08/02/2022 18:05	C22080143.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	08/02/2022 18:05	C22080143.D
trans-1,2-Dichloroethene	156-60-5	<10		10	08/02/2022 18:05	C22080143.D
Methyl-t-butyl ether	1634-04-4	<25		25	08/02/2022 18:05	C22080143.D
1,1-Dichloroethane	75-34-3	<10		10	08/02/2022 18:05	C22080143.D
cis-1,2-Dichloroethene	156-59-2	<10		10	08/02/2022 18:05	C22080143.D
Chloroform	67-66-3	<10		10	08/02/2022 18:05	C22080143.D
1,2-Dichloroethane	107-06-2	<10		10	08/02/2022 18:05	C22080143.D
1,1,1-Trichloroethane	71-55-6	<10		10	08/02/2022 18:05	C22080143.D
Carbon Tetrachloride	56-23-5	<10		10	08/02/2022 18:05	C22080143.D
Benzene	71-43-2	<25		25	08/02/2022 18:05	C22080143.D
Trichloroethene	79-01-6	<10		10	08/02/2022 18:05	C22080143.D
1,4-Dioxane	123-91-1	<10		10	08/02/2022 18:05	C22080143.D
1,1,2-Trichloroethane	79-00-5	<10		10	08/02/2022 18:05	C22080143.D
Toluene	108-88-3	<25		25	08/02/2022 18:05	C22080143.D
1,2-Dibromoethane (EDB)	106-93-4	<10		10	08/02/2022 18:05	C22080143.D
Tetrachloroethene	127-18-4	<10		10	08/02/2022 18:05	C22080143.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	08/02/2022 18:05	C22080143.D
Chlorobenzene	108-90-7	<10		10	08/02/2022 18:05	C22080143.D
Ethylbenzene	100-41-4	<25		25	08/02/2022 18:05	C22080143.D
p & m-Xylene	179601-23-1	<25		25	08/02/2022 18:05	C22080143.D
o-Xylene	95-47-6	<25		25	08/02/2022 18:05	C22080143.D
1,2,3-Trichloropropane	96-18-4	<10		10	08/02/2022 18:05	C22080143.D
Isopropylbenzene	98-82-8	<25		25	08/02/2022 18:05	C22080143.D
1,3,5-Trimethylbenzene	108-67-8	<25		25	08/02/2022 18:05	C22080143.D
1,2,4-Trimethylbenzene	95-63-6	<25		25	08/02/2022 18:05	C22080143.D
1,3-Dichlorobenzene	541-73-1	<10		10	08/02/2022 18:05	C22080143.D
1,4-Dichlorobenzene	106-46-7	<10		10	08/02/2022 18:05	C22080143.D
1,2-Dichlorobenzene	95-50-1	<10		10	08/02/2022 18:05	C22080143.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	08/02/2022 18:05	C22080143.D
Naphthalene	91-20-3	<25		25	08/02/2022 18:05	C22080143.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	08/02/2022 18:05	C22080143.D
2-Methylnaphthalene	91-57-6	<25		25	08/02/2022 18:05	C22080143.D
∉ TPH C4-C9		<5,000		5,000	08/02/2022 18:05	C22080143.D
∉ TPH C10-C15		<5,000		5,000	08/02/2022 18:05	C22080143.D

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Lab Sample ID: 0006480-06

PSG-05

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	08/02/2022 18:32	C22080144.D
1,1-Dichloroethene	75-35-4	<10		10	08/02/2022 18:32	C22080144.D
Methylene Chloride	75-09-2	<10		10	08/02/2022 18:32	C22080144.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	08/02/2022 18:32	C22080144.D
trans-1,2-Dichloroethene	156-60-5	<10		10	08/02/2022 18:32	C22080144.D
Methyl-t-butyl ether	1634-04-4	<25		25	08/02/2022 18:32	C22080144.D
1,1-Dichloroethane	75-34-3	<10		10	08/02/2022 18:32	C22080144.D
cis-1,2-Dichloroethene	156-59-2	<10		10	08/02/2022 18:32	C22080144.D
Chloroform	67-66-3	<10		10	08/02/2022 18:32	C22080144.D
1,2-Dichloroethane	107-06-2	<10		10	08/02/2022 18:32	C22080144.D
1,1,1-Trichloroethane	71-55-6	<10		10	08/02/2022 18:32	C22080144.D
Carbon Tetrachloride	56-23-5	<10		10	08/02/2022 18:32	C22080144.D
Benzene	71-43-2	<25		25	08/02/2022 18:32	C22080144.D
Trichloroethene	79-01-6	<10		10	08/02/2022 18:32	C22080144.D
1,4-Dioxane	123-91-1	<10		10	08/02/2022 18:32	C22080144.D
1,1,2-Trichloroethane	79-00-5	<10		10	08/02/2022 18:32	C22080144.D
Toluene	108-88-3	<25		25	08/02/2022 18:32	C22080144.D
1,2-Dibromoethane (EDB)	106-93-4	<10		10	08/02/2022 18:32	C22080144.D
Tetrachloroethene	127-18-4	<10		10	08/02/2022 18:32	C22080144.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	08/02/2022 18:32	C22080144.D
Chlorobenzene	108-90-7	<10		10	08/02/2022 18:32	C22080144.D
Ethylbenzene	100-41-4	<25		25	08/02/2022 18:32	C22080144.D
p & m-Xylene	179601-23-1	<25		25	08/02/2022 18:32	C22080144.D
o-Xylene	95-47-6	<25		25	08/02/2022 18:32	C22080144.D
1,2,3-Trichloropropane	96-18-4	<10		10	08/02/2022 18:32	C22080144.D
Isopropylbenzene	98-82-8	<25		25	08/02/2022 18:32	C22080144.D
1,3,5-Trimethylbenzene	108-67-8	<25		25	08/02/2022 18:32	C22080144.D
1,2,4-Trimethylbenzene	95-63-6	<25		25	08/02/2022 18:32	C22080144.D
1,3-Dichlorobenzene	541-73-1	<10		10	08/02/2022 18:32	C22080144.D
1,4-Dichlorobenzene	106-46-7	<10		10	08/02/2022 18:32	C22080144.D
1,2-Dichlorobenzene	95-50-1	<10		10	08/02/2022 18:32	C22080144.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	08/02/2022 18:32	C22080144.D
Naphthalene	91-20-3	<25		25	08/02/2022 18:32	C22080144.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	08/02/2022 18:32	C22080144.D
2-Methylnaphthalene	91-57-6	<25		25	08/02/2022 18:32	C22080144.D
∉ TPH C4-C9		<5,000		5,000	08/02/2022 18:32	C22080144.D
∉ **TPH C10-C15**		**13,700**		5,000	08/02/2022 18:32	C22080144.D

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Lab Sample ID: 0006480-07

PSG-01 Dup

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	08/16/2022 15:38	C22081606.D
1,1-Dichloroethene	75-35-4	<10		10	08/16/2022 15:38	C22081606.D
Methylene Chloride	75-09-2	<10		10	08/16/2022 15:38	C22081606.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	08/16/2022 15:38	C22081606.D
trans-1,2-Dichloroethene	156-60-5	<10		10	08/16/2022 15:38	C22081606.D
Methyl-t-butyl ether	1634-04-4	<25		25	08/16/2022 15:38	C22081606.D
1,1-Dichloroethane	75-34-3	<10		10	08/16/2022 15:38	C22081606.D
cis-1,2-Dichloroethene	156-59-2	<10		10	08/16/2022 15:38	C22081606.D
Chloroform	67-66-3	<10		10	08/16/2022 15:38	C22081606.D
1,2-Dichloroethane	107-06-2	<10		10	08/16/2022 15:38	C22081606.D
1,1,1-Trichloroethane	71-55-6	<10		10	08/16/2022 15:38	C22081606.D
Carbon Tetrachloride	56-23-5	<10		10	08/16/2022 15:38	C22081606.D
Benzene	71-43-2	**29**		25	08/16/2022 15:38	C22081606.D
Trichloroethene	79-01-6	<10		10	08/16/2022 15:38	C22081606.D
1,4-Dioxane	123-91-1	<10		10	08/16/2022 15:38	C22081606.D
1,1,2-Trichloroethane	79-00-5	<10		10	08/16/2022 15:38	C22081606.D
Toluene	108-88-3	**96**		25	08/16/2022 15:38	C22081606.D
1,2-Dibromoethane (EDB)	106-93-4	<10		10	08/16/2022 15:38	C22081606.D
Tetrachloroethene	127-18-4	<10		10	08/16/2022 15:38	C22081606.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	08/16/2022 15:38	C22081606.D
Chlorobenzene	108-90-7	<10		10	08/16/2022 15:38	C22081606.D
Ethylbenzene	100-41-4	<25		25	08/16/2022 15:38	C22081606.D
p & m-Xylene	179601-23-1	<25		25	08/16/2022 15:38	C22081606.D
o-Xylene	95-47-6	<25		25	08/16/2022 15:38	C22081606.D
1,2,3-Trichloropropane	96-18-4	<10		10	08/16/2022 15:38	C22081606.D
Isopropylbenzene	98-82-8	<25		25	08/16/2022 15:38	C22081606.D
1,3,5-Trimethylbenzene	108-67-8	<25		25	08/16/2022 15:38	C22081606.D
1,2,4-Trimethylbenzene	95-63-6	<25		25	08/16/2022 15:38	C22081606.D
1,3-Dichlorobenzene	541-73-1	<10		10	08/16/2022 15:38	C22081606.D
1,4-Dichlorobenzene	106-46-7	<10		10	08/16/2022 15:38	C22081606.D
1,2-Dichlorobenzene	95-50-1	<10		10	08/16/2022 15:38	C22081606.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	08/16/2022 15:38	C22081606.D
Naphthalene	91-20-3	<25		25	08/16/2022 15:38	C22081606.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	08/16/2022 15:38	C22081606.D
2-Methylnaphthalene	91-57-6	<25		25	08/16/2022 15:38	C22081606.D
∉ TPH C4-C9		<5,000		5,000	08/16/2022 15:38	C22081606.D
∉ TPH C10-C15		<5,000		5,000	08/16/2022 15:38	C22081606.D

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Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Detailed Analytical Results- Concentration

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Lab Sample ID: 0006480-01

Trip 1

Air

Method: EPA 8260C

Analyte	CAS#	Result (µg/m³)	Q	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<1.40		1.40	08/02/2022 16:22	C22080139.D
1,1-Dichloroethene	75-35-4	<3.45		3.45	08/02/2022 16:22	C22080139.D
Methylene Chloride	75-09-2	<3.25		3.25	08/02/2022 16:22	C22080139.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<1.28		1.28	08/02/2022 16:22	C22080139.D
trans-1,2-Dichloroethene	156-60-5	<2.59		2.59	08/02/2022 16:22	C22080139.D
Methyl-t-butyl ether	1634-04-4	<5.69		5.69	08/02/2022 16:22	C22080139.D
1,1-Dichloroethane	75-34-3	<1.34		1.34	08/02/2022 16:22	C22080139.D
cis-1,2-Dichloroethene	156-59-2	<2.15		2.15	08/02/2022 16:22	C22080139.D
Chloroform	67-66-3	<3.25		3.25	08/02/2022 16:22	C22080139.D
1,2-Dichloroethane	107-06-2	<2.03		2.03	08/02/2022 16:22	C22080139.D
1,1,1-Trichloroethane	71-55-6	<1.08		1.08	08/02/2022 16:22	C22080139.D
Carbon Tetrachloride	56-23-5	<2.65		2.65	08/02/2022 16:22	C22080139.D
Benzene	71-43-2	<5.37		5.37	08/02/2022 16:22	C22080139.D
Trichloroethene	79-01-6	<3.45		3.45	08/02/2022 16:22	C22080139.D
1,4-Dioxane	123-91-1	<2.77		2.77	08/02/2022 16:22	C22080139.D
1,1,2-Trichloroethane	79-00-5	<3.45		3.45	08/02/2022 16:22	C22080139.D
Toluene	108-88-3	<7.11		7.11	08/02/2022 16:22	C22080139.D
1,2-Dibromoethane (EDB)	106-93-4	<2.92		2.92	08/02/2022 16:22	C22080139.D
Tetrachloroethene	127-18-4	<2.77		2.77	08/02/2022 16:22	C22080139.D
1,1,1,2-Tetrachloroethane	630-20-6	<2.77		2.77	08/02/2022 16:22	C22080139.D
Chlorobenzene	108-90-7	<1.34		1.34	08/02/2022 16:22	C22080139.D
Ethylbenzene	100-41-4	<3.35		3.35	08/02/2022 16:22	C22080139.D
p & m-Xylene	179601-23-1	<3.23		3.23	08/02/2022 16:22	C22080139.D
o-Xylene	95-47-6	<3.23		3.23	08/02/2022 16:22	C22080139.D
1,2,3-Trichloropropane	96-18-4	<1.52		1.52	08/02/2022 16:22	C22080139.D
Isopropylbenzene	98-82-8	<3.43		3.43	08/02/2022 16:22	C22080139.D
1,3,5-Trimethylbenzene	108-67-8	<3.43		3.43	08/02/2022 16:22	C22080139.D
1,2,4-Trimethylbenzene	95-63-6	<3.43		3.43	08/02/2022 16:22	C22080139.D
1,3-Dichlorobenzene	541-73-1	<1.52		1.52	08/02/2022 16:22	C22080139.D
1,4-Dichlorobenzene	106-46-7	<1.52		1.52	08/02/2022 16:22	C22080139.D
1,2-Dichlorobenzene	95-50-1	<1.52		1.52	08/02/2022 16:22	C22080139.D
1,2,4-Trichlorobenzene	120-82-1	<2.92		2.92	08/02/2022 16:22	C22080139.D
Naphthalene	91-20-3	<3.56		3.56	08/02/2022 16:22	C22080139.D
1,2,3-Trichlorobenzene	87-61-6	<2.92		2.92	08/02/2022 16:22	C22080139.D
2-Methylnaphthalene	91-57-6	<3.74		3.74	08/02/2022 16:22	C22080139.D
∉ TPH C4-C9		<964		964	08/02/2022 16:22	C22080139.D
∉ TPH C10-C15		<824		824	08/02/2022 16:22	C22080139.D

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Lab Sample ID: 0006480-02

PSG-01

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (µg/m³)	Q	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<1.40		1.40	08/02/2022 16:47	C22080140.D
1,1-Dichloroethene	75-35-4	<3.45		3.45	08/02/2022 16:47	C22080140.D
Methylene Chloride	75-09-2	<3.25		3.25	08/02/2022 16:47	C22080140.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<1.28		1.28	08/02/2022 16:47	C22080140.D
trans-1,2-Dichloroethene	156-60-5	<2.59		2.59	08/02/2022 16:47	C22080140.D
Methyl-t-butyl ether	1634-04-4	<5.69		5.69	08/02/2022 16:47	C22080140.D
1,1-Dichloroethane	75-34-3	<1.34		1.34	08/02/2022 16:47	C22080140.D
cis-1,2-Dichloroethene	156-59-2	<2.15		2.15	08/02/2022 16:47	C22080140.D
Chloroform	67-66-3	<3.25		3.25	08/02/2022 16:47	C22080140.D
1,2-Dichloroethane	107-06-2	<2.03		2.03	08/02/2022 16:47	C22080140.D
1,1,1-Trichloroethane	71-55-6	<1.08		1.08	08/02/2022 16:47	C22080140.D
Carbon Tetrachloride	56-23-5	<2.65		2.65	08/02/2022 16:47	C22080140.D
Benzene	71-43-2	<5.37		5.37	08/02/2022 16:47	C22080140.D
Trichloroethene	79-01-6	<3.45		3.45	08/02/2022 16:47	C22080140.D
1,4-Dioxane	123-91-1	<2.77		2.77	08/02/2022 16:47	C22080140.D
1,1,2-Trichloroethane	79-00-5	<3.45		3.45	08/02/2022 16:47	C22080140.D
Toluene	108-88-3	**15.8**		7.11	08/02/2022 16:47	C22080140.D
1,2-Dibromoethane (EDB)	106-93-4	<2.92		2.92	08/02/2022 16:47	C22080140.D
Tetrachloroethene	127-18-4	<2.77		2.77	08/02/2022 16:47	C22080140.D
1,1,1,2-Tetrachloroethane	630-20-6	<2.77		2.77	08/02/2022 16:47	C22080140.D
Chlorobenzene	108-90-7	<1.34		1.34	08/02/2022 16:47	C22080140.D
Ethylbenzene	100-41-4	<3.35		3.35	08/02/2022 16:47	C22080140.D
p & m-Xylene	179601-23-1	<3.23		3.23	08/02/2022 16:47	C22080140.D
o-Xylene	95-47-6	<3.23		3.23	08/02/2022 16:47	C22080140.D
1,2,3-Trichloropropane	96-18-4	<1.52		1.52	08/02/2022 16:47	C22080140.D
Isopropylbenzene	98-82-8	<3.43		3.43	08/02/2022 16:47	C22080140.D
1,3,5-Trimethylbenzene	108-67-8	<3.43		3.43	08/02/2022 16:47	C22080140.D
1,2,4-Trimethylbenzene	95-63-6	<3.43		3.43	08/02/2022 16:47	C22080140.D
1,3-Dichlorobenzene	541-73-1	<1.52		1.52	08/02/2022 16:47	C22080140.D
1,4-Dichlorobenzene	106-46-7	<1.52		1.52	08/02/2022 16:47	C22080140.D
1,2-Dichlorobenzene	95-50-1	<1.52		1.52	08/02/2022 16:47	C22080140.D
1,2,4-Trichlorobenzene	120-82-1	<2.92		2.92	08/02/2022 16:47	C22080140.D
Naphthalene	91-20-3	<3.56		3.56	08/02/2022 16:47	C22080140.D
1,2,3-Trichlorobenzene	87-61-6	<2.92		2.92	08/02/2022 16:47	C22080140.D
2-Methylnaphthalene	91-57-6	<3.74		3.74	08/02/2022 16:47	C22080140.D
⋹ TPH C4-C9		<964		964	08/02/2022 16:47	C22080140.D
⋹ TPH C10-C15		<824		824	08/02/2022 16:47	C22080140.D

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Lab Sample ID: 0006480-03

PSG-02

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (µg/m³)	Q	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<1.40		1.40	08/02/2022 17:13	C22080141.D
1,1-Dichloroethene	75-35-4	<3.45		3.45	08/02/2022 17:13	C22080141.D
Methylene Chloride	75-09-2	<3.25		3.25	08/02/2022 17:13	C22080141.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<1.28		1.28	08/02/2022 17:13	C22080141.D
trans-1,2-Dichloroethene	156-60-5	<2.59		2.59	08/02/2022 17:13	C22080141.D
Methyl-t-butyl ether	1634-04-4	<5.69		5.69	08/02/2022 17:13	C22080141.D
1,1-Dichloroethane	75-34-3	<1.34		1.34	08/02/2022 17:13	C22080141.D
cis-1,2-Dichloroethene	156-59-2	<2.15		2.15	08/02/2022 17:13	C22080141.D
Chloroform	67-66-3	<3.25		3.25	08/02/2022 17:13	C22080141.D
1,2-Dichloroethane	107-06-2	<2.03		2.03	08/02/2022 17:13	C22080141.D
1,1,1-Trichloroethane	71-55-6	<1.08		1.08	08/02/2022 17:13	C22080141.D
Carbon Tetrachloride	56-23-5	<2.65		2.65	08/02/2022 17:13	C22080141.D
Benzene	71-43-2	<5.37		5.37	08/02/2022 17:13	C22080141.D
Trichloroethene	79-01-6	<3.45		3.45	08/02/2022 17:13	C22080141.D
1,4-Dioxane	123-91-1	<2.77		2.77	08/02/2022 17:13	C22080141.D
1,1,2-Trichloroethane	79-00-5	<3.45		3.45	08/02/2022 17:13	C22080141.D
Toluene	108-88-3	<7.11		7.11	08/02/2022 17:13	C22080141.D
1,2-Dibromoethane (EDB)	106-93-4	<2.92		2.92	08/02/2022 17:13	C22080141.D
Tetrachloroethene	127-18-4	<2.77		2.77	08/02/2022 17:13	C22080141.D
1,1,1,2-Tetrachloroethane	630-20-6	<2.77		2.77	08/02/2022 17:13	C22080141.D
Chlorobenzene	108-90-7	<1.34		1.34	08/02/2022 17:13	C22080141.D
Ethylbenzene	100-41-4	<3.35		3.35	08/02/2022 17:13	C22080141.D
p & m-Xylene	179601-23-1	<3.23		3.23	08/02/2022 17:13	C22080141.D
o-Xylene	95-47-6	<3.23		3.23	08/02/2022 17:13	C22080141.D
1,2,3-Trichloropropane	96-18-4	<1.52		1.52	08/02/2022 17:13	C22080141.D
Isopropylbenzene	98-82-8	<3.43		3.43	08/02/2022 17:13	C22080141.D
1,3,5-Trimethylbenzene	108-67-8	<3.43		3.43	08/02/2022 17:13	C22080141.D
1,2,4-Trimethylbenzene	95-63-6	<3.43		3.43	08/02/2022 17:13	C22080141.D
1,3-Dichlorobenzene	541-73-1	<1.52		1.52	08/02/2022 17:13	C22080141.D
1,4-Dichlorobenzene	106-46-7	<1.52		1.52	08/02/2022 17:13	C22080141.D
1,2-Dichlorobenzene	95-50-1	<1.52		1.52	08/02/2022 17:13	C22080141.D
1,2,4-Trichlorobenzene	120-82-1	<2.92		2.92	08/02/2022 17:13	C22080141.D
Naphthalene	91-20-3	<3.56		3.56	08/02/2022 17:13	C22080141.D
1,2,3-Trichlorobenzene	87-61-6	<2.92		2.92	08/02/2022 17:13	C22080141.D
2-Methylnaphthalene	91-57-6	<3.74		3.74	08/02/2022 17:13	C22080141.D
⋹ TPH C4-C9		<964		964	08/02/2022 17:13	C22080141.D
⋹ TPH C10-C15		<824		824	08/02/2022 17:13	C22080141.D

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Lab Sample ID: 0006480-04

PSG-03

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (µg/m³)	Q	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<1.44		1.44	08/02/2022 17:39	C22080142.D
1,1-Dichloroethene	75-35-4	<3.53		3.53	08/02/2022 17:39	C22080142.D
Methylene Chloride	75-09-2	<3.33		3.33	08/02/2022 17:39	C22080142.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<1.31		1.31	08/02/2022 17:39	C22080142.D
trans-1,2-Dichloroethene	156-60-5	<2.65		2.65	08/02/2022 17:39	C22080142.D
Methyl-t-butyl ether	1634-04-4	<5.83		5.83	08/02/2022 17:39	C22080142.D
1,1-Dichloroethane	75-34-3	<1.37		1.37	08/02/2022 17:39	C22080142.D
cis-1,2-Dichloroethene	156-59-2	<2.20		2.20	08/02/2022 17:39	C22080142.D
Chloroform	67-66-3	<3.33		3.33	08/02/2022 17:39	C22080142.D
1,2-Dichloroethane	107-06-2	<2.08		2.08	08/02/2022 17:39	C22080142.D
1,1,1-Trichloroethane	71-55-6	<1.11		1.11	08/02/2022 17:39	C22080142.D
Carbon Tetrachloride	56-23-5	<2.71		2.71	08/02/2022 17:39	C22080142.D
Benzene	71-43-2	<5.50		5.50	08/02/2022 17:39	C22080142.D
Trichloroethene	79-01-6	<3.53		3.53	08/02/2022 17:39	C22080142.D
1,4-Dioxane	123-91-1	<2.84		2.84	08/02/2022 17:39	C22080142.D
1,1,2-Trichloroethane	79-00-5	<3.53		3.53	08/02/2022 17:39	C22080142.D
Toluene	108-88-3	<7.28		7.28	08/02/2022 17:39	C22080142.D
1,2-Dibromoethane (EDB)	106-93-4	<2.99		2.99	08/02/2022 17:39	C22080142.D
Tetrachloroethene	127-18-4	<2.84		2.84	08/02/2022 17:39	C22080142.D
1,1,1,2-Tetrachloroethane	630-20-6	<2.84		2.84	08/02/2022 17:39	C22080142.D
Chlorobenzene	108-90-7	<1.37		1.37	08/02/2022 17:39	C22080142.D
Ethylbenzene	100-41-4	<3.43		3.43	08/02/2022 17:39	C22080142.D
p & m-Xylene	179601-23-1	<3.31		3.31	08/02/2022 17:39	C22080142.D
o-Xylene	95-47-6	<3.31		3.31	08/02/2022 17:39	C22080142.D
1,2,3-Trichloropropane	96-18-4	<1.55		1.55	08/02/2022 17:39	C22080142.D
Isopropylbenzene	98-82-8	<3.51		3.51	08/02/2022 17:39	C22080142.D
1,3,5-Trimethylbenzene	108-67-8	<3.51		3.51	08/02/2022 17:39	C22080142.D
1,2,4-Trimethylbenzene	95-63-6	<3.51		3.51	08/02/2022 17:39	C22080142.D
1,3-Dichlorobenzene	541-73-1	<1.55		1.55	08/02/2022 17:39	C22080142.D
1,4-Dichlorobenzene	106-46-7	<1.55		1.55	08/02/2022 17:39	C22080142.D
1,2-Dichlorobenzene	95-50-1	<1.55		1.55	08/02/2022 17:39	C22080142.D
1,2,4-Trichlorobenzene	120-82-1	<2.99		2.99	08/02/2022 17:39	C22080142.D
Naphthalene	91-20-3	<3.64		3.64	08/02/2022 17:39	C22080142.D
1,2,3-Trichlorobenzene	87-61-6	<2.99		2.99	08/02/2022 17:39	C22080142.D
2-Methylnaphthalene	91-57-6	<3.83		3.83	08/02/2022 17:39	C22080142.D
≢ TPH C4-C9		<988		988	08/02/2022 17:39	C22080142.D
≢ TPH C10-C15		<845		845	08/02/2022 17:39	C22080142.D

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Lab Sample ID: 0006480-05

PSG-04

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (µg/m³)	Q	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<1.44		1.44	08/02/2022 18:05	C22080143.D
1,1-Dichloroethene	75-35-4	<3.52		3.52	08/02/2022 18:05	C22080143.D
Methylene Chloride	75-09-2	<3.32		3.32	08/02/2022 18:05	C22080143.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<1.31		1.31	08/02/2022 18:05	C22080143.D
trans-1,2-Dichloroethene	156-60-5	<2.64		2.64	08/02/2022 18:05	C22080143.D
Methyl-t-butyl ether	1634-04-4	<5.81		5.81	08/02/2022 18:05	C22080143.D
1,1-Dichloroethane	75-34-3	<1.37		1.37	08/02/2022 18:05	C22080143.D
cis-1,2-Dichloroethene	156-59-2	<2.19		2.19	08/02/2022 18:05	C22080143.D
Chloroform	67-66-3	<3.32		3.32	08/02/2022 18:05	C22080143.D
1,2-Dichloroethane	107-06-2	<2.08		2.08	08/02/2022 18:05	C22080143.D
1,1,1-Trichloroethane	71-55-6	<1.11		1.11	08/02/2022 18:05	C22080143.D
Carbon Tetrachloride	56-23-5	<2.70		2.70	08/02/2022 18:05	C22080143.D
Benzene	71-43-2	<5.48		5.48	08/02/2022 18:05	C22080143.D
Trichloroethene	79-01-6	<3.52		3.52	08/02/2022 18:05	C22080143.D
1,4-Dioxane	123-91-1	<2.84		2.84	08/02/2022 18:05	C22080143.D
1,1,2-Trichloroethane	79-00-5	<3.52		3.52	08/02/2022 18:05	C22080143.D
Toluene	108-88-3	<7.27		7.27	08/02/2022 18:05	C22080143.D
1,2-Dibromoethane (EDB)	106-93-4	<2.98		2.98	08/02/2022 18:05	C22080143.D
Tetrachloroethene	127-18-4	<2.84		2.84	08/02/2022 18:05	C22080143.D
1,1,1,2-Tetrachloroethane	630-20-6	<2.84		2.84	08/02/2022 18:05	C22080143.D
Chlorobenzene	108-90-7	<1.37		1.37	08/02/2022 18:05	C22080143.D
Ethylbenzene	100-41-4	<3.42		3.42	08/02/2022 18:05	C22080143.D
p & m-Xylene	179601-23-1	<3.30		3.30	08/02/2022 18:05	C22080143.D
o-Xylene	95-47-6	<3.30		3.30	08/02/2022 18:05	C22080143.D
1,2,3-Trichloropropane	96-18-4	<1.55		1.55	08/02/2022 18:05	C22080143.D
Isopropylbenzene	98-82-8	<3.50		3.50	08/02/2022 18:05	C22080143.D
1,3,5-Trimethylbenzene	108-67-8	<3.50		3.50	08/02/2022 18:05	C22080143.D
1,2,4-Trimethylbenzene	95-63-6	<3.50		3.50	08/02/2022 18:05	C22080143.D
1,3-Dichlorobenzene	541-73-1	<1.55		1.55	08/02/2022 18:05	C22080143.D
1,4-Dichlorobenzene	106-46-7	<1.55		1.55	08/02/2022 18:05	C22080143.D
1,2-Dichlorobenzene	95-50-1	<1.55		1.55	08/02/2022 18:05	C22080143.D
1,2,4-Trichlorobenzene	120-82-1	<2.98		2.98	08/02/2022 18:05	C22080143.D
Naphthalene	91-20-3	<3.63		3.63	08/02/2022 18:05	C22080143.D
1,2,3-Trichlorobenzene	87-61-6	<2.98		2.98	08/02/2022 18:05	C22080143.D
2-Methylnaphthalene	91-57-6	<3.82		3.82	08/02/2022 18:05	C22080143.D
⋹ TPH C4-C9		<985		985	08/02/2022 18:05	C22080143.D
⋹ TPH C10-C15		<843		843	08/02/2022 18:05	C22080143.D

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Lab Sample ID: 0006480-06

PSG-05

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (µg/m³)	Q	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<1.44		1.44	08/02/2022 18:32	C22080144.D
1,1-Dichloroethene	75-35-4	<3.54		3.54	08/02/2022 18:32	C22080144.D
Methylene Chloride	75-09-2	<3.34		3.34	08/02/2022 18:32	C22080144.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<1.31		1.31	08/02/2022 18:32	C22080144.D
trans-1,2-Dichloroethene	156-60-5	<2.66		2.66	08/02/2022 18:32	C22080144.D
Methyl-t-butyl ether	1634-04-4	<5.85		5.85	08/02/2022 18:32	C22080144.D
1,1-Dichloroethane	75-34-3	<1.38		1.38	08/02/2022 18:32	C22080144.D
cis-1,2-Dichloroethene	156-59-2	<2.21		2.21	08/02/2022 18:32	C22080144.D
Chloroform	67-66-3	<3.34		3.34	08/02/2022 18:32	C22080144.D
1,2-Dichloroethane	107-06-2	<2.09		2.09	08/02/2022 18:32	C22080144.D
1,1,1-Trichloroethane	71-55-6	<1.11		1.11	08/02/2022 18:32	C22080144.D
Carbon Tetrachloride	56-23-5	<2.72		2.72	08/02/2022 18:32	C22080144.D
Benzene	71-43-2	<5.52		5.52	08/02/2022 18:32	C22080144.D
Trichloroethene	79-01-6	<3.54		3.54	08/02/2022 18:32	C22080144.D
1,4-Dioxane	123-91-1	<2.85		2.85	08/02/2022 18:32	C22080144.D
1,1,2-Trichloroethane	79-00-5	<3.54		3.54	08/02/2022 18:32	C22080144.D
Toluene	108-88-3	<7.31		7.31	08/02/2022 18:32	C22080144.D
1,2-Dibromoethane (EDB)	106-93-4	<3.00		3.00	08/02/2022 18:32	C22080144.D
Tetrachloroethene	127-18-4	<2.85		2.85	08/02/2022 18:32	C22080144.D
1,1,1,2-Tetrachloroethane	630-20-6	<2.85		2.85	08/02/2022 18:32	C22080144.D
Chlorobenzene	108-90-7	<1.38		1.38	08/02/2022 18:32	C22080144.D
Ethylbenzene	100-41-4	<3.44		3.44	08/02/2022 18:32	C22080144.D
p & m-Xylene	179601-23-1	<3.32		3.32	08/02/2022 18:32	C22080144.D
o-Xylene	95-47-6	<3.32		3.32	08/02/2022 18:32	C22080144.D
1,2,3-Trichloropropane	96-18-4	<1.56		1.56	08/02/2022 18:32	C22080144.D
Isopropylbenzene	98-82-8	<3.52		3.52	08/02/2022 18:32	C22080144.D
1,3,5-Trimethylbenzene	108-67-8	<3.52		3.52	08/02/2022 18:32	C22080144.D
1,2,4-Trimethylbenzene	95-63-6	<3.52		3.52	08/02/2022 18:32	C22080144.D
1,3-Dichlorobenzene	541-73-1	<1.56		1.56	08/02/2022 18:32	C22080144.D
1,4-Dichlorobenzene	106-46-7	<1.56		1.56	08/02/2022 18:32	C22080144.D
1,2-Dichlorobenzene	95-50-1	<1.56		1.56	08/02/2022 18:32	C22080144.D
1,2,4-Trichlorobenzene	120-82-1	<3.00		3.00	08/02/2022 18:32	C22080144.D
Naphthalene	91-20-3	<3.65		3.65	08/02/2022 18:32	C22080144.D
1,2,3-Trichlorobenzene	87-61-6	<3.00		3.00	08/02/2022 18:32	C22080144.D
2-Methylnaphthalene	91-57-6	<3.85		3.85	08/02/2022 18:32	C22080144.D
≤ TPH C4-C9		<991		991	08/02/2022 18:32	C22080144.D
≤ **TPH C10-C15**		**2,320**		848	08/02/2022 18:32	C22080144.D

2203A Commerce Road, Suite 1
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1.410.838.8780

CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Lab Sample ID: 0006480-07

PSG-01 Dup

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (µg/m³)	Q	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<1.40		1.40	08/16/2022 15:38	C22081606.D
1,1-Dichloroethene	75-35-4	<3.45		3.45	08/16/2022 15:38	C22081606.D
Methylene Chloride	75-09-2	<3.25		3.25	08/16/2022 15:38	C22081606.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<1.28		1.28	08/16/2022 15:38	C22081606.D
trans-1,2-Dichloroethene	156-60-5	<2.59		2.59	08/16/2022 15:38	C22081606.D
Methyl-t-butyl ether	1634-04-4	<5.69		5.69	08/16/2022 15:38	C22081606.D
1,1-Dichloroethane	75-34-3	<1.34		1.34	08/16/2022 15:38	C22081606.D
cis-1,2-Dichloroethene	156-59-2	<2.15		2.15	08/16/2022 15:38	C22081606.D
Chloroform	67-66-3	<3.25		3.25	08/16/2022 15:38	C22081606.D
1,2-Dichloroethane	107-06-2	<2.03		2.03	08/16/2022 15:38	C22081606.D
1,1,1-Trichloroethane	71-55-6	<1.08		1.08	08/16/2022 15:38	C22081606.D
Carbon Tetrachloride	56-23-5	<2.65		2.65	08/16/2022 15:38	C22081606.D
Benzene	71-43-2	**6.30**		5.37	08/16/2022 15:38	C22081606.D
Trichloroethene	79-01-6	<3.45		3.45	08/16/2022 15:38	C22081606.D
1,4-Dioxane	123-91-1	<2.77		2.77	08/16/2022 15:38	C22081606.D
1,1,2-Trichloroethane	79-00-5	<3.45		3.45	08/16/2022 15:38	C22081606.D
Toluene	108-88-3	**27.3**		7.11	08/16/2022 15:38	C22081606.D
1,2-Dibromoethane (EDB)	106-93-4	<2.92		2.92	08/16/2022 15:38	C22081606.D
Tetrachloroethene	127-18-4	<2.77		2.77	08/16/2022 15:38	C22081606.D
1,1,1,2-Tetrachloroethane	630-20-6	<2.77		2.77	08/16/2022 15:38	C22081606.D
Chlorobenzene	108-90-7	<1.34		1.34	08/16/2022 15:38	C22081606.D
Ethylbenzene	100-41-4	<3.35		3.35	08/16/2022 15:38	C22081606.D
p & m-Xylene	179601-23-1	<3.23		3.23	08/16/2022 15:38	C22081606.D
o-Xylene	95-47-6	<3.23		3.23	08/16/2022 15:38	C22081606.D
1,2,3-Trichloropropane	96-18-4	<1.52		1.52	08/16/2022 15:38	C22081606.D
Isopropylbenzene	98-82-8	<3.43		3.43	08/16/2022 15:38	C22081606.D
1,3,5-Trimethylbenzene	108-67-8	<3.43		3.43	08/16/2022 15:38	C22081606.D
1,2,4-Trimethylbenzene	95-63-6	<3.43		3.43	08/16/2022 15:38	C22081606.D
1,3-Dichlorobenzene	541-73-1	<1.52		1.52	08/16/2022 15:38	C22081606.D
1,4-Dichlorobenzene	106-46-7	<1.52		1.52	08/16/2022 15:38	C22081606.D
1,2-Dichlorobenzene	95-50-1	<1.52		1.52	08/16/2022 15:38	C22081606.D
1,2,4-Trichlorobenzene	120-82-1	<2.92		2.92	08/16/2022 15:38	C22081606.D
Naphthalene	91-20-3	<3.56		3.56	08/16/2022 15:38	C22081606.D
1,2,3-Trichlorobenzene	87-61-6	<2.92		2.92	08/16/2022 15:38	C22081606.D
2-Methylnaphthalene	91-57-6	<3.74		3.74	08/16/2022 15:38	C22081606.D
≢ TPH C4-C9		<964		964	08/16/2022 15:38	C22081606.D
≢ TPH C10-C15		<824		824	08/16/2022 15:38	C22081606.D

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Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

QC Information/Summary

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary

22H0006-BLK1 (Lab Blank) File ID: C22080128.D Analyzed: 8/1/22 22:19

Sampler: Beacon Passive Sampler

Analyte	CAS#	Result (ng)	LOQ (ng)	Q
Vinyl Chloride	75-01-4	<10	10	
1,1-Dichloroethene	75-35-4	<10	10	
Methylene Chloride	75-09-2	<10	10	
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10	10	
trans-1,2-Dichloroethene	156-60-5	<10	10	
Methyl-t-butyl ether	1634-04-4	<25	25	
1,1-Dichloroethane	75-34-3	<10	10	
cis-1,2-Dichloroethene	156-59-2	<10	10	
Chloroform	67-66-3	<10	10	
1,2-Dichloroethane	107-06-2	<10	10	
1,1,1-Trichloroethane	71-55-6	<10	10	
Carbon Tetrachloride	56-23-5	<10	10	
Benzene	71-43-2	<25	25	
Trichloroethene	79-01-6	<10	10	
1,4-Dioxane	123-91-1	<10	10	
1,1,2-Trichloroethane	79-00-5	<10	10	
Toluene	108-88-3	<25	25	
1,2-Dibromoethane (EDB)	106-93-4	<10	10	
Tetrachloroethene	127-18-4	<10	10	
1,1,1,2-Tetrachloroethane	630-20-6	<10	10	
Chlorobenzene	108-90-7	<10	10	
Ethylbenzene	100-41-4	<25	25	
p & m-Xylene	179601-23-1	<25	25	
o-Xylene	95-47-6	<25	25	
1,2,3-Trichloropropane	96-18-4	<10	10	
Isopropylbenzene	98-82-8	<25	25	
1,3,5-Trimethylbenzene	108-67-8	<25	25	
1,2,4-Trimethylbenzene	95-63-6	<25	25	
1,3-Dichlorobenzene	541-73-1	<10	10	
1,4-Dichlorobenzene	106-46-7	<10	10	
1,2-Dichlorobenzene	95-50-1	<10	10	
1,2,4-Trichlorobenzene	120-82-1	<10	10	
Naphthalene	91-20-3	<25	25	
1,2,3-Trichlorobenzene	87-61-6	<10	10	
2-Methylnaphthalene	91-57-6	<25	25	
TPH C4-C9		<5000	5000	
TPH C10-C15		<5000	5000	

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary

22H0046-BLK1 (Lab Blank) File ID: C22081603.D Analyzed: 8/16/22 13:26

Sampler: Beacon Passive Sampler

Analyte	CAS#	Result (ng)	LOQ (ng)	Q
Vinyl Chloride	75-01-4	<10	10	
1,1-Dichloroethene	75-35-4	<10	10	
Methylene Chloride	75-09-2	<10	10	
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10	10	
trans-1,2-Dichloroethene	156-60-5	<10	10	
Methyl-t-butyl ether	1634-04-4	<25	25	
1,1-Dichloroethane	75-34-3	<10	10	
cis-1,2-Dichloroethene	156-59-2	<10	10	
Chloroform	67-66-3	<10	10	
1,2-Dichloroethane	107-06-2	<10	10	
1,1,1-Trichloroethane	71-55-6	<10	10	
Carbon Tetrachloride	56-23-5	<10	10	
Benzene	71-43-2	<25	25	
Trichloroethene	79-01-6	<10	10	
1,4-Dioxane	123-91-1	<10	10	
1,1,2-Trichloroethane	79-00-5	<10	10	
Toluene	108-88-3	<25	25	
1,2-Dibromoethane (EDB)	106-93-4	<10	10	
Tetrachloroethene	127-18-4	<10	10	
1,1,1,2-Tetrachloroethane	630-20-6	<10	10	
Chlorobenzene	108-90-7	<10	10	
Ethylbenzene	100-41-4	<25	25	
p & m-Xylene	179601-23-1	<25	25	
o-Xylene	95-47-6	<25	25	
1,2,3-Trichloropropane	96-18-4	<10	10	
Isopropylbenzene	98-82-8	<25	25	
1,3,5-Trimethylbenzene	108-67-8	<25	25	
1,2,4-Trimethylbenzene	95-63-6	<25	25	
1,3-Dichlorobenzene	541-73-1	<10	10	
1,4-Dichlorobenzene	106-46-7	<10	10	
1,2-Dichlorobenzene	95-50-1	<10	10	
1,2,4-Trichlorobenzene	120-82-1	<10	10	
Naphthalene	91-20-3	<25	25	
1,2,3-Trichlorobenzene	87-61-6	<10	10	
2-Methylnaphthalene	91-57-6	<25	25	
TPH C4-C9		<5000	5000	
TPH C10-C15		<5000	5000	

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Soil-Gas Analysis by EPA 8260 - Data in Concentration - Quality Control Summary

22H0006-BLK1 (Lab Blank) File ID: C22080128.D Analyzed: 8/1/22 22:19

Sampler: Beacon Passive Sampler

Analyte	CAS#	Result (µg/m³)	LOQ (µg/m³)	Q
Vinyl Chloride	75-01-4	<1.40	1.40	
1,1-Dichloroethene	75-35-4	<3.45	3.45	
Methylene Chloride	75-09-2	<3.25	3.25	
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<1.28	1.28	
trans-1,2-Dichloroethene	156-60-5	<2.59	2.59	
Methyl-t-butyl ether	1634-04-4	<5.69	5.69	
1,1-Dichloroethane	75-34-3	<1.34	1.34	
cis-1,2-Dichloroethene	156-59-2	<2.15	2.15	
Chloroform	67-66-3	<3.25	3.25	
1,2-Dichloroethane	107-06-2	<2.03	2.03	
1,1,1-Trichloroethane	71-55-6	<1.08	1.08	
Carbon Tetrachloride	56-23-5	<2.65	2.65	
Benzene	71-43-2	<5.37	5.37	
Trichloroethene	79-01-6	<3.45	3.45	
1,4-Dioxane	123-91-1	<2.77	2.77	
1,1,2-Trichloroethane	79-00-5	<3.45	3.45	
Toluene	108-88-3	<7.11	7.11	
1,2-Dibromoethane (EDB)	106-93-4	<2.92	2.92	
Tetrachloroethene	127-18-4	<2.77	2.77	
1,1,1,2-Tetrachloroethane	630-20-6	<2.77	2.77	
Chlorobenzene	108-90-7	<1.34	1.34	
Ethylbenzene	100-41-4	<3.35	3.35	
p & m-Xylene	179601-23-1	<3.23	3.23	
o-Xylene	95-47-6	<3.23	3.23	
1,2,3-Trichloropropane	96-18-4	<1.52	1.52	
Isopropylbenzene	98-82-8	<3.43	3.43	
1,3,5-Trimethylbenzene	108-67-8	<3.43	3.43	
1,2,4-Trimethylbenzene	95-63-6	<3.43	3.43	
1,3-Dichlorobenzene	541-73-1	<1.52	1.52	
1,4-Dichlorobenzene	106-46-7	<1.52	1.52	
1,2-Dichlorobenzene	95-50-1	<1.52	1.52	
1,2,4-Trichlorobenzene	120-82-1	<2.92	2.92	
Naphthalene	91-20-3	<3.56	3.56	
1,2,3-Trichlorobenzene	87-61-6	<2.92	2.92	
2-Methylnaphthalene	91-57-6	<3.74	3.74	
TPH C4-C9		<964	964	
TPH C10-C15		<824	824	

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Soil-Gas Analysis by EPA 8260 - Data in Concentration - Quality Control Summary

22H0046-BLK1 (Lab Blank) File ID: C22081603.D Analyzed: 8/16/22 13:26

Sampler: Beacon Passive Sampler

Analyte	CAS#	Result (µg/m³)	LOQ (µg/m³)	Q
Vinyl Chloride	75-01-4	<1.40	1.40	
1,1-Dichloroethene	75-35-4	<3.45	3.45	
Methylene Chloride	75-09-2	<3.25	3.25	
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<1.28	1.28	
trans-1,2-Dichloroethene	156-60-5	<2.59	2.59	
Methyl-t-butyl ether	1634-04-4	<5.69	5.69	
1,1-Dichloroethane	75-34-3	<1.34	1.34	
cis-1,2-Dichloroethene	156-59-2	<2.15	2.15	
Chloroform	67-66-3	<3.25	3.25	
1,2-Dichloroethane	107-06-2	<2.03	2.03	
1,1,1-Trichloroethane	71-55-6	<1.08	1.08	
Carbon Tetrachloride	56-23-5	<2.65	2.65	
Benzene	71-43-2	<5.37	5.37	
Trichloroethene	79-01-6	<3.45	3.45	
1,4-Dioxane	123-91-1	<2.77	2.77	
1,1,2-Trichloroethane	79-00-5	<3.45	3.45	
Toluene	108-88-3	<7.11	7.11	
1,2-Dibromoethane (EDB)	106-93-4	<2.92	2.92	
Tetrachloroethene	127-18-4	<2.77	2.77	
1,1,1,2-Tetrachloroethane	630-20-6	<2.77	2.77	
Chlorobenzene	108-90-7	<1.34	1.34	
Ethylbenzene	100-41-4	<3.35	3.35	
p & m-Xylene	179601-23-1	<3.23	3.23	
o-Xylene	95-47-6	<3.23	3.23	
1,2,3-Trichloropropane	96-18-4	<1.52	1.52	
Isopropylbenzene	98-82-8	<3.43	3.43	
1,3,5-Trimethylbenzene	108-67-8	<3.43	3.43	
1,2,4-Trimethylbenzene	95-63-6	<3.43	3.43	
1,3-Dichlorobenzene	541-73-1	<1.52	1.52	
1,4-Dichlorobenzene	106-46-7	<1.52	1.52	
1,2-Dichlorobenzene	95-50-1	<1.52	1.52	
1,2,4-Trichlorobenzene	120-82-1	<2.92	2.92	
Naphthalene	91-20-3	<3.56	3.56	
1,2,3-Trichlorobenzene	87-61-6	<2.92	2.92	
2-Methylnaphthalene	91-57-6	<3.74	3.74	
TPH C4-C9		<964	964	
TPH C10-C15		<824	824	

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Sample Duplicate RPD Summary

Soil-Gas Sample Analysis by EPA Method 8260C

Duplicate Sample: PSG-01 Dup (0006480-07) ***Sample: PSG-01 (0006480-02)*** ***Average RPD:*** 1.8***%***

Analyte	CAS#	Duplicate Result (ng)	LOQ (ng)	Sample Result (ng)	LOQ (ng)	RPD (%)
Vinyl Chloride	75-01-4	<10	10	<10	10	0.0
1,1-Dichloroethene	75-35-4	<10	10	<10	10	0.0
Methylene Chloride	75-09-2	<10	10	<10	10	0.0
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10	10	<10	10	0.0
trans-1,2-Dichloroethene	156-60-5	<10	10	<10	10	0.0
Methyl-t-butyl ether	1634-04-4	<25	25	<25	25	0.0
1,1-Dichloroethane	75-34-3	<10	10	<10	10	0.0
cis-1,2-Dichloroethene	156-59-2	<10	10	<10	10	0.0
Chloroform	67-66-3	<10	10	<10	10	0.0
1,2-Dichloroethane	107-06-2	<10	10	<10	10	0.0
1,1,1-Trichloroethane	71-55-6	<10	10	<10	10	0.0
Carbon Tetrachloride	56-23-5	<10	10	<10	10	0.0
Benzene	71-43-2	29.0	25	<25	25	14.8
Trichloroethene	79-01-6	<10	10	<10	10	0.0
1,4-Dioxane	123-91-1	<10	10	<10	10	0.0
1,1,2-Trichloroethane	79-00-5	<10	10	<10	10	0.0
Toluene	108-88-3	96.0	25	56.0	25	52.6
1,2-Dibromoethane (EDB)	106-93-4	<10	10	<10	10	0.0
Tetrachloroethene	127-18-4	<10	10	<10	10	0.0
1,1,1,2-Tetrachloroethane	630-20-6	<10	10	<10	10	0.0
Chlorobenzene	108-90-7	<10	10	<10	10	0.0
Ethylbenzene	100-41-4	<25	25	<25	25	0.0
p & m-Xylene	179601-23-1	<25	25	<25	25	0.0
o-Xylene	95-47-6	<25	25	<25	25	0.0
1,2,3-Trichloropropane	96-18-4	<10	10	<10	10	0.0
Isopropylbenzene	98-82-8	<25	25	<25	25	0.0
1,3,5-Trimethylbenzene	108-67-8	<25	25	<25	25	0.0
1,2,4-Trimethylbenzene	95-63-6	<25	25	<25	25	0.0
1,3-Dichlorobenzene	541-73-1	<10	10	<10	10	0.0
1,4-Dichlorobenzene	106-46-7	<10	10	<10	10	0.0
1,2-Dichlorobenzene	95-50-1	<10	10	<10	10	0.0
1,2,4-Trichlorobenzene	120-82-1	<10	10	<10	10	0.0
Naphthalene	91-20-3	<25	25	<25	25	0.0
1,2,3-Trichlorobenzene	87-61-6	<10	10	<10	10	0.0
2-Methylnaphthalene	91-57-6	<25	25	<25	25	0.0
TPH C4-C9		<5,000	5000	<5,000	5000	0.0
TPH C10-C15		<5,000	5000	<5,000	5000	0.0

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Sample Duplicate RPD Summary - Concentration

Soil-Gas Analysis by EPA 8260 - Data in Concentration

Duplicate Sample: PSG-01 Dup (0006480-07) ***Sample: PSG-01 (0006480-02)*** ***Average RPD:*** 1.9*%*

Analyte	CAS#	Duplicate Result (µg/m³)	LOQ (µg/m³)	Sample Result (µg/m³)	LOQ (µg/m³)	RPD (%)
Vinyl Chloride	75-01-4	<1.40	1.40	<1.40	1.40	0.0
1,1-Dichloroethene	75-35-4	<3.45	3.45	<3.45	3.45	0.0
Methylene Chloride	75-09-2	<3.25	3.25	<3.25	3.25	0.0
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<1.28	1.28	<1.28	1.28	0.0
trans-1,2-Dichloroethene	156-60-5	<2.59	2.59	<2.59	2.59	0.0
Methyl-t-butyl ether	1634-04-4	<5.69	5.69	<5.69	5.69	0.0
1,1-Dichloroethane	75-34-3	<1.34	1.34	<1.34	1.34	0.0
cis-1,2-Dichloroethene	156-59-2	<2.15	2.15	<2.15	2.15	0.0
Chloroform	67-66-3	<3.25	3.25	<3.25	3.25	0.0
1,2-Dichloroethane	107-06-2	<2.03	2.03	<2.03	2.03	0.0
1,1,1-Trichloroethane	71-55-6	<1.08	1.08	<1.08	1.08	0.0
Carbon Tetrachloride	56-23-5	<2.65	2.65	<2.65	2.65	0.0
Benzene	71-43-2	6.30	5.37	<5.37	5.37	15.9
Trichloroethene	79-01-6	<3.45	3.45	<3.45	3.45	0.0
1,4-Dioxane	123-91-1	<2.77	2.77	<2.77	2.77	0.0
1,1,2-Trichloroethane	79-00-5	<3.45	3.45	<3.45	3.45	0.0
Toluene	108-88-3	27.3	7.11	15.8	7.11	53.4
1,2-Dibromoethane (EDB)	106-93-4	<2.92	2.92	<2.92	2.92	0.0
Tetrachloroethene	127-18-4	<2.77	2.77	<2.77	2.77	0.0
1,1,1,2-Tetrachloroethane	630-20-6	<2.77	2.77	<2.77	2.77	0.0
Chlorobenzene	108-90-7	<1.34	1.34	<1.34	1.34	0.0
Ethylbenzene	100-41-4	<3.35	3.35	<3.35	3.35	0.0
p & m-Xylene	179601-23-1	<3.23	3.23	<3.23	3.23	0.0
o-Xylene	95-47-6	<3.23	3.23	<3.23	3.23	0.0
1,2,3-Trichloropropane	96-18-4	<1.52	1.52	<1.52	1.52	0.0
Isopropylbenzene	98-82-8	<3.43	3.43	<3.43	3.43	0.0
1,3,5-Trimethylbenzene	108-67-8	<3.43	3.43	<3.43	3.43	0.0
1,2,4-Trimethylbenzene	95-63-6	<3.43	3.43	<3.43	3.43	0.0
1,3-Dichlorobenzene	541-73-1	<1.52	1.52	<1.52	1.52	0.0
1,4-Dichlorobenzene	106-46-7	<1.52	1.52	<1.52	1.52	0.0
1,2-Dichlorobenzene	95-50-1	<1.52	1.52	<1.52	1.52	0.0
1,2,4-Trichlorobenzene	120-82-1	<2.92	2.92	<2.92	2.92	0.0
Naphthalene	91-20-3	<3.56	3.56	<3.56	3.56	0.0
1,2,3-Trichlorobenzene	87-61-6	<2.92	2.92	<2.92	2.92	0.0
2-Methylnaphthalene	91-57-6	<3.74	3.74	<3.74	3.74	0.0
TPH C4-C9		<964	964	<964	964	0.0
TPH C10-C15		<824	824	<824	824	0.0

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Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Additional QC Information

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Sample Result Calculation Summary (Concentration)

EPA 8260C

Analyte	t Sampling Time minutes	DF Dilution Factor	U Uptake Rate	M Initial Result ng	C Calculated Result µg/m³	File ID
Lab ID: 0006480-01 **Sample Name:** Trip 1						
Vinyl Chloride	8,790	1.00	0.810	U	U	C22080139.D
1,1-Dichloroethene	8,790	1.00	0.330	U	U	C22080139.D
Methylene Chloride	8,790	1.00	0.350 g	U	U	C22080139.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	8,790	1.00	0.890 g	U	U	C22080139.D
trans-1,2-Dichloroethene	8,790	1.00	0.440	U	U	C22080139.D
Methyl-t-butyl ether	8,790	1.00	0.500 g	U	U	C22080139.D
1,1-Dichloroethane	8,790	1.00	0.850	U	U	C22080139.D
cis-1,2-Dichloroethene	8,790	1.00	0.530	U	U	C22080139.D
Chloroform	8,790	1.00	0.350 g	U	U	C22080139.D
1,2-Dichloroethane	8,790	1.00	0.560	U	U	C22080139.D
1,1,1-Trichloroethane	8,790	1.00	1.050	U	U	C22080139.D
Carbon Tetrachloride	8,790	1.00	0.430 g	U	U	C22080139.D
Benzene	8,790	1.00	0.530	U	U	C22080139.D
Trichloroethene	8,790	1.00	0.330	U	U	C22080139.D
1,4-Dioxane	8,790	1.00	0.410 g	U	U	C22080139.D
1,1,2-Trichloroethane	8,790	1.00	0.330 g	U	U	C22080139.D
Toluene	8,790	1.00	0.400	U	U	C22080139.D
1,2-Dibromoethane (EDB)	8,790	1.00	0.390 g	U	U	C22080139.D
Tetrachloroethene	8,790	1.00	0.410	U	U	C22080139.D
1,1,1,2-Tetrachloroethane	8,790	1.00	0.410 g	U	U	C22080139.D
Chlorobenzene	8,790	1.00	0.850 g	U	U	C22080139.D
Ethylbenzene	8,790	1.00	0.850	U	U	C22080139.D
p & m-Xylene	8,790	1.00	0.880	U	U	C22080139.D
o-Xylene	8,790	1.00	0.880	U	U	C22080139.D
1,2,3-Trichloropropane	8,790	1.00	0.750 g	U	U	C22080139.D
Isopropylbenzene	8,790	1.00	0.830 g	U	U	C22080139.D
1,3,5-Trimethylbenzene	8,790	1.00	0.830 g	U	U	C22080139.D
1,2,4-Trimethylbenzene	8,790	1.00	0.830 g	U	U	C22080139.D
1,3-Dichlorobenzene	8,790	1.00	0.750 g	U	U	C22080139.D
1,4-Dichlorobenzene	8,790	1.00	0.750 g	U	U	C22080139.D
1,2-Dichlorobenzene	8,790	1.00	0.750 g	U	U	C22080139.D
1,2,4-Trichlorobenzene	8,790	1.00	0.390 g	U	U	C22080139.D
Naphthalene	8,790	1.00	0.800 g	U	U	C22080139.D
1,2,3-Trichlorobenzene	8,790	1.00	0.390 g	U	U	C22080139.D
2-Methylnaphthalene	8,790	1.00	0.760 g	U	U	C22080139.D
TPH C4-C9	8,790	1.00	0.590 g	U	U	C22080139.D
TPH C10-C15	8,790	1.00	0.690 g	U	U	C22080139.D

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Sample Result Calculation Summary (Concentration)

EPA 8260C

Lab ID: 0006480-02 **Sample Name:** PSG-01

Analyte	t Sampling Time minutes	DF Dilution Factor	U Uptake Rate	M Initial Result ng	C Calculated Result µg/m³	File ID
Vinyl Chloride	8,790	1.00	0.810	U	U	C22080140.D
1,1-Dichloroethene	8,790	1.00	0.330	U	U	C22080140.D
Methylene Chloride	8,790	1.00	0.350 g	U	U	C22080140.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	8,790	1.00	0.890 g	U	U	C22080140.D
trans-1,2-Dichloroethene	8,790	1.00	0.440	U	U	C22080140.D
Methyl-t-butyl ether	8,790	1.00	0.500 g	U	U	C22080140.D
1,1-Dichloroethane	8,790	1.00	0.850	U	U	C22080140.D
cis-1,2-Dichloroethene	8,790	1.00	0.530	U	U	C22080140.D
Chloroform	8,790	1.00	0.350 g	U	U	C22080140.D
1,2-Dichloroethane	8,790	1.00	0.560	U	U	C22080140.D
1,1,1-Trichloroethane	8,790	1.00	1.050	U	U	C22080140.D
Carbon Tetrachloride	8,790	1.00	0.430 g	U	U	C22080140.D
Benzene	8,790	1.00	0.530	U	U	C22080140.D
Trichloroethene	8,790	1.00	0.330	U	U	C22080140.D
1,4-Dioxane	8,790	1.00	0.410 g	U	U	C22080140.D
1,1,2-Trichloroethane	8,790	1.00	0.330 g	U	U	C22080140.D
Toluene	8,790	1.00	0.400	55.69	15.8	C22080140.D
1,2-Dibromoethane (EDB)	8,790	1.00	0.390 g	U	U	C22080140.D
Tetrachloroethene	8,790	1.00	0.410	U	U	C22080140.D
1,1,1,2-Tetrachloroethane	8,790	1.00	0.410 g	U	U	C22080140.D
Chlorobenzene	8,790	1.00	0.850 g	U	U	C22080140.D
Ethylbenzene	8,790	1.00	0.850	U	U	C22080140.D
p & m-Xylene	8,790	1.00	0.880	U	U	C22080140.D
o-Xylene	8,790	1.00	0.880	U	U	C22080140.D
1,2,3-Trichloropropane	8,790	1.00	0.750 g	U	U	C22080140.D
Isopropylbenzene	8,790	1.00	0.830 g	U	U	C22080140.D
1,3,5-Trimethylbenzene	8,790	1.00	0.830 g	U	U	C22080140.D
1,2,4-Trimethylbenzene	8,790	1.00	0.830 g	U	U	C22080140.D
1,3-Dichlorobenzene	8,790	1.00	0.750 g	U	U	C22080140.D
1,4-Dichlorobenzene	8,790	1.00	0.750 g	U	U	C22080140.D
1,2-Dichlorobenzene	8,790	1.00	0.750 g	U	U	C22080140.D
1,2,4-Trichlorobenzene	8,790	1.00	0.390 g	U	U	C22080140.D
Naphthalene	8,790	1.00	0.800 g	U	U	C22080140.D
1,2,3-Trichlorobenzene	8,790	1.00	0.390 g	U	U	C22080140.D
2-Methylnaphthalene	8,790	1.00	0.760 g	U	U	C22080140.D
TPH C4-C9	8,790	1.00	0.590 g	U	U	C22080140.D
TPH C10-C15	8,790	1.00	0.690 g	U	U	C22080140.D

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Sample Result Calculation Summary (Concentration)

EPA 8260C

Lab ID: 0006480-03 **Sample Name:** PSG-02

Analyte	t Sampling Time minutes	DF Dilution Factor	U Uptake Rate	M Initial Result ng	C Calculated Result µg/m³	File ID
Vinyl Chloride	8,790	1.00	0.810	U	U	C22080141.D
1,1-Dichloroethene	8,790	1.00	0.330	U	U	C22080141.D
Methylene Chloride	8,790	1.00	0.350 g	U	U	C22080141.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	8,790	1.00	0.890 g	U	U	C22080141.D
trans-1,2-Dichloroethene	8,790	1.00	0.440	U	U	C22080141.D
Methyl-t-butyl ether	8,790	1.00	0.500 g	U	U	C22080141.D
1,1-Dichloroethane	8,790	1.00	0.850	U	U	C22080141.D
cis-1,2-Dichloroethene	8,790	1.00	0.530	U	U	C22080141.D
Chloroform	8,790	1.00	0.350 g	U	U	C22080141.D
1,2-Dichloroethane	8,790	1.00	0.560	U	U	C22080141.D
1,1,1-Trichloroethane	8,790	1.00	1.050	U	U	C22080141.D
Carbon Tetrachloride	8,790	1.00	0.430 g	U	U	C22080141.D
Benzene	8,790	1.00	0.530	U	U	C22080141.D
Trichloroethene	8,790	1.00	0.330	U	U	C22080141.D
1,4-Dioxane	8,790	1.00	0.410 g	U	U	C22080141.D
1,1,2-Trichloroethane	8,790	1.00	0.330 g	U	U	C22080141.D
Toluene	8,790	1.00	0.400	U	U	C22080141.D
1,2-Dibromoethane (EDB)	8,790	1.00	0.390 g	U	U	C22080141.D
Tetrachloroethene	8,790	1.00	0.410	U	U	C22080141.D
1,1,1,2-Tetrachloroethane	8,790	1.00	0.410 g	U	U	C22080141.D
Chlorobenzene	8,790	1.00	0.850 g	U	U	C22080141.D
Ethylbenzene	8,790	1.00	0.850	U	U	C22080141.D
p & m-Xylene	8,790	1.00	0.880	U	U	C22080141.D
o-Xylene	8,790	1.00	0.880	U	U	C22080141.D
1,2,3-Trichloropropane	8,790	1.00	0.750 g	U	U	C22080141.D
Isopropylbenzene	8,790	1.00	0.830 g	U	U	C22080141.D
1,3,5-Trimethylbenzene	8,790	1.00	0.830 g	U	U	C22080141.D
1,2,4-Trimethylbenzene	8,790	1.00	0.830 g	U	U	C22080141.D
1,3-Dichlorobenzene	8,790	1.00	0.750 g	U	U	C22080141.D
1,4-Dichlorobenzene	8,790	1.00	0.750 g	U	U	C22080141.D
1,2-Dichlorobenzene	8,790	1.00	0.750 g	U	U	C22080141.D
1,2,4-Trichlorobenzene	8,790	1.00	0.390 g	U	U	C22080141.D
Naphthalene	8,790	1.00	0.800 g	U	U	C22080141.D
1,2,3-Trichlorobenzene	8,790	1.00	0.390 g	U	U	C22080141.D
2-Methylnaphthalene	8,790	1.00	0.760 g	U	U	C22080141.D
TPH C4-C9	8,790	1.00	0.590 g	U	U	C22080141.D
TPH C10-C15	8,790	1.00	0.690 g	U	U	C22080141.D

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Sample Result Calculation Summary (Concentration)

EPA 8260C

Lab ID: 0006480-04 **Sample Name:** PSG-03

Analyte	t Sampling Time minutes	DF Dilution Factor	U Uptake Rate	M Initial Result ng	C Calculated Result µg/m³	File ID
Vinyl Chloride	8,580	1.00	0.810	U	U	C22080142.D
1,1-Dichloroethene	8,580	1.00	0.330	U	U	C22080142.D
Methylene Chloride	8,580	1.00	0.350 g	U	U	C22080142.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	8,580	1.00	0.890 g	U	U	C22080142.D
trans-1,2-Dichloroethene	8,580	1.00	0.440	U	U	C22080142.D
Methyl-t-butyl ether	8,580	1.00	0.500 g	U	U	C22080142.D
1,1-Dichloroethane	8,580	1.00	0.850	U	U	C22080142.D
cis-1,2-Dichloroethene	8,580	1.00	0.530	U	U	C22080142.D
Chloroform	8,580	1.00	0.350 g	U	U	C22080142.D
1,2-Dichloroethane	8,580	1.00	0.560	U	U	C22080142.D
1,1,1-Trichloroethane	8,580	1.00	1.050	U	U	C22080142.D
Carbon Tetrachloride	8,580	1.00	0.430 g	U	U	C22080142.D
Benzene	8,580	1.00	0.530	U	U	C22080142.D
Trichloroethene	8,580	1.00	0.330	U	U	C22080142.D
1,4-Dioxane	8,580	1.00	0.410 g	U	U	C22080142.D
1,1,2-Trichloroethane	8,580	1.00	0.330 g	U	U	C22080142.D
Toluene	8,580	1.00	0.400	U	U	C22080142.D
1,2-Dibromoethane (EDB)	8,580	1.00	0.390 g	U	U	C22080142.D
Tetrachloroethene	8,580	1.00	0.410	U	U	C22080142.D
1,1,1,2-Tetrachloroethane	8,580	1.00	0.410 g	U	U	C22080142.D
Chlorobenzene	8,580	1.00	0.850 g	U	U	C22080142.D
Ethylbenzene	8,580	1.00	0.850	U	U	C22080142.D
p & m-Xylene	8,580	1.00	0.880	U	U	C22080142.D
o-Xylene	8,580	1.00	0.880	U	U	C22080142.D
1,2,3-Trichloropropane	8,580	1.00	0.750 g	U	U	C22080142.D
Isopropylbenzene	8,580	1.00	0.830 g	U	U	C22080142.D
1,3,5-Trimethylbenzene	8,580	1.00	0.830 g	U	U	C22080142.D
1,2,4-Trimethylbenzene	8,580	1.00	0.830 g	U	U	C22080142.D
1,3-Dichlorobenzene	8,580	1.00	0.750 g	U	U	C22080142.D
1,4-Dichlorobenzene	8,580	1.00	0.750 g	U	U	C22080142.D
1,2-Dichlorobenzene	8,580	1.00	0.750 g	U	U	C22080142.D
1,2,4-Trichlorobenzene	8,580	1.00	0.390 g	U	U	C22080142.D
Naphthalene	8,580	1.00	0.800 g	U	U	C22080142.D
1,2,3-Trichlorobenzene	8,580	1.00	0.390 g	U	U	C22080142.D
2-Methylnaphthalene	8,580	1.00	0.760 g	U	U	C22080142.D
TPH C4-C9	8,580	1.00	0.590 g	U	U	C22080142.D
TPH C10-C15	8,580	1.00	0.690 g	U	U	C22080142.D

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Sample Result Calculation Summary (Concentration)

EPA 8260C

Lab ID: 0006480-05 **Sample Name:** PSG-04

Analyte	t Sampling Time minutes	DF Dilution Factor	U Uptake Rate	M Initial Result ng	C Calculated Result µg/m³	File ID
Vinyl Chloride	8,600	1.00	0.810	U	U	C22080143.D
1,1-Dichloroethene	8,600	1.00	0.330	U	U	C22080143.D
Methylene Chloride	8,600	1.00	0.350 g	U	U	C22080143.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	8,600	1.00	0.890 g	U	U	C22080143.D
trans-1,2-Dichloroethene	8,600	1.00	0.440	U	U	C22080143.D
Methyl-t-butyl ether	8,600	1.00	0.500 g	U	U	C22080143.D
1,1-Dichloroethane	8,600	1.00	0.850	U	U	C22080143.D
cis-1,2-Dichloroethene	8,600	1.00	0.530	U	U	C22080143.D
Chloroform	8,600	1.00	0.350 g	U	U	C22080143.D
1,2-Dichloroethane	8,600	1.00	0.560	U	U	C22080143.D
1,1,1-Trichloroethane	8,600	1.00	1.050	U	U	C22080143.D
Carbon Tetrachloride	8,600	1.00	0.430 g	U	U	C22080143.D
Benzene	8,600	1.00	0.530	U	U	C22080143.D
Trichloroethene	8,600	1.00	0.330	U	U	C22080143.D
1,4-Dioxane	8,600	1.00	0.410 g	U	U	C22080143.D
1,1,2-Trichloroethane	8,600	1.00	0.330 g	U	U	C22080143.D
Toluene	8,600	1.00	0.400	U	U	C22080143.D
1,2-Dibromoethane (EDB)	8,600	1.00	0.390 g	U	U	C22080143.D
Tetrachloroethene	8,600	1.00	0.410	U	U	C22080143.D
1,1,1,2-Tetrachloroethane	8,600	1.00	0.410 g	U	U	C22080143.D
Chlorobenzene	8,600	1.00	0.850 g	U	U	C22080143.D
Ethylbenzene	8,600	1.00	0.850	U	U	C22080143.D
p & m-Xylene	8,600	1.00	0.880	U	U	C22080143.D
o-Xylene	8,600	1.00	0.880	U	U	C22080143.D
1,2,3-Trichloropropane	8,600	1.00	0.750 g	U	U	C22080143.D
Isopropylbenzene	8,600	1.00	0.830 g	U	U	C22080143.D
1,3,5-Trimethylbenzene	8,600	1.00	0.830 g	U	U	C22080143.D
1,2,4-Trimethylbenzene	8,600	1.00	0.830 g	U	U	C22080143.D
1,3-Dichlorobenzene	8,600	1.00	0.750 g	U	U	C22080143.D
1,4-Dichlorobenzene	8,600	1.00	0.750 g	U	U	C22080143.D
1,2-Dichlorobenzene	8,600	1.00	0.750 g	U	U	C22080143.D
1,2,4-Trichlorobenzene	8,600	1.00	0.390 g	U	U	C22080143.D
Naphthalene	8,600	1.00	0.800 g	U	U	C22080143.D
1,2,3-Trichlorobenzene	8,600	1.00	0.390 g	U	U	C22080143.D
2-Methylnaphthalene	8,600	1.00	0.760 g	U	U	C22080143.D
TPH C4-C9	8,600	1.00	0.590 g	U	U	C22080143.D
TPH C10-C15	8,600	1.00	0.690 g	U	U	C22080143.D

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Sample Result Calculation Summary (Concentration)

EPA 8260C

Lab ID: 0006480-06 **Sample Name:** PSG-05

Analyte	t Sampling Time minutes	DF Dilution Factor	U Uptake Rate	M Initial Result ng	C Calculated Result µg/m³	File ID
Vinyl Chloride	8,550	1.00	0.810	U	U	C22080144.D
1,1-Dichloroethene	8,550	1.00	0.330	U	U	C22080144.D
Methylene Chloride	8,550	1.00	0.350 g	U	U	C22080144.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	8,550	1.00	0.890 g	U	U	C22080144.D
trans-1,2-Dichloroethene	8,550	1.00	0.440	U	U	C22080144.D
Methyl-t-butyl ether	8,550	1.00	0.500 g	U	U	C22080144.D
1,1-Dichloroethane	8,550	1.00	0.850	U	U	C22080144.D
cis-1,2-Dichloroethene	8,550	1.00	0.530	U	U	C22080144.D
Chloroform	8,550	1.00	0.350 g	U	U	C22080144.D
1,2-Dichloroethane	8,550	1.00	0.560	U	U	C22080144.D
1,1,1-Trichloroethane	8,550	1.00	1.050	U	U	C22080144.D
Carbon Tetrachloride	8,550	1.00	0.430 g	U	U	C22080144.D
Benzene	8,550	1.00	0.530	U	U	C22080144.D
Trichloroethene	8,550	1.00	0.330	U	U	C22080144.D
1,4-Dioxane	8,550	1.00	0.410 g	U	U	C22080144.D
1,1,2-Trichloroethane	8,550	1.00	0.330 g	U	U	C22080144.D
Toluene	8,550	1.00	0.400	U	U	C22080144.D
1,2-Dibromoethane (EDB)	8,550	1.00	0.390 g	U	U	C22080144.D
Tetrachloroethene	8,550	1.00	0.410	U	U	C22080144.D
1,1,1,2-Tetrachloroethane	8,550	1.00	0.410 g	U	U	C22080144.D
Chlorobenzene	8,550	1.00	0.850 g	U	U	C22080144.D
Ethylbenzene	8,550	1.00	0.850	U	U	C22080144.D
p & m-Xylene	8,550	1.00	0.880	U	U	C22080144.D
o-Xylene	8,550	1.00	0.880	U	U	C22080144.D
1,2,3-Trichloropropane	8,550	1.00	0.750 g	U	U	C22080144.D
Isopropylbenzene	8,550	1.00	0.830 g	U	U	C22080144.D
1,3,5-Trimethylbenzene	8,550	1.00	0.830 g	U	U	C22080144.D
1,2,4-Trimethylbenzene	8,550	1.00	0.830 g	U	U	C22080144.D
1,3-Dichlorobenzene	8,550	1.00	0.750 g	U	U	C22080144.D
1,4-Dichlorobenzene	8,550	1.00	0.750 g	U	U	C22080144.D
1,2-Dichlorobenzene	8,550	1.00	0.750 g	U	U	C22080144.D
1,2,4-Trichlorobenzene	8,550	1.00	0.390 g	U	U	C22080144.D
Naphthalene	8,550	1.00	0.800 g	U	U	C22080144.D
1,2,3-Trichlorobenzene	8,550	1.00	0.390 g	U	U	C22080144.D
2-Methylnaphthalene	8,550	1.00	0.760 g	U	U	C22080144.D
TPH C4-C9	8,550	1.00	0.590 g	U	U	C22080144.D
TPH C10-C15	8,550	1.00	0.690 g	13693.03	2,320	C22080144.D

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Sample Result Calculation Summary (Concentration)

EPA 8260C

Lab ID: 0006480-07 **Sample Name:** PSG-01 Dup

Analyte	t Sampling Time minutes	DF Dilution Factor	U Uptake Rate	M Initial Result ng	C Calculated Result µg/m³	File ID
Vinyl Chloride	8,790	1.00	0.810	U	U	C22081606.D
1,1-Dichloroethene	8,790	1.00	0.330	U	U	C22081606.D
Methylene Chloride	8,790	1.00	0.350 g	U	U	C22081606.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	8,790	1.00	0.890 g	U	U	C22081606.D
trans-1,2-Dichloroethene	8,790	1.00	0.440	U	U	C22081606.D
Methyl-t-butyl ether	8,790	1.00	0.500 g	U	U	C22081606.D
1,1-Dichloroethane	8,790	1.00	0.850	U	U	C22081606.D
cis-1,2-Dichloroethene	8,790	1.00	0.530	U	U	C22081606.D
Chloroform	8,790	1.00	0.350 g	U	U	C22081606.D
1,2-Dichloroethane	8,790	1.00	0.560	U	U	C22081606.D
1,1,1-Trichloroethane	8,790	1.00	1.050	U	U	C22081606.D
Carbon Tetrachloride	8,790	1.00	0.430 g	U	U	C22081606.D
Benzene	8,790	1.00	0.530	29.35	6.30	C22081606.D
Trichloroethene	8,790	1.00	0.330	U	U	C22081606.D
1,4-Dioxane	8,790	1.00	0.410 g	U	U	C22081606.D
1,1,2-Trichloroethane	8,790	1.00	0.330 g	U	U	C22081606.D
Toluene	8,790	1.00	0.400	95.90	27.3	C22081606.D
1,2-Dibromoethane (EDB)	8,790	1.00	0.390 g	U	U	C22081606.D
Tetrachloroethene	8,790	1.00	0.410	U	U	C22081606.D
1,1,1,2-Tetrachloroethane	8,790	1.00	0.410 g	U	U	C22081606.D
Chlorobenzene	8,790	1.00	0.850 g	U	U	C22081606.D
Ethylbenzene	8,790	1.00	0.850	U	U	C22081606.D
p & m-Xylene	8,790	1.00	0.880	U	U	C22081606.D
o-Xylene	8,790	1.00	0.880	U	U	C22081606.D
1,2,3-Trichloropropane	8,790	1.00	0.750 g	U	U	C22081606.D
Isopropylbenzene	8,790	1.00	0.830 g	U	U	C22081606.D
1,3,5-Trimethylbenzene	8,790	1.00	0.830 g	U	U	C22081606.D
1,2,4-Trimethylbenzene	8,790	1.00	0.830 g	U	U	C22081606.D
1,3-Dichlorobenzene	8,790	1.00	0.750 g	U	U	C22081606.D
1,4-Dichlorobenzene	8,790	1.00	0.750 g	U	U	C22081606.D
1,2-Dichlorobenzene	8,790	1.00	0.750 g	U	U	C22081606.D
1,2,4-Trichlorobenzene	8,790	1.00	0.390 g	U	U	C22081606.D
Naphthalene	8,790	1.00	0.800 g	U	U	C22081606.D
1,2,3-Trichlorobenzene	8,790	1.00	0.390 g	U	U	C22081606.D
2-Methylnaphthalene	8,790	1.00	0.760 g	U	U	C22081606.D
TPH C4-C9	8,790	1.00	0.590 g	U	U	C22081606.D
TPH C10-C15	8,790	1.00	0.690 g	U	U	C22081606.D

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Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Calculations:

$$C = \frac{1000 \times M \times DF}{U \times t}$$

where:
- C = concentration ($\mu g/m^3$)
- M = mass (ng)
- DF = dilution factor
- t = sampling time (minutes)
- U = compound specific uptake rate

[g] Uptake rate determined using Graham's Law of Diffusion.

Reference: Federal Register/Vol. 79, No. 125/June 30, 2014

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Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Method Detection and Reporting Limit Calculations (Concentration)

EPA 8260C

Lab ID: 0006480-01 **Sample Name:** Trip 1

Analyte	t Sampling Time minutes	DF Dilution Factor	U Uptake Rate	M Initial LOQ ng	C Calculated LOQ µg/m³
Vinyl Chloride	8,790	1.00	0.810	10.0	1.40
1,1-Dichloroethene	8,790	1.00	0.330	10.0	3.45
Methylene Chloride	8,790	1.00	0.350 g	10.0	3.25
1,1,2-Trichlorotrifluoroethane (Fr.113)	8,790	1.00	0.890 g	10.0	1.28
trans-1,2-Dichloroethene	8,790	1.00	0.440	10.0	2.59
Methyl-t-butyl ether	8,790	1.00	0.500 g	25.0	5.69
1,1-Dichloroethane	8,790	1.00	0.850	10.0	1.34
cis-1,2-Dichloroethene	8,790	1.00	0.530	10.0	2.15
Chloroform	8,790	1.00	0.350 g	10.0	3.25
1,2-Dichloroethane	8,790	1.00	0.560	10.0	2.03
1,1,1-Trichloroethane	8,790	1.00	1.050	10.0	1.08
Carbon Tetrachloride	8,790	1.00	0.430 g	10.0	2.65
Benzene	8,790	1.00	0.530	25.0	5.37
Trichloroethene	8,790	1.00	0.330	10.0	3.45
1,4-Dioxane	8,790	1.00	0.410 g	10.0	2.77
1,1,2-Trichloroethane	8,790	1.00	0.330 g	10.0	3.45
Toluene	8,790	1.00	0.400	25.0	7.11
1,2-Dibromoethane (EDB)	8,790	1.00	0.390 g	10.0	2.92
Tetrachloroethene	8,790	1.00	0.410	10.0	2.77
1,1,1,2-Tetrachloroethane	8,790	1.00	0.410 g	10.0	2.77
Chlorobenzene	8,790	1.00	0.850 g	10.0	1.34
Ethylbenzene	8,790	1.00	0.850	25.0	3.35
p & m-Xylene	8,790	1.00	0.880	25.0	3.23
o-Xylene	8,790	1.00	0.880	25.0	3.23
1,2,3-Trichloropropane	8,790	1.00	0.750 g	10.0	1.52
Isopropylbenzene	8,790	1.00	0.830 g	25.0	3.43
1,3,5-Trimethylbenzene	8,790	1.00	0.830 g	25.0	3.43
1,2,4-Trimethylbenzene	8,790	1.00	0.830 g	25.0	3.43
1,3-Dichlorobenzene	8,790	1.00	0.750 g	10.0	1.52
1,4-Dichlorobenzene	8,790	1.00	0.750 g	10.0	1.52
1,2-Dichlorobenzene	8,790	1.00	0.750 g	10.0	1.52
1,2,4-Trichlorobenzene	8,790	1.00	0.390 g	10.0	2.92
Naphthalene	8,790	1.00	0.800 g	25.0	3.56
1,2,3-Trichlorobenzene	8,790	1.00	0.390 g	10.0	2.92
2-Methylnaphthalene	8,790	1.00	0.760 g	25.0	3.74
TPH C4-C9	8,790	1.00	0.590 g	5,000.0	964
TPH C10-C15	8,790	1.00	0.690 g	5,000.0	824

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Method Detection and Reporting Limit Calculations (Concentration)

EPA 8260C

Lab ID: 0006480-02 **Sample Name:** PSG-01

Analyte	t Sampling Time minutes	DF Dilution Factor	U Uptake Rate	M Initial LOQ ng	C Calculated LOQ µg/m³
Vinyl Chloride	8,790	1.00	0.810	10.0	1.40
1,1-Dichloroethene	8,790	1.00	0.330	10.0	3.45
Methylene Chloride	8,790	1.00	0.350 g	10.0	3.25
1,1,2-Trichlorotrifluoroethane (Fr.113)	8,790	1.00	0.890 g	10.0	1.28
trans-1,2-Dichloroethene	8,790	1.00	0.440	10.0	2.59
Methyl-t-butyl ether	8,790	1.00	0.500 g	25.0	5.69
1,1-Dichloroethane	8,790	1.00	0.850	10.0	1.34
cis-1,2-Dichloroethene	8,790	1.00	0.530	10.0	2.15
Chloroform	8,790	1.00	0.350 g	10.0	3.25
1,2-Dichloroethane	8,790	1.00	0.560	10.0	2.03
1,1,1-Trichloroethane	8,790	1.00	1.050	10.0	1.08
Carbon Tetrachloride	8,790	1.00	0.430 g	10.0	2.65
Benzene	8,790	1.00	0.530	25.0	5.37
Trichloroethene	8,790	1.00	0.330	10.0	3.45
1,4-Dioxane	8,790	1.00	0.410 g	10.0	2.77
1,1,2-Trichloroethane	8,790	1.00	0.330 g	10.0	3.45
Toluene	8,790	1.00	0.400	25.0	7.11
1,2-Dibromoethane (EDB)	8,790	1.00	0.390 g	10.0	2.92
Tetrachloroethene	8,790	1.00	0.410	10.0	2.77
1,1,1,2-Tetrachloroethane	8,790	1.00	0.410 g	10.0	2.77
Chlorobenzene	8,790	1.00	0.850 g	10.0	1.34
Ethylbenzene	8,790	1.00	0.850	25.0	3.35
p & m-Xylene	8,790	1.00	0.880	25.0	3.23
o-Xylene	8,790	1.00	0.880	25.0	3.23
1,2,3-Trichloropropane	8,790	1.00	0.750 g	10.0	1.52
Isopropylbenzene	8,790	1.00	0.830 g	25.0	3.43
1,3,5-Trimethylbenzene	8,790	1.00	0.830 g	25.0	3.43
1,2,4-Trimethylbenzene	8,790	1.00	0.830 g	25.0	3.43
1,3-Dichlorobenzene	8,790	1.00	0.750 g	10.0	1.52
1,4-Dichlorobenzene	8,790	1.00	0.750 g	10.0	1.52
1,2-Dichlorobenzene	8,790	1.00	0.750 g	10.0	1.52
1,2,4-Trichlorobenzene	8,790	1.00	0.390 g	10.0	2.92
Naphthalene	8,790	1.00	0.800 g	25.0	3.56
1,2,3-Trichlorobenzene	8,790	1.00	0.390 g	10.0	2.92
2-Methylnaphthalene	8,790	1.00	0.760 g	25.0	3.74
TPH C4-C9	8,790	1.00	0.590 g	5,000.0	964
TPH C10-C15	8,790	1.00	0.690 g	5,000.0	824

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Method Detection and Reporting Limit Calculations (Concentration)

EPA 8260C

Lab ID: 0006480-03 **Sample Name:** PSG-02

Analyte	t Sampling Time minutes	DF Dilution Factor	U Uptake Rate	M Initial LOQ ng	C Calculated LOQ µg/m³
Vinyl Chloride	8,790	1.00	0.810	10.0	1.40
1,1-Dichloroethene	8,790	1.00	0.330	10.0	3.45
Methylene Chloride	8,790	1.00	0.350 g	10.0	3.25
1,1,2-Trichlorotrifluoroethane (Fr.113)	8,790	1.00	0.890 g	10.0	1.28
trans-1,2-Dichloroethene	8,790	1.00	0.440	10.0	2.59
Methyl-t-butyl ether	8,790	1.00	0.500 g	25.0	5.69
1,1-Dichloroethane	8,790	1.00	0.850	10.0	1.34
cis-1,2-Dichloroethene	8,790	1.00	0.530	10.0	2.15
Chloroform	8,790	1.00	0.350 g	10.0	3.25
1,2-Dichloroethane	8,790	1.00	0.560	10.0	2.03
1,1,1-Trichloroethane	8,790	1.00	1.050	10.0	1.08
Carbon Tetrachloride	8,790	1.00	0.430 g	10.0	2.65
Benzene	8,790	1.00	0.530	25.0	5.37
Trichloroethene	8,790	1.00	0.330	10.0	3.45
1,4-Dioxane	8,790	1.00	0.410 g	10.0	2.77
1,1,2-Trichloroethane	8,790	1.00	0.330 g	10.0	3.45
Toluene	8,790	1.00	0.400	25.0	7.11
1,2-Dibromoethane (EDB)	8,790	1.00	0.390 g	10.0	2.92
Tetrachloroethene	8,790	1.00	0.410	10.0	2.77
1,1,1,2-Tetrachloroethane	8,790	1.00	0.410 g	10.0	2.77
Chlorobenzene	8,790	1.00	0.850 g	10.0	1.34
Ethylbenzene	8,790	1.00	0.850	25.0	3.35
p & m-Xylene	8,790	1.00	0.880	25.0	3.23
o-Xylene	8,790	1.00	0.880	25.0	3.23
1,2,3-Trichloropropane	8,790	1.00	0.750 g	10.0	1.52
Isopropylbenzene	8,790	1.00	0.830 g	25.0	3.43
1,3,5-Trimethylbenzene	8,790	1.00	0.830 g	25.0	3.43
1,2,4-Trimethylbenzene	8,790	1.00	0.830 g	25.0	3.43
1,3-Dichlorobenzene	8,790	1.00	0.750 g	10.0	1.52
1,4-Dichlorobenzene	8,790	1.00	0.750 g	10.0	1.52
1,2-Dichlorobenzene	8,790	1.00	0.750 g	10.0	1.52
1,2,4-Trichlorobenzene	8,790	1.00	0.390 g	10.0	2.92
Naphthalene	8,790	1.00	0.800 g	25.0	3.56
1,2,3-Trichlorobenzene	8,790	1.00	0.390 g	10.0	2.92
2-Methylnaphthalene	8,790	1.00	0.760 g	25.0	3.74
TPH C4-C9	8,790	1.00	0.590 g	5,000.0	964
TPH C10-C15	8,790	1.00	0.690 g	5,000.0	824

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Method Detection and Reporting Limit Calculations (Concentration)

EPA 8260C

Lab ID: 0006480-04 **Sample Name:** PSG-03

Analyte	t Sampling Time minutes	DF Dilution Factor	U Uptake Rate	M Initial LOQ ng	C Calculated LOQ µg/m³
Vinyl Chloride	8,580	1.00	0.810	10.0	1.44
1,1-Dichloroethene	8,580	1.00	0.330	10.0	3.53
Methylene Chloride	8,580	1.00	0.350 g	10.0	3.33
1,1,2-Trichlorotrifluoroethane (Fr.113)	8,580	1.00	0.890 g	10.0	1.31
trans-1,2-Dichloroethene	8,580	1.00	0.440	10.0	2.65
Methyl-t-butyl ether	8,580	1.00	0.500 g	25.0	5.83
1,1-Dichloroethane	8,580	1.00	0.850	10.0	1.37
cis-1,2-Dichloroethene	8,580	1.00	0.530	10.0	2.20
Chloroform	8,580	1.00	0.350 g	10.0	3.33
1,2-Dichloroethane	8,580	1.00	0.560	10.0	2.08
1,1,1-Trichloroethane	8,580	1.00	1.050	10.0	1.11
Carbon Tetrachloride	8,580	1.00	0.430 g	10.0	2.71
Benzene	8,580	1.00	0.530	25.0	5.50
Trichloroethene	8,580	1.00	0.330	10.0	3.53
1,4-Dioxane	8,580	1.00	0.410 g	10.0	2.84
1,1,2-Trichloroethane	8,580	1.00	0.330 g	10.0	3.53
Toluene	8,580	1.00	0.400	25.0	7.28
1,2-Dibromoethane (EDB)	8,580	1.00	0.390 g	10.0	2.99
Tetrachloroethene	8,580	1.00	0.410	10.0	2.84
1,1,1,2-Tetrachloroethane	8,580	1.00	0.410 g	10.0	2.84
Chlorobenzene	8,580	1.00	0.850 g	10.0	1.37
Ethylbenzene	8,580	1.00	0.850	25.0	3.43
p & m-Xylene	8,580	1.00	0.880	25.0	3.31
o-Xylene	8,580	1.00	0.880	25.0	3.31
1,2,3-Trichloropropane	8,580	1.00	0.750 g	10.0	1.55
Isopropylbenzene	8,580	1.00	0.830 g	25.0	3.51
1,3,5-Trimethylbenzene	8,580	1.00	0.830 g	25.0	3.51
1,2,4-Trimethylbenzene	8,580	1.00	0.830 g	25.0	3.51
1,3-Dichlorobenzene	8,580	1.00	0.750 g	10.0	1.55
1,4-Dichlorobenzene	8,580	1.00	0.750 g	10.0	1.55
1,2-Dichlorobenzene	8,580	1.00	0.750 g	10.0	1.55
1,2,4-Trichlorobenzene	8,580	1.00	0.390 g	10.0	2.99
Naphthalene	8,580	1.00	0.800 g	25.0	3.64
1,2,3-Trichlorobenzene	8,580	1.00	0.390 g	10.0	2.99
2-Methylnaphthalene	8,580	1.00	0.760 g	25.0	3.83
TPH C4-C9	8,580	1.00	0.590 g	5,000.0	988
TPH C10-C15	8,580	1.00	0.690 g	5,000.0	845

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Method Detection and Reporting Limit Calculations (Concentration)

EPA 8260C

Lab ID: 0006480-05 **Sample Name:** PSG-04

Analyte	t Sampling Time minutes	DF Dilution Factor	U Uptake Rate	M Initial LOQ ng	C Calculated LOQ µg/m³
Vinyl Chloride	8,600	1.00	0.810	10.0	1.44
1,1-Dichloroethene	8,600	1.00	0.330	10.0	3.52
Methylene Chloride	8,600	1.00	0.350 g	10.0	3.32
1,1,2-Trichlorotrifluoroethane (Fr.113)	8,600	1.00	0.890 g	10.0	1.31
trans-1,2-Dichloroethene	8,600	1.00	0.440	10.0	2.64
Methyl-t-butyl ether	8,600	1.00	0.500 g	25.0	5.81
1,1-Dichloroethane	8,600	1.00	0.850	10.0	1.37
cis-1,2-Dichloroethene	8,600	1.00	0.530	10.0	2.19
Chloroform	8,600	1.00	0.350 g	10.0	3.32
1,2-Dichloroethane	8,600	1.00	0.560	10.0	2.08
1,1,1-Trichloroethane	8,600	1.00	1.050	10.0	1.11
Carbon Tetrachloride	8,600	1.00	0.430 g	10.0	2.70
Benzene	8,600	1.00	0.530	25.0	5.48
Trichloroethene	8,600	1.00	0.330	10.0	3.52
1,4-Dioxane	8,600	1.00	0.410 g	10.0	2.84
1,1,2-Trichloroethane	8,600	1.00	0.330 g	10.0	3.52
Toluene	8,600	1.00	0.400	25.0	7.27
1,2-Dibromoethane (EDB)	8,600	1.00	0.390 g	10.0	2.98
Tetrachloroethene	8,600	1.00	0.410	10.0	2.84
1,1,1,2-Tetrachloroethane	8,600	1.00	0.410 g	10.0	2.84
Chlorobenzene	8,600	1.00	0.850 g	10.0	1.37
Ethylbenzene	8,600	1.00	0.850	25.0	3.42
p & m-Xylene	8,600	1.00	0.880	25.0	3.30
o-Xylene	8,600	1.00	0.880	25.0	3.30
1,2,3-Trichloropropane	8,600	1.00	0.750 g	10.0	1.55
Isopropylbenzene	8,600	1.00	0.830 g	25.0	3.50
1,3,5-Trimethylbenzene	8,600	1.00	0.830 g	25.0	3.50
1,2,4-Trimethylbenzene	8,600	1.00	0.830 g	25.0	3.50
1,3-Dichlorobenzene	8,600	1.00	0.750 g	10.0	1.55
1,4-Dichlorobenzene	8,600	1.00	0.750 g	10.0	1.55
1,2-Dichlorobenzene	8,600	1.00	0.750 g	10.0	1.55
1,2,4-Trichlorobenzene	8,600	1.00	0.390 g	10.0	2.98
Naphthalene	8,600	1.00	0.800 g	25.0	3.63
1,2,3-Trichlorobenzene	8,600	1.00	0.390 g	10.0	2.98
2-Methylnaphthalene	8,600	1.00	0.760 g	25.0	3.82
TPH C4-C9	8,600	1.00	0.590 g	5,000.0	985
TPH C10-C15	8,600	1.00	0.690 g	5,000.0	843

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Method Detection and Reporting Limit Calculations (Concentration)

EPA 8260C

Lab ID: 0006480-06 **Sample Name:** PSG-05

Analyte	t Sampling Time minutes	DF Dilution Factor	U Uptake Rate	M Initial LOQ ng	C Calculated LOQ µg/m³
Vinyl Chloride	8,550	1.00	0.810	10.0	1.44
1,1-Dichloroethene	8,550	1.00	0.330	10.0	3.54
Methylene Chloride	8,550	1.00	0.350 g	10.0	3.34
1,1,2-Trichlorotrifluoroethane (Fr.113)	8,550	1.00	0.890 g	10.0	1.31
trans-1,2-Dichloroethene	8,550	1.00	0.440	10.0	2.66
Methyl-t-butyl ether	8,550	1.00	0.500 g	25.0	5.85
1,1-Dichloroethane	8,550	1.00	0.850	10.0	1.38
cis-1,2-Dichloroethene	8,550	1.00	0.530	10.0	2.21
Chloroform	8,550	1.00	0.350 g	10.0	3.34
1,2-Dichloroethane	8,550	1.00	0.560	10.0	2.09
1,1,1-Trichloroethane	8,550	1.00	1.050	10.0	1.11
Carbon Tetrachloride	8,550	1.00	0.430 g	10.0	2.72
Benzene	8,550	1.00	0.530	25.0	5.52
Trichloroethene	8,550	1.00	0.330	10.0	3.54
1,4-Dioxane	8,550	1.00	0.410 g	10.0	2.85
1,1,2-Trichloroethane	8,550	1.00	0.330 g	10.0	3.54
Toluene	8,550	1.00	0.400	25.0	7.31
1,2-Dibromoethane (EDB)	8,550	1.00	0.390 g	10.0	3.00
Tetrachloroethene	8,550	1.00	0.410	10.0	2.85
1,1,1,2-Tetrachloroethane	8,550	1.00	0.410 g	10.0	2.85
Chlorobenzene	8,550	1.00	0.850 g	10.0	1.38
Ethylbenzene	8,550	1.00	0.850	25.0	3.44
p & m-Xylene	8,550	1.00	0.880	25.0	3.32
o-Xylene	8,550	1.00	0.880	25.0	3.32
1,2,3-Trichloropropane	8,550	1.00	0.750 g	10.0	1.56
Isopropylbenzene	8,550	1.00	0.830 g	25.0	3.52
1,3,5-Trimethylbenzene	8,550	1.00	0.830 g	25.0	3.52
1,2,4-Trimethylbenzene	8,550	1.00	0.830 g	25.0	3.52
1,3-Dichlorobenzene	8,550	1.00	0.750 g	10.0	1.56
1,4-Dichlorobenzene	8,550	1.00	0.750 g	10.0	1.56
1,2-Dichlorobenzene	8,550	1.00	0.750 g	10.0	1.56
1,2,4-Trichlorobenzene	8,550	1.00	0.390 g	10.0	3.00
Naphthalene	8,550	1.00	0.800 g	25.0	3.65
1,2,3-Trichlorobenzene	8,550	1.00	0.390 g	10.0	3.00
2-Methylnaphthalene	8,550	1.00	0.760 g	25.0	3.85
TPH C4-C9	8,550	1.00	0.590 g	5,000.0	991
TPH C10-C15	8,550	1.00	0.690 g	5,000.0	848

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CERTIFICATE OF ANALYSIS

Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Method Detection and Reporting Limit Calculations (Concentration)

EPA 8260C

Lab ID: 0006480-07 **Sample Name:** PSG-01 Dup

Analyte	t Sampling Time minutes	DF Dilution Factor	U Uptake Rate	M Initial LOQ ng	C Calculated LOQ µg/m³
Vinyl Chloride	8,790	1.00	0.810	10.0	1.40
1,1-Dichloroethene	8,790	1.00	0.330	10.0	3.45
Methylene Chloride	8,790	1.00	0.350 g	10.0	3.25
1,1,2-Trichlorotrifluoroethane (Fr.113)	8,790	1.00	0.890 g	10.0	1.28
trans-1,2-Dichloroethene	8,790	1.00	0.440	10.0	2.59
Methyl-t-butyl ether	8,790	1.00	0.500 g	25.0	5.69
1,1-Dichloroethane	8,790	1.00	0.850	10.0	1.34
cis-1,2-Dichloroethene	8,790	1.00	0.530	10.0	2.15
Chloroform	8,790	1.00	0.350 g	10.0	3.25
1,2-Dichloroethane	8,790	1.00	0.560	10.0	2.03
1,1,1-Trichloroethane	8,790	1.00	1.050	10.0	1.08
Carbon Tetrachloride	8,790	1.00	0.430 g	10.0	2.65
Benzene	8,790	1.00	0.530	25.0	5.37
Trichloroethene	8,790	1.00	0.330	10.0	3.45
1,4-Dioxane	8,790	1.00	0.410 g	10.0	2.77
1,1,2-Trichloroethane	8,790	1.00	0.330 g	10.0	3.45
Toluene	8,790	1.00	0.400	25.0	7.11
1,2-Dibromoethane (EDB)	8,790	1.00	0.390 g	10.0	2.92
Tetrachloroethene	8,790	1.00	0.410	10.0	2.77
1,1,1,2-Tetrachloroethane	8,790	1.00	0.410 g	10.0	2.77
Chlorobenzene	8,790	1.00	0.850 g	10.0	1.34
Ethylbenzene	8,790	1.00	0.850	25.0	3.35
p & m-Xylene	8,790	1.00	0.880	25.0	3.23
o-Xylene	8,790	1.00	0.880	25.0	3.23
1,2,3-Trichloropropane	8,790	1.00	0.750 g	10.0	1.52
Isopropylbenzene	8,790	1.00	0.830 g	25.0	3.43
1,3,5-Trimethylbenzene	8,790	1.00	0.830 g	25.0	3.43
1,2,4-Trimethylbenzene	8,790	1.00	0.830 g	25.0	3.43
1,3-Dichlorobenzene	8,790	1.00	0.750 g	10.0	1.52
1,4-Dichlorobenzene	8,790	1.00	0.750 g	10.0	1.52
1,2-Dichlorobenzene	8,790	1.00	0.750 g	10.0	1.52
1,2,4-Trichlorobenzene	8,790	1.00	0.390 g	10.0	2.92
Naphthalene	8,790	1.00	0.800 g	25.0	3.56
1,2,3-Trichlorobenzene	8,790	1.00	0.390 g	10.0	2.92
2-Methylnaphthalene	8,790	1.00	0.760 g	25.0	3.74
TPH C4-C9	8,790	1.00	0.590 g	5,000.0	964
TPH C10-C15	8,790	1.00	0.690 g	5,000.0	824

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Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Laboratory Certification List

Certification ID	Certification No.	Description	Expires	Project Required
Alaska CS-LAP	19-002	Alaska Department of Environmental Conservation	01/31/2023	
DoD-ELAP	L20-532-R1	United States Department of Defense Environmental Laboratory Accreditation	12/31/2022	
ISO/IEC 17025:2017	L20-532	General Requirements for the Competence of Testing and Calibration Laboratories	12/31/2022	
NEFAP	72690/L20-533	TNI National Environmental Field Activities Program (NEFAP)	12/31/2022	
NY-NELAC	12097	New York Department of Health	04/01/2023	
Utah-NELAC	MD010912021-9	Utah Department of Health	12/31/2022	

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Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Qualifiers/Notes and Definitions

General Definitions:

DF	Dilution Factor
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
NA	Not Applicable
Q	Qualifier
RPD	Relative Percent Difference
RT	Retention Times in Minutes
RRT	Evaluation of Relative Retention Times in RRT Units (qualified if outside $\pm$0.06 control limits)
3σ	Uncertainty
$\notin$	Compound not on scope of accreditation
+	values are outside method/contract required QC limits
$\varnothing$	Compound not on scope of accreditation and analyzed with a one-point calibration

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Terracon	**Site Name:**	Tarheel Army Missile Plant	**Beacon Proposal:**	220705H02
2401 Brentwood Road, Suite 107	**Site Location:**	Burlington, NC	**Lab Work Order:**	0006480
Raleigh, NC 27604	**Project Manager:**	Ethan Dinwiddie	**Reported:**	08/22/2022

Sample Management Records

BEACON ENVIRONMENTAL

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or email help@beacon-usa.com

PASSIVE SOIL GAS SAMPLES CHAIN-OF-CUSTODY

Project Information	Client Information	
Site Name: Tarheel Army Missile Plant	Company Name: Terracon Consultants Inc	Project Manager: Dan Malone
	Office Location: 2401 Brentwood Rd. Burlington, NC 27604	Client PO:
Site Location: Burlington, NC	Submitted by: Ethan Dinwiddie	Turn around time (check one): ☒ Normal ☐ Rush (specify) ____ days
	Email: Ethan.Dinwiddie@terracon.com	

Field Sample ID	Start Date	Start Time	Stop Date	Stop Time	Sampling Hole Depth ☐ cm ☒ inches	Surface Type (Soil, Asphalt, Concrete, Gravel)	Optional Information (Location Description, Sample Condition, PID / FID Readings, etc)
PSG-01	7/19	1300	7/25	1530	36	Soil	
PSG-02	7/19	1315	7/25	1545	36	Soil	
PSG-03	7/21	1130	7/27	1030	36	Soil	
PSG-04	7/22	1500	7/28	1420	36	Soil	
PSG-05	7/19	1730	7/25	1600	36	Soil	
Trip 1	–	–	–	–	–	–	08/01/22 [illegible]

Special Instructions:

Relinquished by (signature): [signature]	Date / Time: 7/23/22 / 2000	Received by (signature): [signature]	Date / Time: 08/01/22 1620
Relinquished by (signature):	Date / Time:	Received by (signature):	Date / Time:
For Lab Use Only	Beacon Job No: 6480	Beacon Proposal: 220705H02	Analytical Method:
Courier Name: Fedex	Shipment Condition: good	Custody Seal Intact: ☒ Yes ☐ No ☐ n/a	Custody Seal No: 4712367

Pg 1 of 1

Report of Analysis

Terracon Consultants, Inc.
2401 Brentwood Road
Suite 107 I
Raleigh, NC 27604
Attention: Ethan Dinwiddie

Project Name: TAMP

Project Number: 7021P145

Lot Number:**XJ29009**

Date Completed:11/21/2022

11/21/2022 11:27 PM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.
This report shall not be reproduced, except in its entirety, without the written approval of Pace Analytical Services, LLC.

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
Terracon Consultants, Inc.
Lot Number: XJ29009

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Additionally, the DoD QSM version 5.4 has been followed for these samples. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs, the DoD QSM, or policies are qualified on the results page or discussed below.

Pace is a DoD/DOE accredited laboratory; however, the following analyses are currently not listed on our DoD/DOE scope of accreditation: Drinking Water: pH EPA 150.1, Turbidity EPA 18.01, Metals EPA 200.7 & 200.8, Mercury EPA 245.1, Anions EPA 300.0, Cyanide EPA 335.4, Nitrates EPA 353.2, Orthophosphate & Phosphorus EPA 365.1, EDB/DBCP EPA 504.1, HPC SIMPLATE, Color SM 2120 B-2011, Alkalinity SM 2320 B-2011, Specific Conductance SM 2510 B-2011, Residue-filterable (TDS) SM 2540 C, Calcium Hardness (CaCO2) SM 3500-Ca B-2011, TRC SM 4500 Cl G-2011, pH SM 4500 H=B-2011, E.Coli, Total Coliform; Non-Potable Water: Metals EPA 200.7, Strontium EPA 200.8, Chlorate EPA 300.0, Cyanide EPA 335.4, Phenolics EPA 420.4, 2-Methyl-4,6-Dinitrophenol EPA 625.1, Propane RSK-175, Specific Conductance SM 2510 B-2011, Salinity SM250 B, Residue- total SM 2540 B, Sulfite SM 4500 SO32- B-2011, Amenable Cyanide SM 4500-CN- G-2011, BOD & CBOD SM 5210 B, MBAS SM 5540 C-2011; Solid and Chemical Materials: Boron & Titanium SW-846 6010D, Boron, Molybdenum, & Titanium SW-846 6020B, Alcohols & Glycols SW-846 8015C, Pentachlorophenol SW-846 8151A, Ethyl Acetate, Hexane, & n-Hexane SW-846 8260D, SVOC 1,4-Dioxane, 3&4-Methylphenols, 4-Dimethyl aminoazobenzene, 1,4-Naphthoquinone, 3,5-Dinitroaniline, PETN SW-846 8270E, Amenable Cyanide SW-846 9012B; Boron & Titanium SW-846 6010D, Molybdenum SW-846 6020B, Ethylene Glycol SW-846 8015B, Pentachlorophenol SW-846 8151A, Chloroprene SW-846 8260B, SVOC 1,3,5-Trinitrobenzene, 1,4-Dioxane, 1,4-Naphthoquinone, 1,4-Phenylenediamine, 2,5-Dinitrotoluene, 2,6-Dinitrotoluene, 3-Methylcholanthrene, 4- Aminobiphenyl, 4-Dimethyl aminoazobenzene, 4-Nitroquinoline-1-oxide, 7,12- Dimethylbenzo(a)anthracene, Chlorobenzilate, Diallate, Ethyl methanesulfonate, Isodrin, Isosafrole, Methyl methanesulfonate, n-Nitrosomethylethylamine, n-Nitrosomorpholine, n-Nitrosopiperidine, Piperonyl butoxide, Pronamide, Safrole, 3,5-Dinitroaniline, PETN SW-846 8270E, Oil & Grease SW-846 9071B.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

VOA 8260D

Sample XJ29009-009 (TB-01) was received with an air bubble > 6 mm in the two sample vials.

The initial calibration verification (ICV) associated with sample(s) XJ29009-001, XJ29009-002, XJ29009-003, XJ29009-004, XJ29009-006, XJ29009-007, and XJ29009-009 exceeded control criteria for analyte: 112-trichloro-122-trifluoroethane (129%). The data has been reported.

XJ29009-001 (SW-1) (Run 1) (Analysis Batch 59671)
XJ29009-002 (SW-1A) (Run 1) (Analysis Batch 59671)
XJ29009-003 (SW-1B) (Run 1) (Analysis Batch 59671)
XJ29009-004 (SW-2) (Run 1) (Analysis Batch 59671)
XJ29009-006 (SW-3) (Run 1) (Analysis Batch 59671)
XJ29009-007 (SW-3A) (Run 1) (Analysis Batch 59671)
XJ29009-009 (TB-01) (Run 1) (Analysis Batch 59671)

The continuing calibration verification (CCV) associated with sample XJ29009-005, recovered above the upper control limit for acetone. The sample associated with this CCV were non-detect or below LOQ for the affected analytes; therefore, the data has been reported.

XJ29009-005 (SW-2A) (Run 2) (Analysis Batch 60463)

The recovery of freon is high and outside acceptance limits in the ICV for the run 1 of sample XJ29009-008. The sample was reanalyzed and the reanalysis met acceptance criteria, but was performed outside holding time. Both run 1 and run 2 have been reported.

XJ29009-008 (DUP-SW-20221027) (Run 2) (Analysis Batch 60463)

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Manual Integration Summary

Terracon Consultants, Inc.

Lot Number: XJ29009

Project Name: TAMP

Project Number: 7021P145

Where applicable, analytes for which manual integration occurred have been flagged with the following:

Qualifier	Technical Justification	Qualifier	Technical Justification	Qualifier	Technical Justification
M-01	Split peak	M-07	Low fit	M-13	Error
M-02	Peak tailing	M-08	Peak not found	M-14	Baseline
M-03	Incorrect auto integration	M-09	Analyte not Identified by the Data System	M-15	Other
M-04	Poor chromatography	M-10	Analyte misidentified by the Data System	M-16	Retention time shift
M-05	Manually assigned peak	M-11	Invalid integration	M-17	Shouldering
M-06	Wrong isomer	M-12	Wrong peak		

A summary of instances where manual integration occurred is included below:

Method	Sample	Run Number	Parameter	Qualifier
8260D	XJ29009-003	1	Acetone	M-03
8260D	XJ29009-008	2	Vinyl chloride	M-03
8260D	XQ59671-002	1	Methyl acetate	M-03
8260D	XQ60463-002	1	Acetone	M-03
8260D	XQ60463-002	1	Methyl acetate	M-03

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Sample Summary

Terracon Consultants, Inc.

Lot Number: XJ29009

Project Name: TAMP

Project Number: 7021P145

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	SW-1	Aqueous	10/27/2022 1635	10/29/2022
002	SW-1A	Aqueous	10/27/2022 1645	10/29/2022
003	SW-1B	Aqueous	10/27/2022 1650	10/29/2022
004	SW-2	Aqueous	10/27/2022 1615	10/29/2022
005	SW-2A	Aqueous	10/27/2022 1625	10/29/2022
006	SW-3	Aqueous	10/27/2022 1610	10/29/2022
007	SW-3A	Aqueous	10/27/2022 1600	10/29/2022
008	DUP-SW-20221027	Aqueous	10/27/2022	10/29/2022
009	TB-01	Aqueous	10/27/2022	10/29/2022

(9 samples)

Detection Summary

Terracon Consultants, Inc.

Lot Number: XJ29009

Project Name: TAMP

Project Number: 7021P145

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	SW-1	Aqueous	cis-1,2-Dichloroethene	8260D	11		ug/L	7
001	SW-1	Aqueous	Tetrachloroethene	8260D	8.1		ug/L	7
001	SW-1	Aqueous	1,1,2-Trichloro-1,2,2-	8260D	0.52	J	ug/L	7
001	SW-1	Aqueous	Trichloroethene	8260D	23		ug/L	8
002	SW-1A	Aqueous	cis-1,2-Dichloroethene	8260D	0.79	J	ug/L	9
002	SW-1A	Aqueous	Trichloroethene	8260D	0.65	J	ug/L	10
003	SW-1B	Aqueous	Acetone	8260D	8.3	JM-03	ug/L	11
003	SW-1B	Aqueous	Tetrachloroethene	8260D	0.49	J	ug/L	11
003	SW-1B	Aqueous	Trichloroethene	8260D	0.94	J	ug/L	12
004	SW-2	Aqueous	cis-1,2-Dichloroethene	8260D	4.6		ug/L	13
004	SW-2	Aqueous	Tetrachloroethene	8260D	12		ug/L	13
004	SW-2	Aqueous	1,1,2-Trichloro-1,2,2-	8260D	0.45	J	ug/L	13
004	SW-2	Aqueous	Trichloroethene	8260D	13		ug/L	14
005	SW-2A	Aqueous	cis-1,2-Dichloroethene	8260D	11		ug/L	15
005	SW-2A	Aqueous	Tetrachloroethene	8260D	38		ug/L	15
005	SW-2A	Aqueous	Trichloroethene	8260D	44		ug/L	16
005	SW-2A	Aqueous	1,1,2-Trichloro-1,2,2-	8260D	1.3	H	ug/L	17
006	SW-3	Aqueous	cis-1,2-Dichloroethene	8260D	2.3		ug/L	19
006	SW-3	Aqueous	Tetrachloroethene	8260D	6.2		ug/L	19
006	SW-3	Aqueous	Trichloroethene	8260D	8.3		ug/L	20
007	SW-3A	Aqueous	Tetrachloroethene	8260D	0.64	J	ug/L	21
007	SW-3A	Aqueous	Trichloroethene	8260D	0.77	J	ug/L	22
008	DUP-SW-20221027	Aqueous	cis-1,2-Dichloroethene	8260D	11		ug/L	23
008	DUP-SW-20221027	Aqueous	Tetrachloroethene	8260D	38		ug/L	23
008	DUP-SW-20221027	Aqueous	1,1,2-Trichloro-1,2,2-	8260D	1.4		ug/L	23
008	DUP-SW-20221027	Aqueous	Trichloroethene	8260D	44		ug/L	24

(26 detections)

Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XJ29009-001**

Description: **SW-1** Matrix: **Aqueous**

Date Sampled: **10/27/2022 1635** Project Name: **TAMP**

Date Received: **10/29/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	11/10/2022 0002	JMM2		59671

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**11**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**8.1**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**0.52**	**J**	**1.0**	0.84	**0.42**	**ug/L**	**1**
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XJ29009-001**	
Description: **SW-1**		Matrix: **Aqueous**	
Date Sampled: **10/27/2022 1635**	Project Name: **TAMP**		
Date Received: **10/29/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	11/10/2022 0002	JMM2		59671

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**23**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		106	81-118
Bromofluorobenzene		97	85-114
Toluene-d8		102	89-112
Dibromofluoromethane		105	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XJ29009-002**

Description: **SW-1A** Matrix: **Aqueous**

Date Sampled: **10/27/2022 1645** Project Name: **TAMP**

Date Received: **10/29/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	11/10/2022 0026	JMM2		59671

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**0.79**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation | B = Detected in the method blank | E = Quantitation of compound exceeded the calibration range | DL = Detection Limit | Q = Surrogate failure

U = Not detected at or above the LOD | N = Recovery is out of criteria | P = The RPD between two GC columns exceeds 40% | J = Estimated result < LOQ and ≥ DL | L = LCS/LCSD failure

H = Out of holding time | W = Reported on wet weight basis | LOD = Limit of Detection | S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XJ29009-002**	
Description: **SW-1A**		Matrix: **Aqueous**	
Date Sampled: **10/27/2022 1645**	Project Name: **TAMP**		
Date Received: **10/29/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	11/10/2022 0026	JMM2		59671

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**0.65**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		105	81-118
Bromofluorobenzene		93	85-114
Toluene-d8		101	89-112
Dibromofluoromethane		102	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XJ29009-003**

Description: **SW-1B** Matrix: **Aqueous**

Date Sampled: **10/27/2022 1650** Project Name: **TAMP**

Date Received: **10/29/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	11/10/2022 0051	JMM2		59671

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	**67-64-1**	**8260D**	**8.3**	**JM-03**	**20**	10	**5.0**	**ug/L**	**1**
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**0.49**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XJ29009-003**	
Description: **SW-1B**		Matrix: **Aqueous**	
Date Sampled: **10/27/2022 1650**	Project Name: **TAMP**		
Date Received: **10/29/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	11/10/2022 0051	JMM2		59671

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**0.94**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		101	81-118
Bromofluorobenzene		90	85-114
Toluene-d8		97	89-112
Dibromofluoromethane		99	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XJ29009-004**

Description: **SW-2** Matrix: **Aqueous**

Date Sampled: **10/27/2022 1615** Project Name: **TAMP**

Date Received: **10/29/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	11/10/2022 0116	JMM2		59671

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**4.6**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**12**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**0.45**	**J**	**1.0**	0.84	**0.42**	**ug/L**	**1**
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XJ29009-004**	
Description: **SW-2**		Matrix: **Aqueous**	
Date Sampled: **10/27/2022 1615**	Project Name: **TAMP**		
Date Received: **10/29/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	11/10/2022 0116	JMM2		59671

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**13**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		108	81-118
Bromofluorobenzene		96	85-114
Toluene-d8		105	89-112
Dibromofluoromethane		104	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XJ29009-005**

Description: **SW-2A** Matrix: **Aqueous**

Date Sampled: **10/27/2022 1625** Project Name: **TAMP**

Date Received: **10/29/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	11/10/2022 0140	JMM2		59671
2	5030B	8260D	1	11/18/2022 0628	JMM2		60463

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**11**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**38**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**1.3**		**1.0**	0.84	**0.42**	**ug/L**	**1**
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XJ29009-005**

Description: **SW-2A** Matrix: **Aqueous**

Date Sampled: **10/27/2022 1625** Project Name: **TAMP**

Date Received: **10/29/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	11/10/2022 0140	JMM2		59671
2	5030B	8260D	1	11/18/2022 0628	JMM2		60463

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**44**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		106	81-118	H	114	81-118
Bromofluorobenzene		96	85-114	H	92	85-114
Toluene-d8		104	89-112	H	102	89-112
Dibromofluoromethane		102	80-119	H	110	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XJ29009-005**

Description: **SW-2A** Matrix: **Aqueous**

Date Sampled: **10/27/2022 1625** Project Name: **TAMP**

Date Received: **10/29/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	11/10/2022 0140	JMM2		59671
2	5030B	8260D	1	11/18/2022 0628	JMM2		60463

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	UH	20	10	5.0	ug/L	2
Benzene	71-43-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromoform	75-25-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	UH	2.0	0.80	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chloroethane	**75-00-3**	**8260D**	**0.49**	**HJ**	**2.0**	0.80	**0.40**	**ug/L**	**2**
Chloroform	67-66-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	UH	2.0	1.0	0.50	ug/L	2
Cyclohexane	110-82-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	1.2	UH	2.0	1.2	0.60	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**10**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	4.0	UH	10	4.0	2.0	ug/L	2
Methylcyclohexane	108-87-2	8260D	0.80	UH	5.0	0.80	0.40	ug/L	2
Methylene chloride	75-09-2	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Styrene	100-42-5	8260D	0.82	UH	1.0	0.82	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Tetrachloroethene	**127-18-4**	**8260D**	**35**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Toluene	108-88-3	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**1.3**	**H**	**1.0**	0.84	**0.42**	**ug/L**	**2**
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XJ29009-005**

Description: **SW-2A** Matrix: **Aqueous**

Date Sampled: **10/27/2022 1625** Project Name: **TAMP**

Date Received: **10/29/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	11/10/2022 0140	JMM2		59671
2	5030B	8260D	1	11/18/2022 0628	JMM2		60463

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Trichloroethene	**79-01-6**	**8260D**	**43**	**H**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Trichlorofluoromethane	75-69-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Vinyl chloride	75-01-4	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260D	0.80	UH	1.0	0.80	0.40	ug/L	2

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		106	81-118	H	114	81-118
Bromofluorobenzene		96	85-114	H	92	85-114
Toluene-d8		104	89-112	H	102	89-112
Dibromofluoromethane		102	80-119	H	110	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XJ29009-006**

Description: **SW-3** Matrix: **Aqueous**

Date Sampled: **10/27/2022 1610** Project Name: **TAMP**

Date Received: **10/29/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	11/10/2022 0205	JMM2		59671

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**2.3**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**6.2**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the LOD
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XJ29009-006**	
Description: **SW-3**		Matrix: **Aqueous**	
Date Sampled: **10/27/2022 1610**	Project Name: **TAMP**		
Date Received: **10/29/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	11/10/2022 0205	JMM2		59671

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**8.3**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		106	81-118
Bromofluorobenzene		96	85-114
Toluene-d8		103	89-112
Dibromofluoromethane		103	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XJ29009-007**

Description: **SW-3A** Matrix: **Aqueous**

Date Sampled: **10/27/2022 1600** Project Name: **TAMP**

Date Received: **10/29/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	11/10/2022 0229	JMM2		59671

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**0.64**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation | B = Detected in the method blank | E = Quantitation of compound exceeded the calibration range | DL = Detection Limit | Q = Surrogate failure

U = Not detected at or above the LOD | N = Recovery is out of criteria | P = The RPD between two GC columns exceeds 40% | J = Estimated result < LOQ and ≥ DL | L = LCS/LCSD failure

H = Out of holding time | W = Reported on wet weight basis | LOD = Limit of Detection | S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XJ29009-007**	
Description: **SW-3A**		Matrix: **Aqueous**	
Date Sampled: **10/27/2022 1600**	Project Name: **TAMP**		
Date Received: **10/29/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	11/10/2022 0229	JMM2		59671

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	**79-01-6**	**8260D**	**0.77**	**J**	**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		105	81-118
Bromofluorobenzene		94	85-114
Toluene-d8		101	89-112
Dibromofluoromethane		102	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XJ29009-008**

Description: **DUP-SW-20221027** Matrix: **Aqueous**

Date Sampled: **10/27/2022** Project Name: **TAMP**

Date Received: **10/29/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	11/10/2022 0254	JMM2		59671
2	5030B	8260D	1	11/18/2022 0652	JMM2		60463

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**11**		**1.0**	0.80	**0.40**	**ug/L**	**1**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	**127-18-4**	**8260D**	**38**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**1.4**		**1.0**	0.84	**0.42**	**ug/L**	**1**
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XJ29009-008**	
Description: **DUP-SW-20221027**		Matrix: **Aqueous**	
Date Sampled: **10/27/2022**	Project Name: **TAMP**		
Date Received: **10/29/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	11/10/2022 0254	JMM2		59671
2	5030B	8260D	1	11/18/2022 0652	JMM2		60463

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichloroethene	**79-01-6**	**8260D**	**44**		**1.0**	0.80	**0.40**	**ug/L**	**1**
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		107	81-118	HN	122	81-118
Bromofluorobenzene		96	85-114	H	97	85-114
Toluene-d8		104	89-112	H	106	89-112
Dibromofluoromethane		103	80-119	H	115	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XJ29009-008**

Description: **DUP-SW-20221027** Matrix: **Aqueous**

Date Sampled: **10/27/2022** Project Name: **TAMP**

Date Received: **10/29/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	11/10/2022 0254	JMM2		59671
2	5030B	8260D	1	11/18/2022 0652	JMM2		60463

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	UHQ	20	10	5.0	ug/L	2
Benzene	71-43-2	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
Bromoform	75-25-2	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	UHQ	2.0	0.80	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	4.0	UHQ	10	4.0	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
Chloroethane	75-00-3	8260D	0.80	UHQ	2.0	0.80	0.40	ug/L	2
Chloroform	67-66-3	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	UHQ	2.0	1.0	0.50	ug/L	2
Cyclohexane	110-82-7	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	1.2	UHQ	2.0	1.2	0.60	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
cis-1,2-Dichloroethene	**156-59-2**	**8260D**	**10**	**HQ**	**1.0**	0.80	**0.40**	**ug/L**	**2**
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	4.0	UHQ	10	4.0	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	4.0	UHQ	10	4.0	2.0	ug/L	2
Methylcyclohexane	108-87-2	8260D	0.80	UHQ	5.0	0.80	0.40	ug/L	2
Methylene chloride	75-09-2	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
Styrene	100-42-5	8260D	0.82	UHQ	1.0	0.82	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
Tetrachloroethene	**127-18-4**	**8260D**	**35**	**HQ**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Toluene	108-88-3	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	**76-13-1**	**8260D**	**1.3**	**HQ**	**1.0**	0.84	**0.42**	**ug/L**	**2**
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XJ29009-008**

Description: **DUP-SW-20221027** Matrix: **Aqueous**

Date Sampled: **10/27/2022** Project Name: **TAMP**

Date Received: **10/29/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	11/10/2022 0254	JMM2		59671
2	5030B	8260D	1	11/18/2022 0652	JMM2		60463

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
Trichloroethene	**79-01-6**	**8260D**	**44**	**HQ**	**1.0**	0.80	**0.40**	**ug/L**	**2**
Trichlorofluoromethane	75-69-4	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2
Vinyl chloride	75-01-4	8260D	0.80	UHQM-03	1.0	0.80	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260D	0.80	UHQ	1.0	0.80	0.40	ug/L	2

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		107	81-118	HN	122	81-118
Bromofluorobenzene		96	85-114	H	97	85-114
Toluene-d8		104	89-112	H	106	89-112
Dibromofluoromethane		103	80-119	H	115	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.** Laboratory ID: **XJ29009-009**

Description: **TB-01** Matrix: **Aqueous**

Date Sampled: **10/27/2022** Project Name: **TAMP**

Date Received: **10/29/2022** Project Number: **7021P145**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	11/09/2022 2223	JMM2		59671

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Acetone	67-64-1	8260D	10	U	20	10	5.0	ug/L	1
Benzene	71-43-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromoform	75-25-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	4.0	U	10	4.0	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloroethane	75-00-3	8260D	0.80	U	2.0	0.80	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	1.0	U	2.0	1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	1.2	U	2.0	1.2	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	4.0	U	10	4.0	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	4.0	U	10	4.0	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	0.80	U	5.0	0.80	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Styrene	100-42-5	8260D	0.82	U	1.0	0.82	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	0.84	U	1.0	0.84	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*
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Volatile Organic Compounds by GC/MS

Client: **Terracon Consultants, Inc.**		Laboratory ID: **XJ29009-009**	
Description: **TB-01**		Matrix: **Aqueous**	
Date Sampled: **10/27/2022**	Project Name: **TAMP**		
Date Received: **10/29/2022**	Project Number: **7021P145**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	11/09/2022 2223	JMM2		59671

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		98	81-118
Bromofluorobenzene		90	85-114
Toluene-d8		96	89-112
Dibromofluoromethane		97	80-119

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOD	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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QC Summary

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ59671-001
Batch: 59671
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	11/09/2022 1957
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	11/09/2022 1957
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	11/09/2022 1957
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	11/09/2022 1957
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	11/09/2022 1957
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	11/09/2022 1957
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	11/09/2022 1957
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	11/09/2022 1957
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	11/09/2022 1957
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	11/09/2022 1957
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	11/09/2022 1957
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ59671-001
Batch: 59671
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	11/09/2022 1957

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		105	81-118
Bromofluorobenzene		100	85-114
Toluene-d8		104	89-112
Dibromofluoromethane		100	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ59671-002
Batch: 59671
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	100		1	100	39-160	11/09/2022 1851
Benzene	50	50		1	100	79-120	11/09/2022 1851
Bromodichloromethane	50	52		1	103	79-125	11/09/2022 1851
Bromoform	50	52		1	104	66-130	11/09/2022 1851
Bromomethane (Methyl bromide)	50	51		1	102	53-141	11/09/2022 1851
2-Butanone (MEK)	100	110		1	115	56-143	11/09/2022 1851
Carbon disulfide	50	54		1	109	64-133	11/09/2022 1851
Carbon tetrachloride	50	55		1	109	72-136	11/09/2022 1851
Chlorobenzene	50	49		1	98	82-118	11/09/2022 1851
Chloroethane	50	50		1	101	60-138	11/09/2022 1851
Chloroform	50	50		1	99	79-124	11/09/2022 1851
Chloromethane (Methyl chloride)	50	54		1	107	50-139	11/09/2022 1851
Cyclohexane	50	56		1	111	71-130	11/09/2022 1851
1,2-Dibromo-3-chloropropane (DBCP)	50	57		1	113	62-128	11/09/2022 1851
Dibromochloromethane	50	54		1	108	74-126	11/09/2022 1851
1,2-Dibromoethane (EDB)	50	50		1	100	77-121	11/09/2022 1851
1,2-Dichlorobenzene	50	51		1	101	80-119	11/09/2022 1851
1,3-Dichlorobenzene	50	50		1	101	80-119	11/09/2022 1851
1,4-Dichlorobenzene	50	49		1	98	79-118	11/09/2022 1851
Dichlorodifluoromethane	50	59		1	117	32-152	11/09/2022 1851
1,1-Dichloroethane	50	52		1	104	77-125	11/09/2022 1851
1,2-Dichloroethane	50	51		1	103	73-128	11/09/2022 1851
1,1-Dichloroethene	50	56		1	111	71-131	11/09/2022 1851
cis-1,2-Dichloroethene	50	50		1	100	78-123	11/09/2022 1851
trans-1,2-Dichloroethene	50	50		1	100	75-124	11/09/2022 1851
1,2-Dichloropropane	50	51		1	102	78-122	11/09/2022 1851
cis-1,3-Dichloropropene	50	55		1	110	75-124	11/09/2022 1851
trans-1,3-Dichloropropene	50	56		1	113	73-127	11/09/2022 1851
Ethylbenzene	50	53		1	105	79-121	11/09/2022 1851
2-Hexanone	100	120		1	120	57-139	11/09/2022 1851
Isopropylbenzene	50	57		1	114	72-131	11/09/2022 1851
Methyl acetate	50	46	M-03	1	93	56-136	11/09/2022 1851
Methyl tertiary butyl ether (MTBE)	50	51		1	101	71-124	11/09/2022 1851
4-Methyl-2-pentanone	100	110		1	109	67-130	11/09/2022 1851
Methylcyclohexane	50	56		1	112	72-132	11/09/2022 1851
Methylene chloride	50	53		1	107	74-124	11/09/2022 1851
Styrene	50	54		1	109	78-123	11/09/2022 1851
1,1,2,2-Tetrachloroethane	50	52		1	104	71-121	11/09/2022 1851
Tetrachloroethene	50	52		1	104	74-129	11/09/2022 1851
Toluene	50	52		1	105	80-121	11/09/2022 1851
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	56		1	111	70-136	11/09/2022 1851
1,2,4-Trichlorobenzene	50	53		1	106	69-130	11/09/2022 1851
1,1,1-Trichloroethane	50	56		1	111	74-131	11/09/2022 1851
1,1,2-Trichloroethane	50	51		1	101	80-119	11/09/2022 1851

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ59671-002
Batch: 59671
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	49		1	98	79-123	11/09/2022 1851
Trichlorofluoromethane	50	60		1	120	65-141	11/09/2022 1851
Vinyl chloride	50	53		1	107	58-137	11/09/2022 1851
Xylenes (total)	100	110		1	108	79-121	11/09/2022 1851

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		100	81-118
Bromofluorobenzene		102	85-114
Toluene-d8		105	89-112
Dibromofluoromethane		103	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ60463-001
Batch: 60463
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Acetone	10	U	1	20	10	5.0	ug/L	11/17/2022 2337
Benzene	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
Bromodichloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
Bromoform	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
Bromomethane (Methyl bromide)	0.80	U	1	2.0	0.80	0.40	ug/L	11/17/2022 2337
2-Butanone (MEK)	4.0	U	1	10	4.0	2.0	ug/L	11/17/2022 2337
Carbon disulfide	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
Carbon tetrachloride	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
Chlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
Chloroethane	0.80	U	1	2.0	0.80	0.40	ug/L	11/17/2022 2337
Chloroform	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
Chloromethane (Methyl chloride)	1.0	U	1	2.0	1.0	0.50	ug/L	11/17/2022 2337
Cyclohexane	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
1,2-Dibromo-3-chloropropane (DBCP)	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
Dibromochloromethane	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
1,2-Dibromoethane (EDB)	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
1,2-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
1,3-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
1,4-Dichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
Dichlorodifluoromethane	1.2	U	1	2.0	1.2	0.60	ug/L	11/17/2022 2337
1,1-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
1,2-Dichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
1,1-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
cis-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
trans-1,2-Dichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
1,2-Dichloropropane	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
cis-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
trans-1,3-Dichloropropene	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
Ethylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
2-Hexanone	4.0	U	1	10	4.0	2.0	ug/L	11/17/2022 2337
Isopropylbenzene	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
Methyl acetate	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
Methyl tertiary butyl ether (MTBE)	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
4-Methyl-2-pentanone	4.0	U	1	10	4.0	2.0	ug/L	11/17/2022 2337
Methylcyclohexane	0.80	U	1	5.0	0.80	0.40	ug/L	11/17/2022 2337
Methylene chloride	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
Styrene	0.82	U	1	1.0	0.82	0.41	ug/L	11/17/2022 2337
1,1,2,2-Tetrachloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
Tetrachloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
Toluene	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.84	U	1	1.0	0.84	0.42	ug/L	11/17/2022 2337
1,2,4-Trichlorobenzene	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
1,1,1-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
1,1,2-Trichloroethane	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ60463-001
Batch: 60463
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
Trichloroethene	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
Trichlorofluoromethane	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
Vinyl chloride	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337
Xylenes (total)	0.80	U	1	1.0	0.80	0.40	ug/L	11/17/2022 2337

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		114	81-118
Bromofluorobenzene		94	85-114
Toluene-d8		104	89-112
Dibromofluoromethane		111	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ60463-002
Batch: 60463
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	150	M-03	1	152	39-160	11/17/2022 2228
Benzene	50	47		1	95	79-120	11/17/2022 2228
Bromodichloromethane	50	49		1	99	79-125	11/17/2022 2228
Bromoform	50	54		1	107	66-130	11/17/2022 2228
Bromomethane (Methyl bromide)	50	57		1	114	53-141	11/17/2022 2228
2-Butanone (MEK)	100	110		1	114	56-143	11/17/2022 2228
Carbon disulfide	50	45		1	89	64-133	11/17/2022 2228
Carbon tetrachloride	50	49		1	98	72-136	11/17/2022 2228
Chlorobenzene	50	49		1	98	82-118	11/17/2022 2228
Chloroethane	50	51		1	103	60-138	11/17/2022 2228
Chloroform	50	46		1	92	79-124	11/17/2022 2228
Chloromethane (Methyl chloride)	50	56		1	112	50-139	11/17/2022 2228
Cyclohexane	50	49		1	98	71-130	11/17/2022 2228
1,2-Dibromo-3-chloropropane (DBCP)	50	57		1	113	62-128	11/17/2022 2228
Dibromochloromethane	50	53		1	106	74-126	11/17/2022 2228
1,2-Dibromoethane (EDB)	50	51		1	103	77-121	11/17/2022 2228
1,2-Dichlorobenzene	50	52		1	103	80-119	11/17/2022 2228
1,3-Dichlorobenzene	50	52		1	104	80-119	11/17/2022 2228
1,4-Dichlorobenzene	50	49		1	98	79-118	11/17/2022 2228
Dichlorodifluoromethane	50	65		1	131	32-152	11/17/2022 2228
1,1-Dichloroethane	50	47		1	94	77-125	11/17/2022 2228
1,2-Dichloroethane	50	50		1	100	73-128	11/17/2022 2228
1,1-Dichloroethene	50	46		1	93	71-131	11/17/2022 2228
cis-1,2-Dichloroethene	50	46		1	92	78-123	11/17/2022 2228
trans-1,2-Dichloroethene	50	45		1	89	75-124	11/17/2022 2228
1,2-Dichloropropane	50	48		1	96	78-122	11/17/2022 2228
cis-1,3-Dichloropropene	50	52		1	103	75-124	11/17/2022 2228
trans-1,3-Dichloropropene	50	55		1	109	73-127	11/17/2022 2228
Ethylbenzene	50	51		1	102	79-121	11/17/2022 2228
2-Hexanone	100	120		1	120	57-139	11/17/2022 2228
Isopropylbenzene	50	53		1	107	72-131	11/17/2022 2228
Methyl acetate	50	56	M-03	1	111	56-136	11/17/2022 2228
Methyl tertiary butyl ether (MTBE)	50	49		1	97	71-124	11/17/2022 2228
4-Methyl-2-pentanone	100	100		1	105	67-130	11/17/2022 2228
Methylcyclohexane	50	48		1	97	72-132	11/17/2022 2228
Methylene chloride	50	49		1	99	74-124	11/17/2022 2228
Styrene	50	56		1	113	78-123	11/17/2022 2228
1,1,2,2-Tetrachloroethane	50	54		1	108	71-121	11/17/2022 2228
Tetrachloroethene	50	47		1	94	74-129	11/17/2022 2228
Toluene	50	51		1	102	80-121	11/17/2022 2228
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	47		1	94	70-136	11/17/2022 2228
1,2,4-Trichlorobenzene	50	53		1	106	69-130	11/17/2022 2228
1,1,1-Trichloroethane	50	48		1	96	74-131	11/17/2022 2228
1,1,2-Trichloroethane	50	51		1	102	80-119	11/17/2022 2228

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ60463-002
Batch: 60463
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	45		1	89	79-123	11/17/2022 2228
Trichlorofluoromethane	50	57		1	114	65-141	11/17/2022 2228
Vinyl chloride	50	54		1	109	58-137	11/17/2022 2228
Xylenes (total)	100	100		1	105	79-121	11/17/2022 2228

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		94	81-118
Bromofluorobenzene		100	85-114
Toluene-d8		100	89-112
Dibromofluoromethane		92	80-119

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

U = Not detected at or above the LOD
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Chain of Custody
and
Miscellaneous Documents

Pace Analytical®

PACE ANALYTICAL SERVICES, LLC
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.pacelabs.com

Number 114855

* Picked up

Client: Terracon Consultants	Report to Contact: Ethan.Dinwiddie@Terracon.com	Telephone No. / E-mail: Don.Malone@Terracon.com	Quote No.: 25322
Address: 2401 Brentwood Rd, Suite 107	Sampler's Signature: X [signature]	Analysis (Attach list if more space is needed)	Page 1 of 1
City: Raleigh; State: NC; Zip Code: 27604	Printed Name: Ethan Dinwiddie		Lot # Bar Code (lab use only): Cooler 1 of 1
Project Name: TAMP			
Project No.: 7021P145; P.O. No.:			

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	G=Grab C=Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	No of Containers by Preservative Type: Genera.	HCl	NaOH	Field Filtered	VOCs 8260	Remarks / Cooler I.D.
SW-1	10/27	1635	G	X				3			X	XJ29009 csh
SW-1A	10/27	1645	G	X				3			X	
SW-1B	10/27	1650	G	X				3			X	
SW-2	10/27	1615	G	X				3			X	
SW-2A	10/27	1625	G	X				3			X	
SW-3	10/27	1610	G	X				3			X	
SW-3A	10/27	1600	G	X				3			X	
DUP-SW-20221027	10/27	—	G	X				3			X	
TB-01	10/27	—	G	X				2			X	

Turn Around Time Required (Prior lab approval required for expedited TAT.): ☒ Standard ☐ Rush (Specify)

Sample Disposal: ☐ Return to Client ☒ Disposal by Lab

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☒ Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by: [signature]	10/28/22	800	1. Received by: [signature] / Pace	10-28-22	0845
2. Relinquished by: [signature] / Pace	10-28-22	0920	2. Received by:		
3. Relinquished by:			3. Received by:		
4. Relinquished by: Fed ex	10/29/22	1020	4. Laboratory received by: [signature]	10/29/22	1020

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY: Received on ice (Circle) Yes No Ice Pack — Receipt Temp. 2.9 °C — Temp Blank ☐ Y ☒ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s), PINK-Field/Client Copy

Document Number: ME002N2-01

DC#_Title: ENV-FRM-WCOI-0286 v02_Samples Receipt Checklist (SRC)
Effective Date: 8/2/2022

Sample Receipt Checklist (SRC)

Client: Terracon Cooler Inspected by/date: KNR / 10/29/2022 Lot #: XJ29009

Means of receipt: [ ] Pace [ ] Client [ ] UPS [✓] FedEx [ ] Other: _____

[ ] Yes	[✓] No		1. Were custody seals present on the cooler?
[ ] Yes	[ ] No	[✓] NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA
Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA
2.9 / 2.9 °C NA / NA °C NA / NA °C NA / NA °C
Method: [ ] Temperature Blank [✓] Against Bottles IR Gun ID: 8 IR Gun Correction Factor: 0 °C
Method of coolant: [✓] Wet Ice [ ] Ice Packs [ ] Dry Ice [ ] None

[✓] Yes	[ ] No	[ ] NA	3. Were all coolers received at or below 6.0°C? If no, was Project Manager notified? PM was Notified by: phone / email / face-to-face (circle one).
[✓] Yes	[ ] No	[ ] NA	4. Is the commercial courier's packing slip attached to this form?
[✓] Yes	[ ] No		5. Were proper custody procedures (relinquished/received) followed?
[✓] Yes	[ ] No		6. Were sample IDs listed on the COC and all sample containers?
[✓] Yes	[ ] No		7. Was collection date & time listed on the COC and all sample containers?
[✓] Yes	[ ] No		8. Did all container label information (ID, date, time) agree with the COC?
[✓] Yes	[ ] No		9. Were tests to be performed listed on the COC?
[✓] Yes	[ ] No		10. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? _____
[✓] Yes	[ ] No		11. Was adequate sample volume available?
[✓] Yes	[ ] No		12. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
[✓] Yes	[ ] No		13. Were all samples containers accounted for? (No missing/excess)
[ ] Yes	[✓] No	[ ] NA	14. Were VOA, 8015C and RSK-175 samples free of bubbles >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
[ ] Yes	[ ] No	[✓] NA	15. Were all DRO/metals/nutrient samples received at a pH of < 2?
[ ] Yes	[ ] No	[✓] NA	16. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
[ ] Yes	[ ] No	[✓] NA	17. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
[✓] Yes	[ ] No	[ ] NA	18. Was the quote number listed on the container label? If yes, Quote # 25322

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA _____ were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA _____.
Time of preservation NA _____. If more than one preservative is needed, please note in the comments below.

Sample(s) 003(2) 009(2) _____ were received with bubbles >6 mm in diameter.

Samples(s) NA _____ were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Unique ID: NA _____.

Comments:

Qualtrax ID: 56360 Pace® Analytical Services, LLC Page 1 of 1

Appendix O

Conceptual Site Model

CONCEPTUAL SITE MODEL
TARHEEL ARMY MISSILE PLANT

DECEMBER 16, 2022 (VER. 0)

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Table of Contents

- What is a "Successful Outcome" for Project?
- Primary Stakeholders and CSM Use
- Data Considered for the CSM Update
- Definition of a CSM based on ITRC (2016)
- Facility Background, History, and Environmental Timeline
- Geologic Setting & Hydraulic Parameter Estimates
- Chemicals of Concern
- Exposure Pathways and Results of HHRA/SLERA
- Data Gaps
- Potential Alternative Remedial Strategies
- Potential Future Steps for 2023 and Beyond

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What is a "Successful Outcome" for Project?

- ✓ Obtained data from Pace Labs and decided what EDDs to upload into EQuIS
- ✓ Automated sample collection and processing via EDDs uploads into EQuIS
- ✓ Collected Samples from Soil, Groundwater, Surface Water, Water in Tunnels, and Soil Vapor per the UFP-QAPP Work Plan (February 18, 2022)
- ✓ Determined wells with stable to decreasing concentration trends
- ✓ Utilized geologic cross sections to better understand complex site conditions
- ✓ Identified potential off-site sources
- ✓ Defined data gaps
- ✓ Provided data for a future Feasibility Study to select potential remedial alternatives for the site

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Primary Stakeholders and CSM Use

The Primary Stakeholders for this Conceptual Site Model include:

- United States Army Corps of Engineers
- City of Burlington
- Central Park Burlington, LLC (site owner)
- Local community including nearby property owners
- Northwind Engineering, LLC

Stakeholders Might Use this CSM to:

- Enable better understanding of the site conditions;
- Help to communicate project status & risk to City of Burlington and the local community;
- Identify potential data gaps in the Remedial Investigation; and/or
- Establish a framework for a future Feasibility Study to select potential remedial alternatives for the site.

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Data Considered for the CSM Update

- Analytical and operational information from current operations, including:
  - 2019 Remedial Investigation by Arcadis
  - 1993 Comprehensive Site Assessment by Roy F. Weston, Inc. (Weston)
  - Other historical reports, including reports by Weston, Solutions-IES, and USACE
  - Historical soil, groundwater, surface water, and soil gas data

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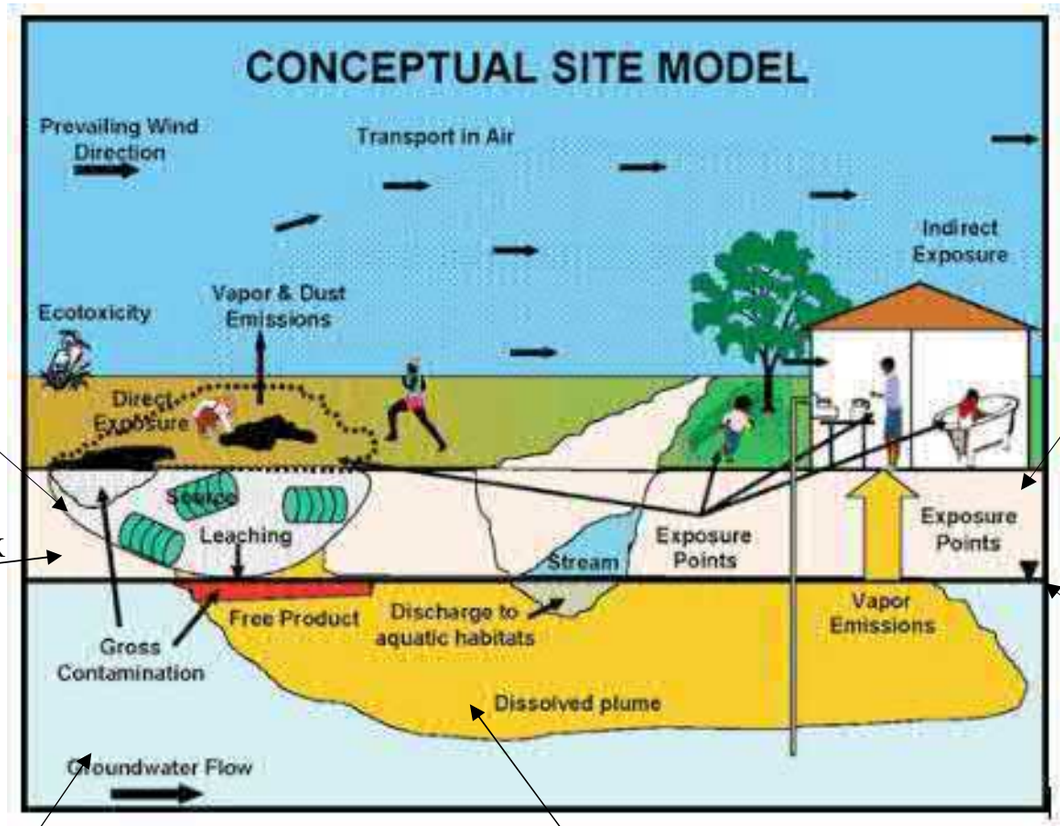
DEFINITION OF A CSM

BASED ON ITRC (2016)

Definition of a CSM



SOURCE AREAS

GEOLOGIC FRAMEWORK

HYDRAULIC PROPERTIES AQUIFER

INVESTIGATION DATA

EXPOSURE PATHWAYS

WATER LEVELS

"A CSM serves to conceptualize the relationship between contaminant sources and receptors through consideration of potential or actual migration and exposure pathways. It presents the current understanding of the site, helps to identify data gaps, and helps to focus the data collection efforts….and include visualization aid (e.g., figures, graphs, charts, tables) that relates site conditions to receptors in a manner that lends itself to the explanation…"

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Value of a Conceptual Site Model

- Simplified Understanding of the Site Conditions
- Qualitative and Quantitative Framework for Understanding Aquifer System, Impacted Media, and Exposure Pathways
- Integration of Site Data
- Identification of Data Gaps
- Planning Tool for Remedial Decisions
- Risk Communication Tool

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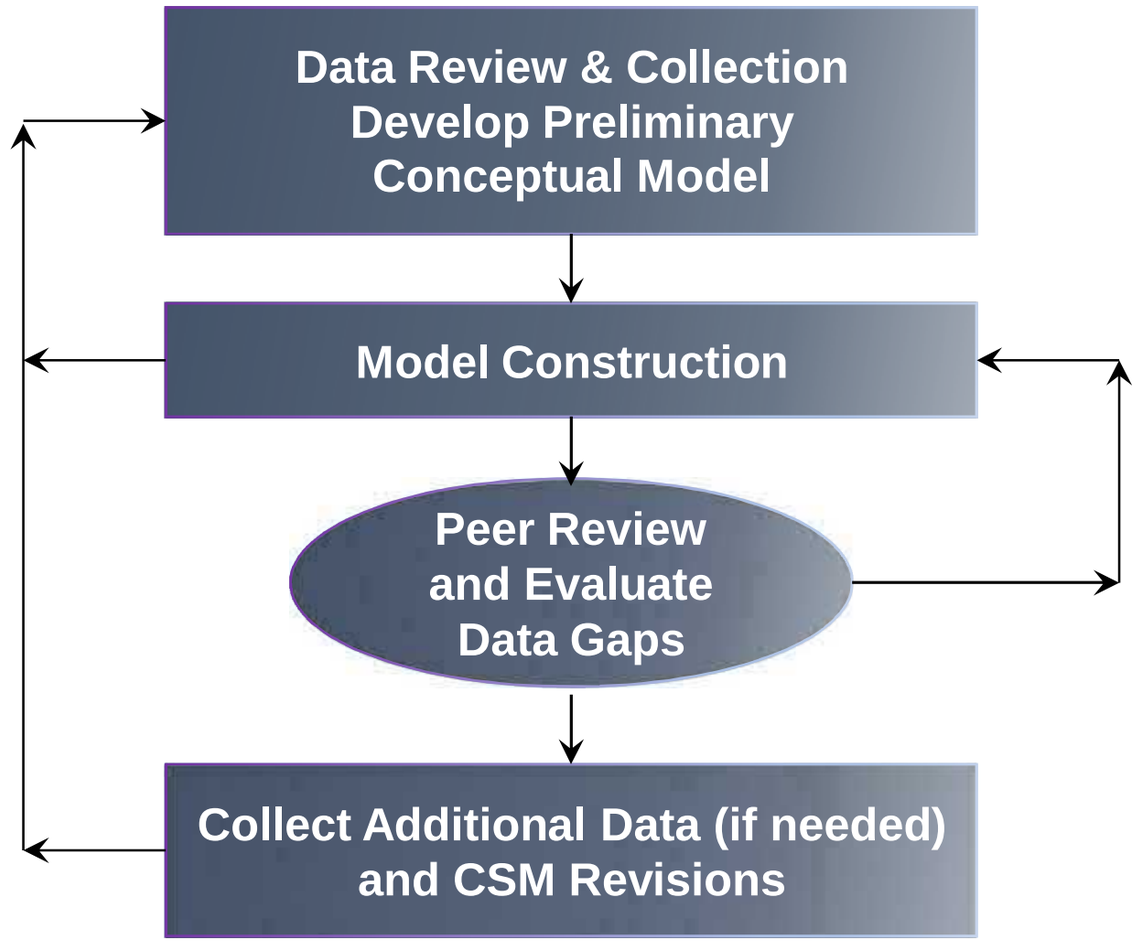
Iterative CSM-Building Procedure



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FACILITY BACKGROUND, HISTORY, AND ENVIRONMENTAL TIMELINE

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Overall History

TAMP Site Address: 204 Graham-Hopedale Road, Burlington, North Carolina. Site size: ~22 acres.

Background: Initially established in 1927 as a rayon manufacturing plant. Acquired by Defense Plant Corporation in 1941 for manufacture of aircraft and other military equipment.

Acquired by U.S. Army in 1954 and leased to Western Electric Company (1954-1958) to manufacture electronic equipment for commercial and military uses, including Nike Missile Systems. AT&T leased the Site from 1960 to 1992 and continued manufacturing military-related electronic systems. Lucent Technologies, a divestiture of AT&T, took over operations until 1999.

The Site was sold in 2004 and used as a flea market. Since 2004 there have been various private owners and the Site has been predominantly vacant, although there are plans to convert two of the buildings into storage space.

Contamination was discovered at the site in the early 1990s. Investigated areas include:

- Chlorinated cleaning machines and sumps in Building 1, 2, and 20
- Waste Accumulation Pad and Waste Oil Transfer Area (outside Building 1)
- USTs 1 through 9 (located throughout site)
- Former paint and chemical storage areas (located throughout site)

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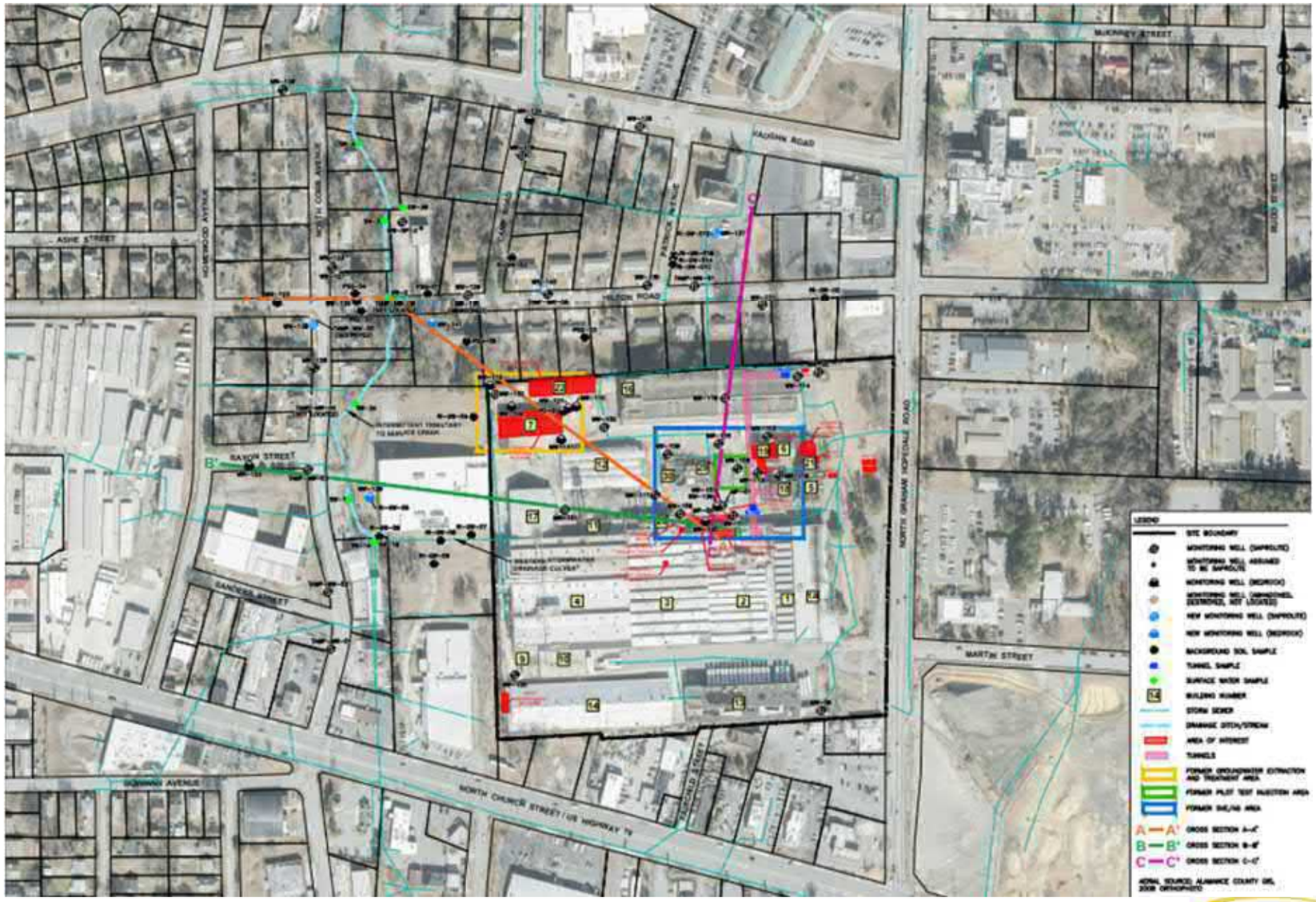
Site Diagram with Geologic Cross-Section Locations



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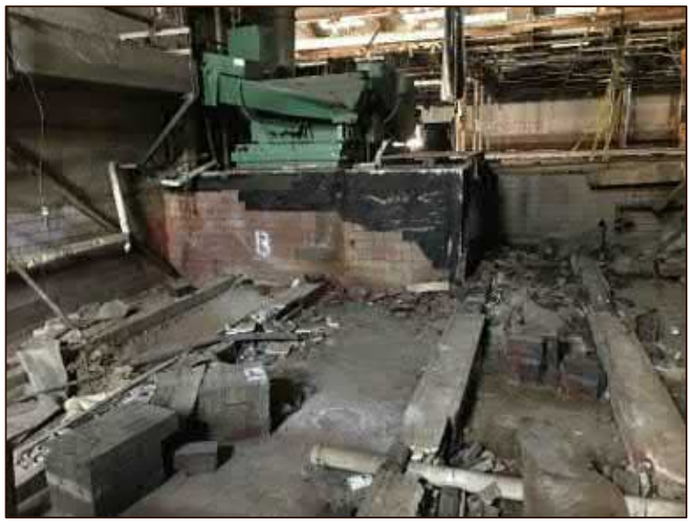
Site Photographs



View of Chlorinated Cleaning Machine 1 within Building 20.

View of Chlorinated Cleaning Machine Sump within Building 2.

View of the former Chlorinated Cleaning Machine 3 within Building 3.

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Site Photographs (Continued)

View of former Waste Accumulation Pad north of Building 2; facing southeast.

View of former Waste Oil Transfer Area north of Building 2 and 3; facing south

View of the Building 2, former waste oil transfer area, and former Waste Accumulation Pad; facing southwest

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History of Environmental Investigations

Investigations have been conducted at the site to identify potential source areas and evaluate extent and risk from 1992 to 2019.

- **1992 – 1995** – Investigations by Black & Veatch Waste Science Technologies and Roy F. Weston, Inc (Weston) identified petroleum and chlorinated solvent contamination at the site. Petroleum contamination was identified around the USTs 5 through 9. Chlorinated solvent contamination in soil and shallow groundwater was identified beneath and around Waste Accumulation Pad. Surface water impacts to the off-site tributary were also discovered.

- **1995 – 2010** – Long-term soil and groundwater monitoring by various consultants to evaluate the effectiveness of remedial efforts.

- **2015 – 2019** – Investigations by USACE (2016) and Arcadis (2017-2019) identified off-site chlorinated solvent impacts in groundwater and surface water (unnamed tributary). Soil samples on the site identified high TCE concentrations in saturated soil . Soil gas samples identified impacts on the site but not at off-site residences.

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History of Environmental Remedial Actions

Remedial strategies were implemented at the site from 1993 to 2013 to reduce contaminant concentrations in soil and groundwater and eliminate exposure pathways.

- **1993 – 1995** - Removal of USTs 3 and 5 through 9. Over excavation and off-site disposal of petroleum-contaminated soil occurred for USTs 5 through 7. Documentation of removal of USTs 1, 2, and 4 was unavailable for review.

- **1995 – 2004** - Installation of air sparging/soil vapor extraction system in the central and eastern portions of the Site. Designed to reduce petroleum and chlorinated solvent impacts in soil and shallow groundwater.

- **2004 – 2006** - Pilot test injection of emulsified oil substrate (EOS®) in 8 injection wells east of Water Treatment Facility (Building 29). Designed to reduce chlorinated solvent impacts in groundwater.

- **1999 – 2013** - Groundwater extraction and treatment in the northwest portion of the site from MW-104 and MW-110 through 112. Designed to mitigate off-site migration of chlorinated solvent plume.

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GEOLOGIC SETTING

-REGIONAL CONDITIONS
-LOCAL CONDITIONS
-AQUIFER CLASSIFICATION

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Site Geology

- Underlain by the Carolina Slate Belt of the Piedmont Physiographic Province.
- Surface soils are unconsolidated saprolite from in-situ weathering of underlying bedrock.
- Bedrock is metamorphosed basaltic tuff and granitic rock (late-Proterozoic age)
- Mesozoic-age diabase dikes are common in the region and are generally less resistant to weathering than surrounding rock.
- Linear features (typically drainages) are formed by natural fractures in bedrock or erosion of diabase dikes and have a strong NW-SE trend.

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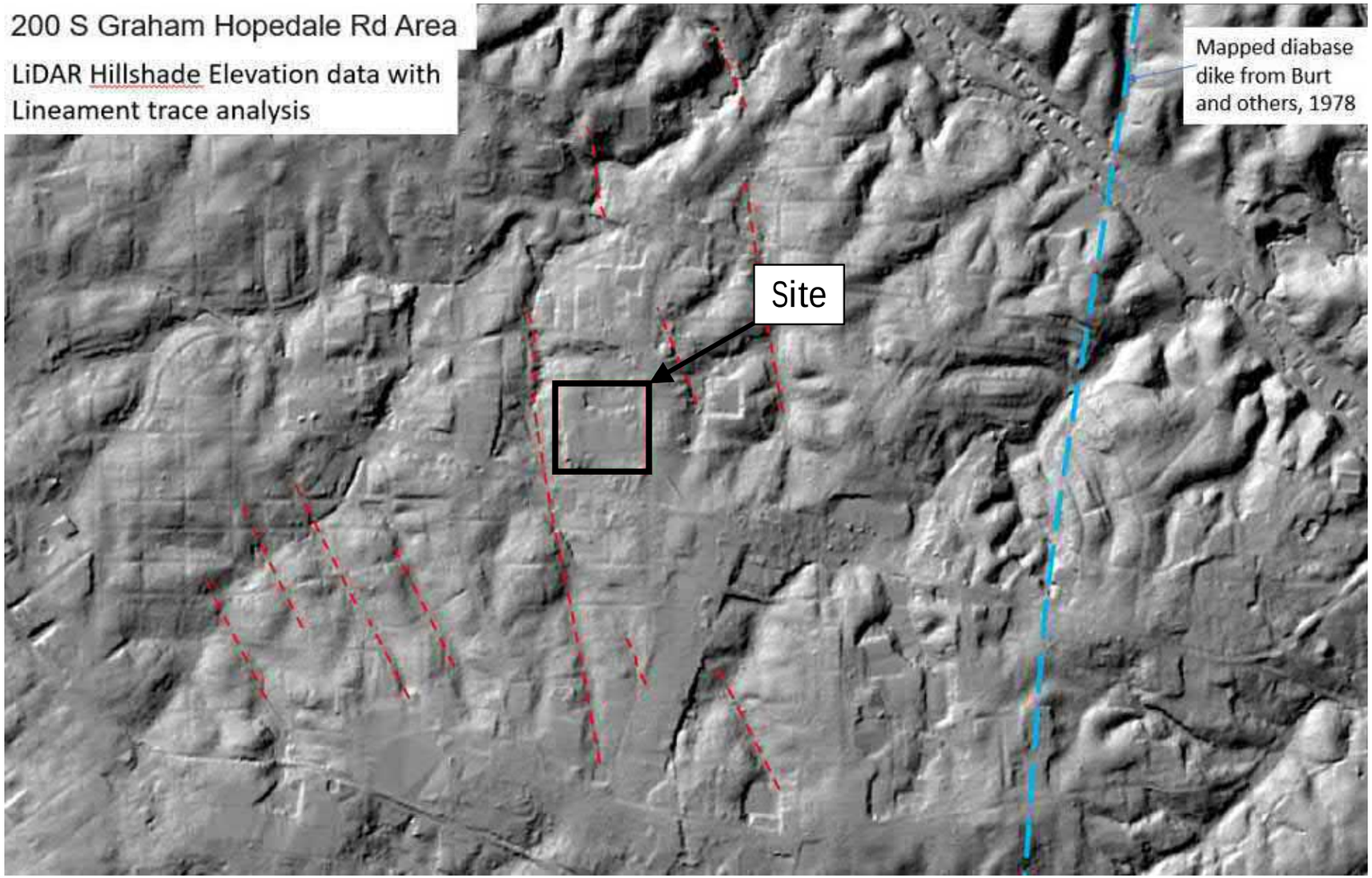
Site Geology – Natural Lineaments



- - - - - Lineament Trace

Lineament trace analysis by Mr. Phil Bradley, Senior Piedmont Geologist for the North Carolina Geological Survey. October 2021.

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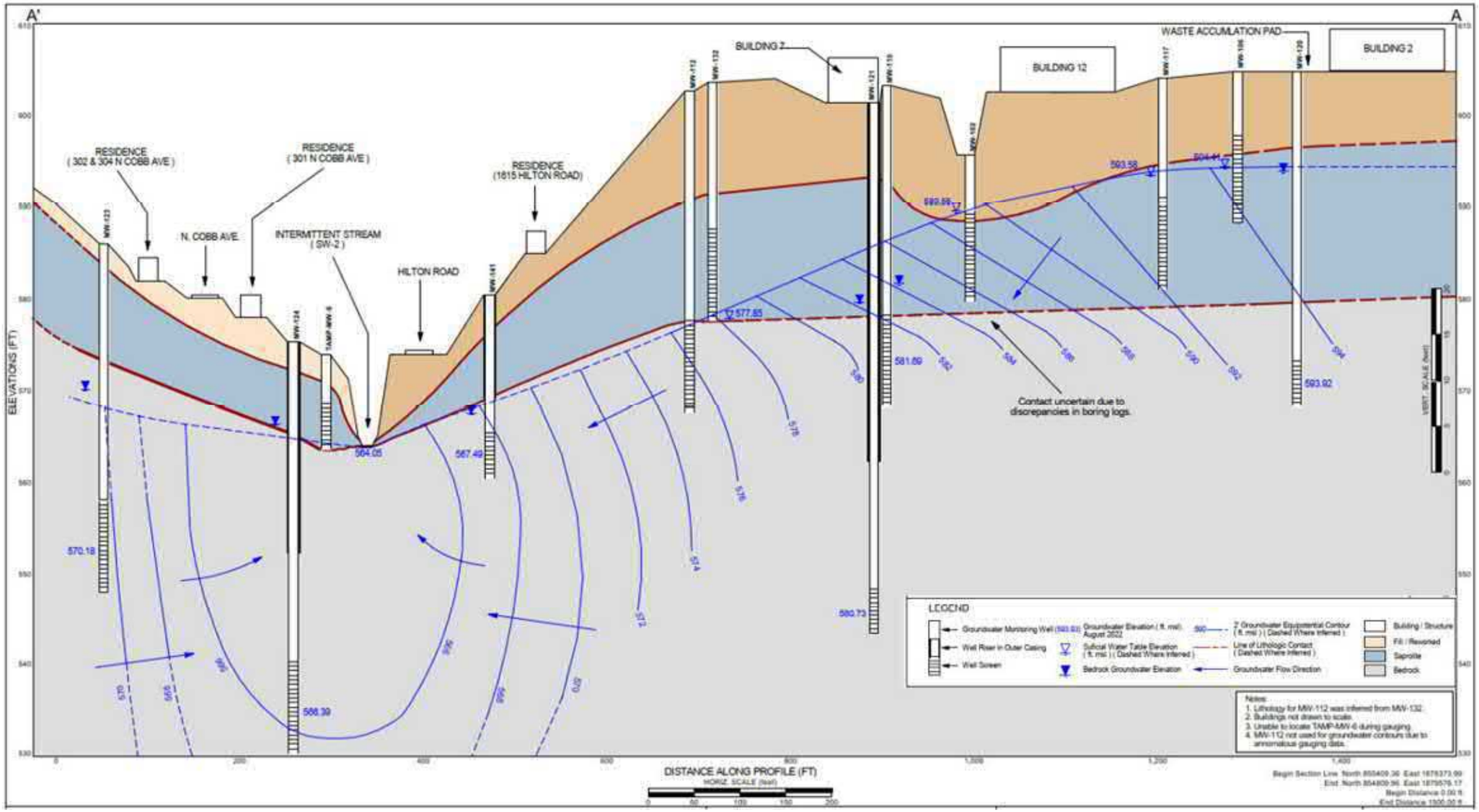
Site Geology (Geologic Cross-Section A-A')



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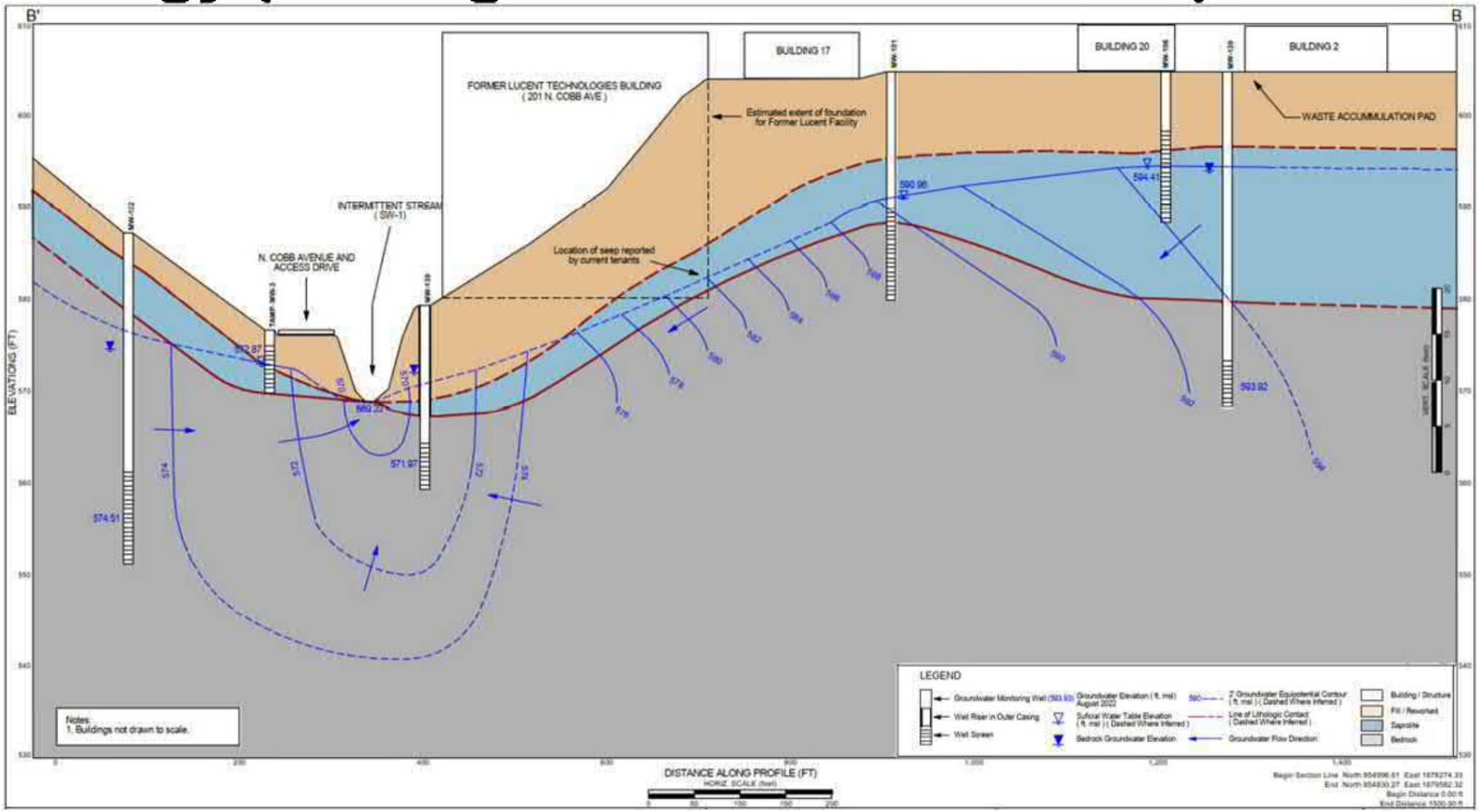
Site Geology (Geologic Cross-Section B-B')



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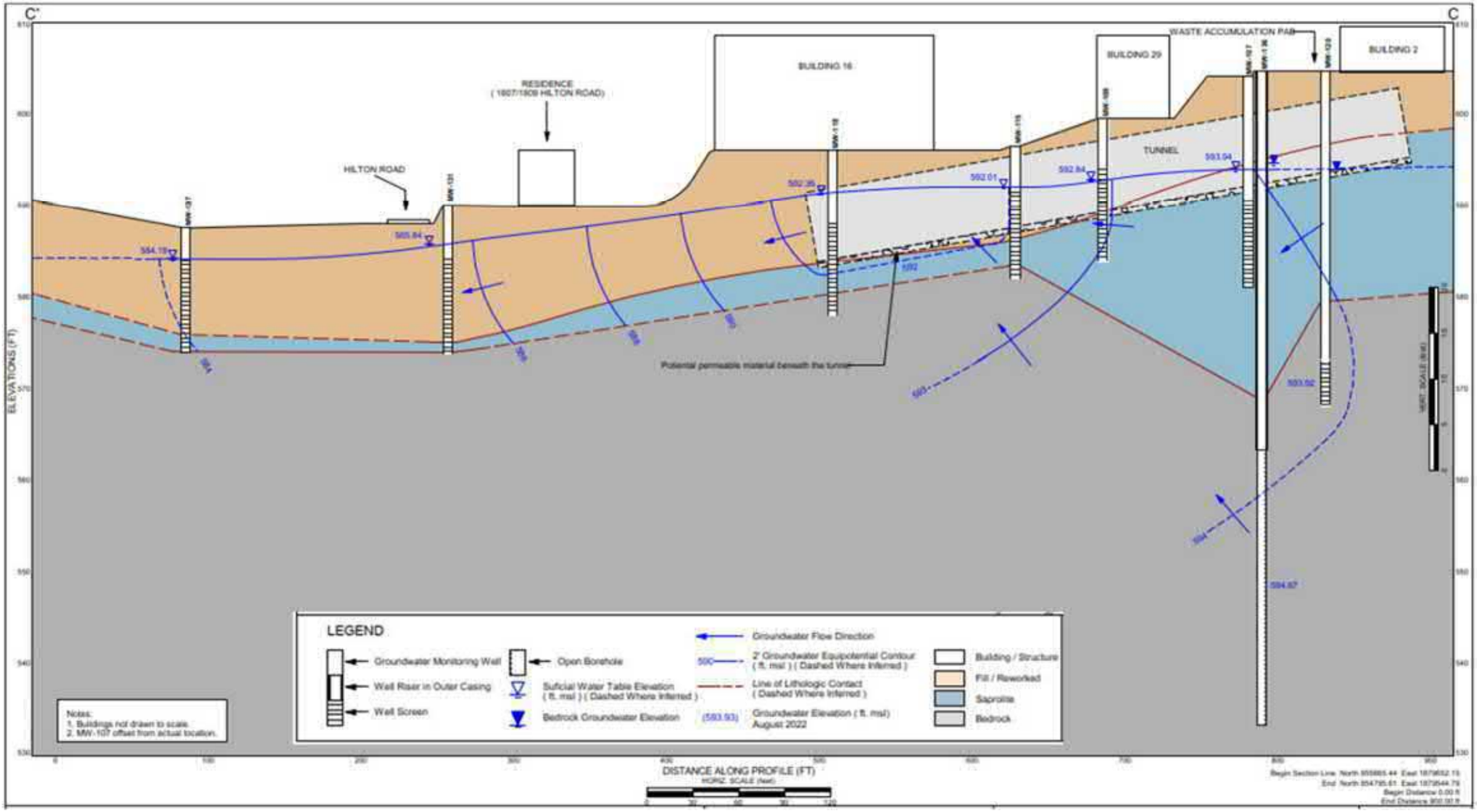
Site Geology (Geologic Cross-Section C-C')



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Site Hydrogeology

- Dominant groundwater flow direction is to the northwest in saprolite and bedrock aquifers
- Preferential pathways in bedrock through fractures and diabase dikes may exist that significantly influence contaminant migration
- Unnamed intermittent tributary to Service Creek is the localized groundwater "divide“ / discharge point
- Current groundwater flow patterns similar to historical patterns as presented in prior RI (Arcadis, 2020), but better definition along the creek.

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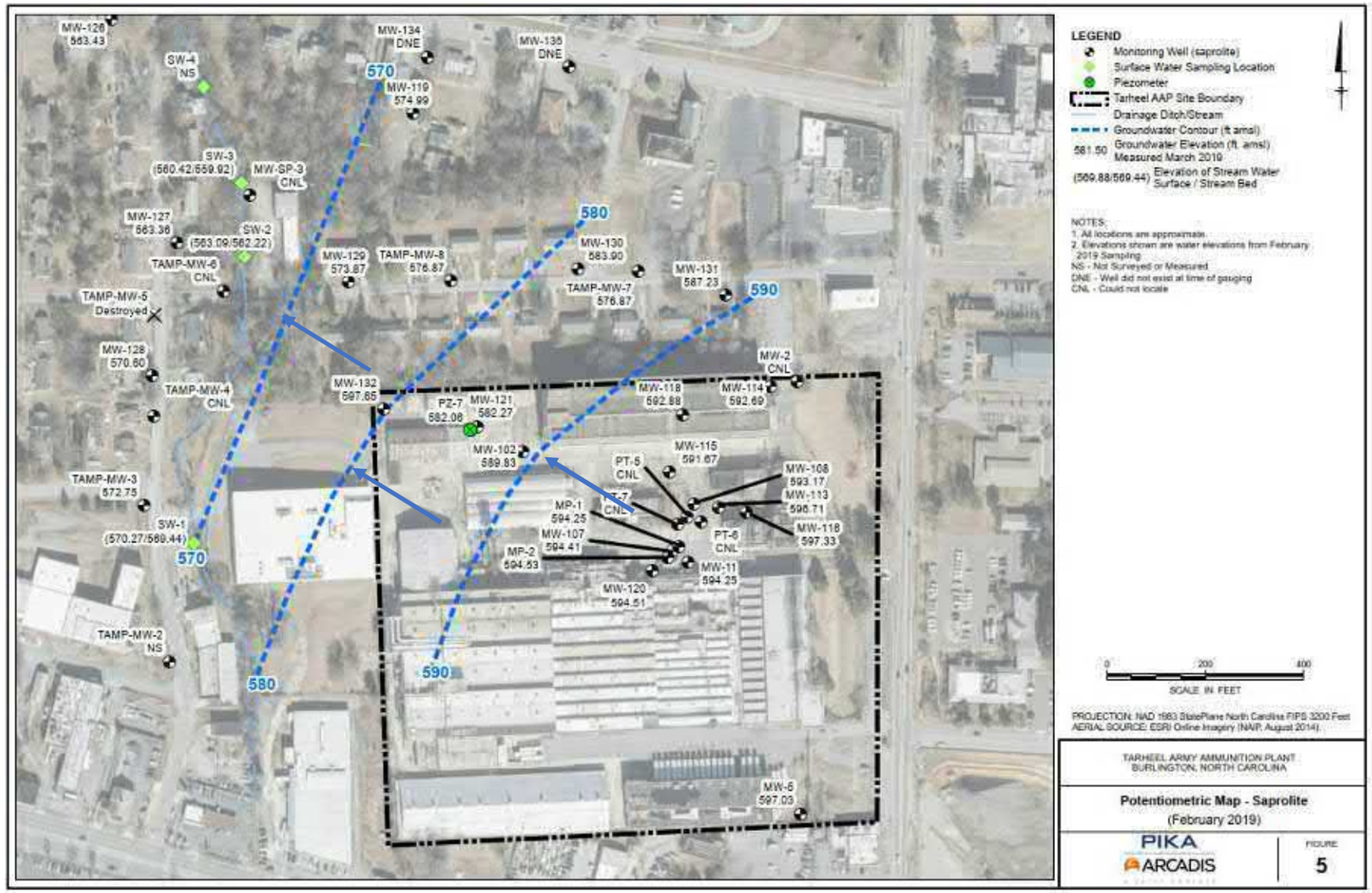
Site Hydrogeology- 1993

- Dominant GW flow to NW in saprolite and bedrock aquifers
- Possible discharge into the tunnel
- Groundwater flow in fractured bedrock
- Localized groundwater "divide" is unnamed intermittent tributary to Service Creek
- Current groundwater flow patterns similar to historical patterns as presented in prior RI (Weston, 1993), but better site-wide definition

Source: Comprehensive Site Assessment Report, Weston 1993

Water Table Pot. Map – February 2019

- Similar to historical groundwater flow direction from 1993
- More extensive data at on-site and off-site properties



Source: Draft Remedial Investigation Report, Arcadis 2020

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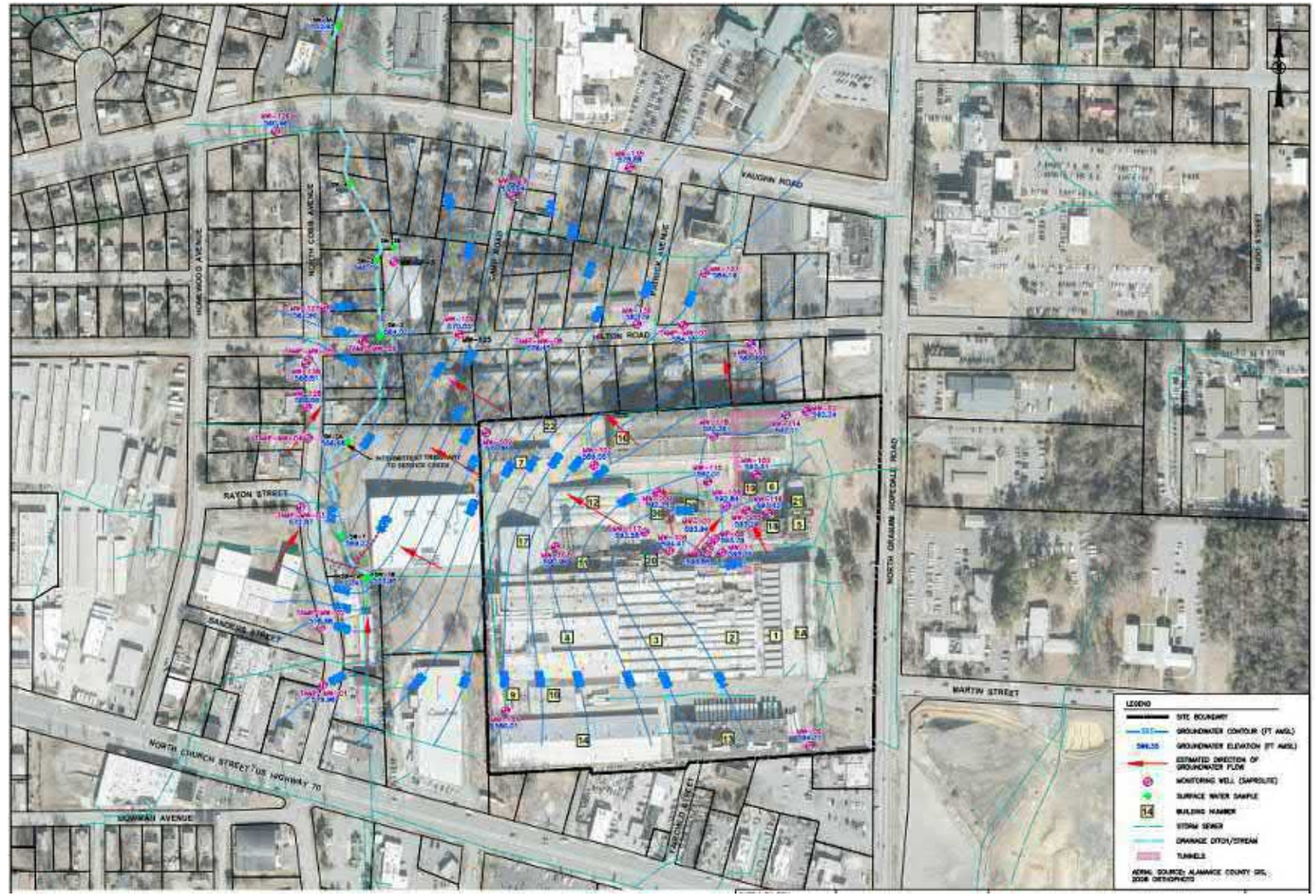
Water Table Pot. Map (Saprolite) – August 2022

- Current groundwater flow patterns similar to historical patterns in last RI (Arcadis, 2020), but better definition along the creek
- Converging flow lines on both sides of the creek
- Converging flow lines toward the tunnel
- Consistent with LeGrand (2004)[1], groundwater in the regolith and interconnected bedrock fractures should discharge through seepage into streams (or other water bodies when present), from both sides of the basin



1. LeGrand, Harry E., 2004, A Master Conceptual Model for Hydrogeological Site Characterization in the Piedmont and Mountain Region of North Carolina, North Carolina Department of Environment and Natural Resources, Division of Water Quality, Groundwater Section. February.

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Water Table Pot. Map (Saprolite) – October 2022

VERY Similar to the August 2022 Data

1. LeGrand, Harry E., 2004, A Master Conceptual Model for Hydrogeological Site Characterization in the Piedmont and Mountain Region of North Carolina, North Carolina Department of Environment and Natural Resources, Division of Water Quality, Groundwater Section. February.

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Pot. Map in Shallow Bedrock Zone – August 2022

- Current groundwater flow patterns similar to historical patterns in last RI (Arcadis, 2020), but better definition along the creek
- Converging flow lines on both sides of the creek
- Converging flow lines toward the tunnel are absent
- Consistent with LeGrand (2004)[1], groundwater in the regolith and interconnected bedrock fractures should discharge through seepage into streams (or other water bodies when present), from both sides of the basin

1. LeGrand, Harry E., 2004, A Master Conceptual Model for Hydrogeological Site Characterization in the Piedmont and Mountain Region of North Carolina, North Carolina Department of Environment and Natural Resources, Division of Water Quality, Groundwater Section. February.

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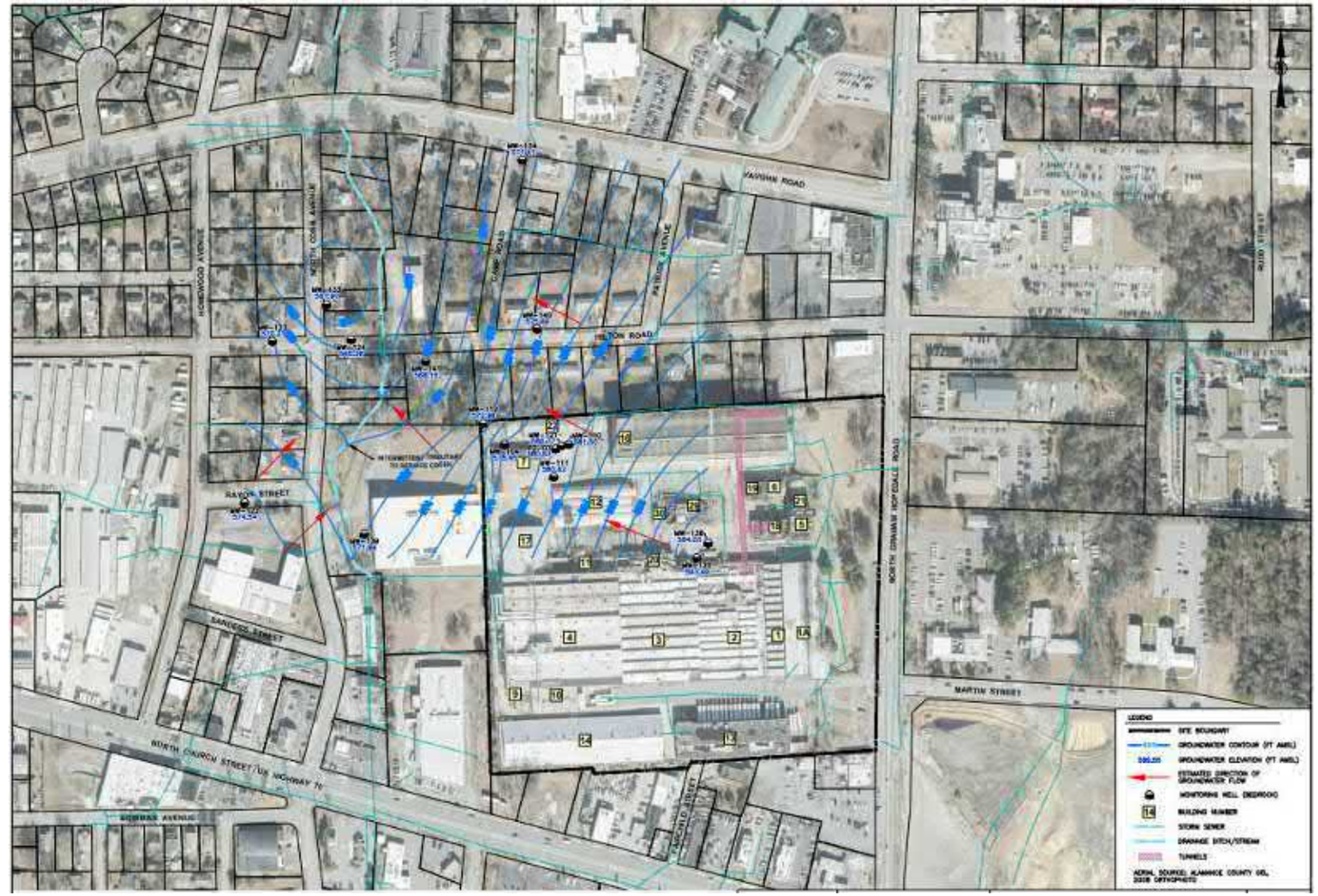
Pot. Map in Shallow Bedrock Zone – October 2022

VERY Similar to the August 2022 Data



1. LeGrand, Harry E., 2004, A Master Conceptual Model for Hydrogeological Site Characterization in the Piedmont and Mountain Region of North Carolina, North Carolina Department of Environment and Natural Resources, Division of Water Quality, Groundwater Section. February.

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HYDRAULIC PARAMETERS ESTIMATES

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Aquifer Information – Conductivity and Flow Velocity in Saprolite

- Hydraulic Gradient: Between 0.02 – 0.04 ft/ft
  - Similar gradients for saprolite and bedrock aquifers
  - Measured using October 2022 groundwater data
- Hydraulic Conductivity (K):
  - Between 1.96 – 7.62 ft/day[1, 2]
  - Values not representative of saprolite – biased high due to underlying bedrock
- GW Flow Velocity: (assumed 30% effective porosity)
  - 48 – 370 ft/year
  - Biased high due to underlying bedrock, (i.e., not representative of flow in saprolite alone)

1. Roy F. Weston, Inc. (Weston), 1993. Comprehensive Site Assessment, Subsurface Soil and Groundwater Investigation at the Waste Accumulation Pad and Underground Storage Tank Areas. Tarheel Army Missile Plant, Burlington, North Carolina. August 26.
2. Weston, 1994. Corrective Action Plan for the Waste Accumulation Pad and the Former Underground Storage Tank. Tarheel Army Missile Plant, Burlington, North Carolina. November 22.

Aquifer Information – Retardation Factors (For Saprolite Aquifer)

Chemical Constituent	Organic Carbon / Water Partition Coefficient (K_{oc}) (L/kg)	Source	Fraction Organic Carbon (f_{oc}) (4) (%)	Distribution Coefficient for Soil (K_d) (L/kg)	Porosity (θ) --	Bulk Density (r_b) (5) (kg/L)	Retardation Factor (R)	Relative Factor for Contamination Migration (6) (%)
Tetrachloroethene (PCE)	272	(1)	0.117%	0.319	0.25	1.50	2.92	0.34
Trichloroethene (TCE)	97	(1)	0.117%	0.114	0.25	1.50	1.68	0.59
cis-1,2-Dichloroethene (cis-1,2-DCE)	38	(1)	0.117%	0.045	0.25	1.50	1.27	0.79
Vinyl Chloride	56	(2)	0.117%	0.066	0.25	1.50	1.39	0.72
1,1-Dichloroethane	54	(1)	0.117%	0.063	0.25	1.50	1.38	0.72
1,2-Dichloroethane	44	(1)	0.117%	0.052	0.25	1.50	1.31	0.76
Benzene	66	(1)	0.117%	0.077	0.25	1.50	1.46	0.68
Toluene	182	(1)	0.117%	0.214	0.25	1.50	2.28	0.44
Methyl Tert-Butyl Ether (MTBE)	11	(3)	0.117%	0.013	0.25	1.50	1.08	0.93

Where:

K_{oc} = Organic carbon/water partition coefficient

f_{oc} = Fraction Organic Carbon

k_d = (soil) distribution coefficient = $f_{oc} K_{oc}$

r_b = bulk density of soil (dry)

q = Porosity of Aquifer Matrix

Retardation Factor $R = 1 + r_b k_d / \theta$

Notes:

(1) USEPA, 1996, Soil Screening Guidance: Technical Background Document, EPA/540/R95/128, May.

(2) USEPA, Technical Factsheet on: VINYL CHLORIDE (https://semspub.epa.gov/work/05/437069.pdf)

(3) Parsons Engineering Science, Inc., 1999, Final Methyl - Butyl Ether (MTBE), Its Movement and Fate in the Environment and Potential for Natural Attenuation.

(4) Average foc values from Remedial Investigation (See Table 6 of Remedial Investigation Report, Terracon Consultants, Inc. dated December 16, 2022.

(5) NCDEQ, 2019, Preliminary Soil Remediation Goals (PSRG), May.

(6) Reduction Factor for Flow Velocity in the Shallow (Saprolite) Aquifer, as compared to the bulk groundwater flow velocity.

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Aquifer Information – Conductivity and Flow Velocity in Bedrock

ED0

- Hydraulic Gradient: Between 0.02 – 0.04 ft/ft
  - Similar gradients for saprolite and bedrock aquifers
  - Measured using October 2022 groundwater data

- Hydraulic Conductivity (K):
  - Between 0.088 – 34 ft/day[1] (upper range not representative of overall site conditions)
  - Geometric mean: 1.3 ft/day[1]

- GW Flow Velocity (assumed 10% effective porosity)
  - 200 ft/year (calculated using geometric mean of K)
  - Higher flow ranges based on highest K values are unrealistic for a site-wide estimate
- Dissolved-phase constituents would migrate slower than groundwater based on their retardation factions (R)

1. Weston, 1998. Corrective Action Plan Addendum. Tarheel Army Missile Plant, Burlington, North Carolina. June 30.

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CHEMICALS OF CONCERN

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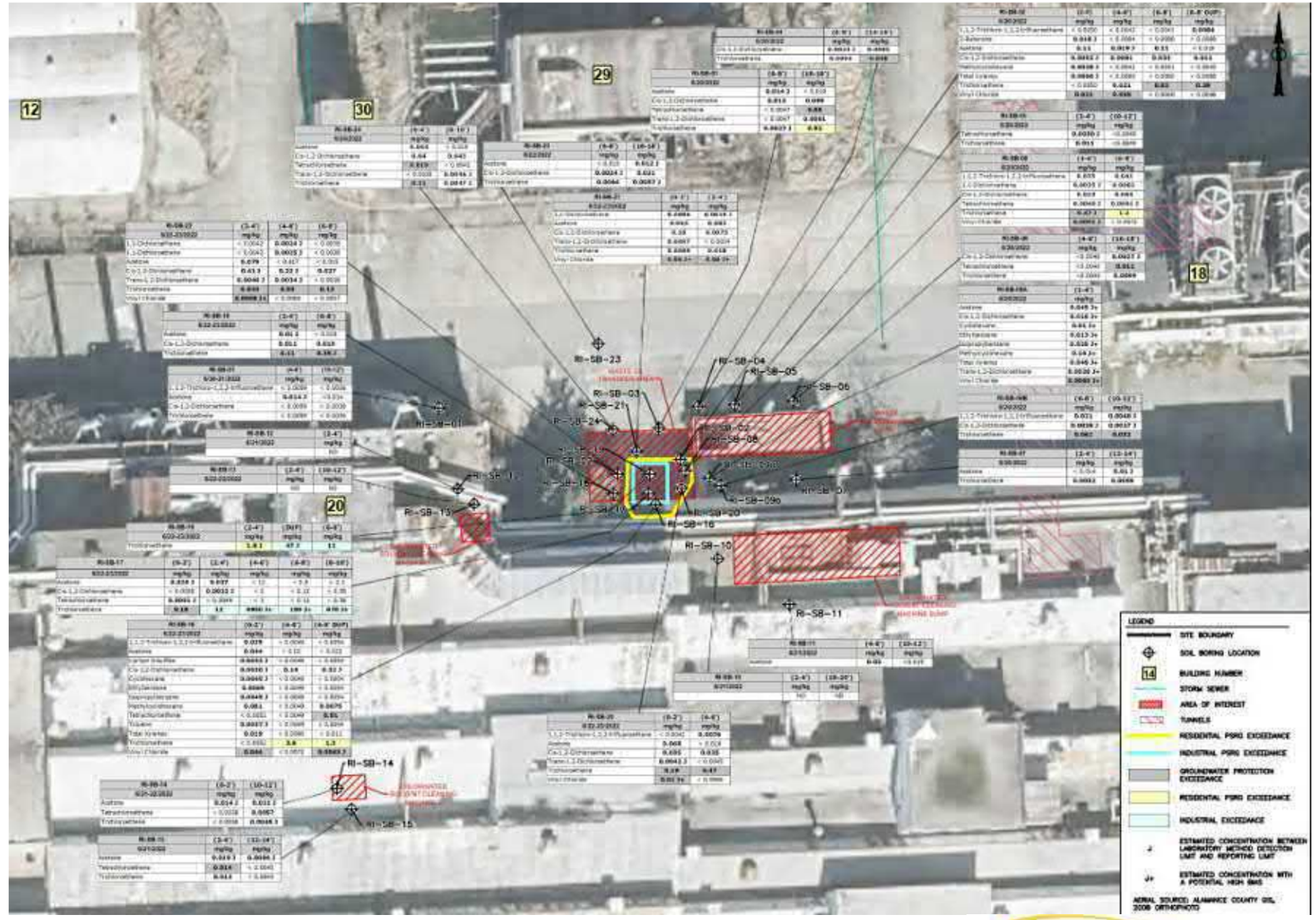
Soil Results (June 2022)

- Waste Oil Transfer Area contained the greatest PCE and TCE concentrations that exceeded the Industrial PSRG.
- Highest TCE Concentration- 6,900 mg/kg (RI-SB-17 [4-6’])
- Region Containing Unsaturated Soil that Exceeded Residential PSRGs: 150 cubic yards (CY) or 230 tons
- Region Containing Soil that Exceeded Industrial PSRGs: 60 CY or 90 tons



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Chemicals of Potential Concern

NAPL

- LNAPL and DNAPL have not historically been observed or detected at the site
- Residual TCE DNAPL is likely present in the unsaturated soil based on concentrations observed in RI-SB-17 compared to standard saturated concentration for TCE in soil (EPA RSL Summary Table, November 2022)
- Residual DNAPL in the unsaturated soil will continue leaching COPCs to groundwater

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Chemicals of Potential Concern

Sorbed Phase

Data from unsaturated and saturated soil indicates the presence of high levels of sorbed CVOC mass onto the soil in the primary source areas (waste accumulation pad and waste oil transfer area)

- 3,000 mg/kg of PCE detected beneath the WAP in 1993 (Weston, 1993)
- 1,000 - 1,900 mg/kg of TCE detected in saturated soil at waste oil transfer area (SB-04) in 2017
- 6,900 mg/kg of TCE detected in unsaturated soil at waste oil transfer area (RI-SB-17) in 2022

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Chemicals of Potential Concern

<u>Select VOCs (in Soil and Groundwater):</u>

- PCE; TCE; cis-1,2-DCE; Vinyl Chloride; 1,1-DCA; 1,2-DCA, benzene; carbon tetrachloride; MTBE; and
- Other VOCs in soil above the PSRGs (Table 7)
- Other VOCs in groundwater above the 2L Standards (Table 11)

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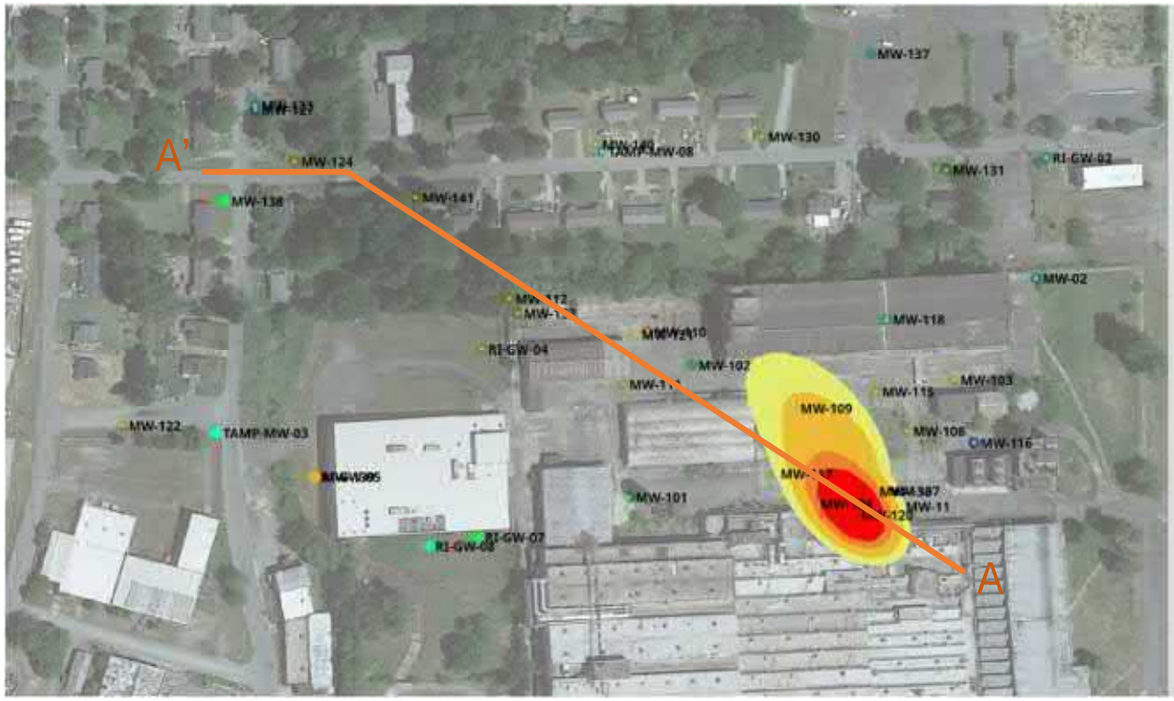
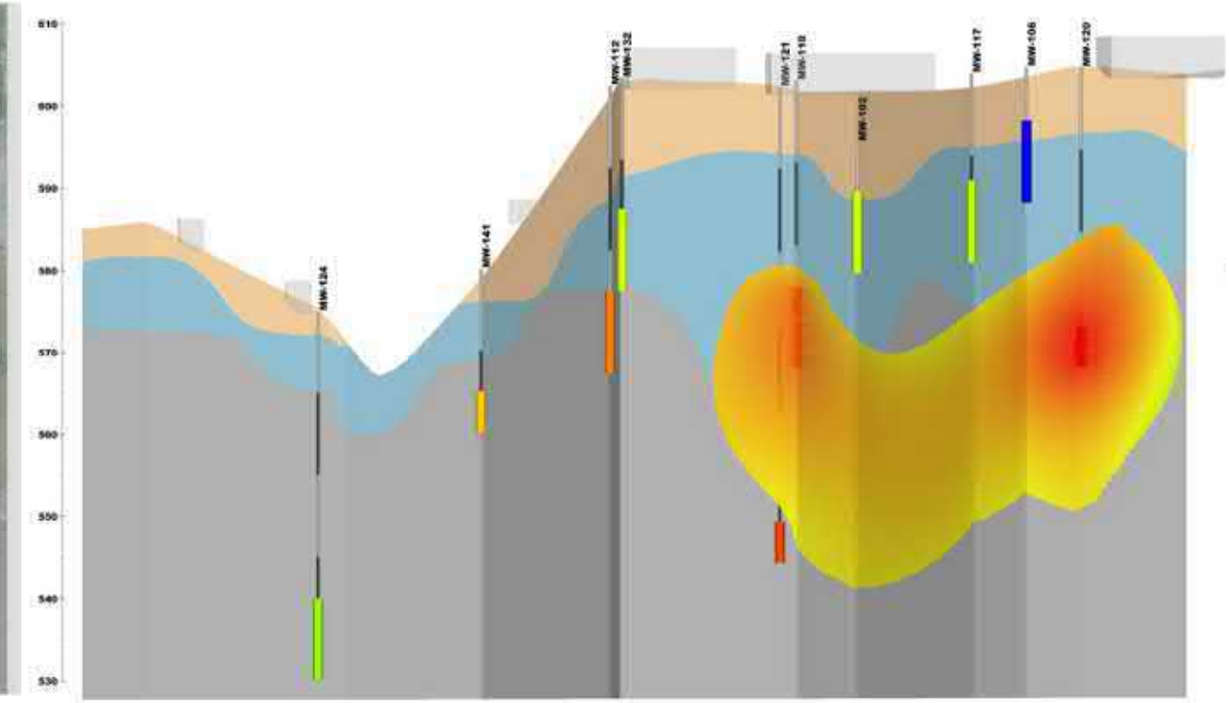
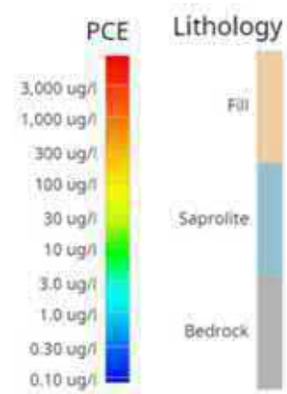
PCE in Groundwater (August 2022)

A-A' Cross Section







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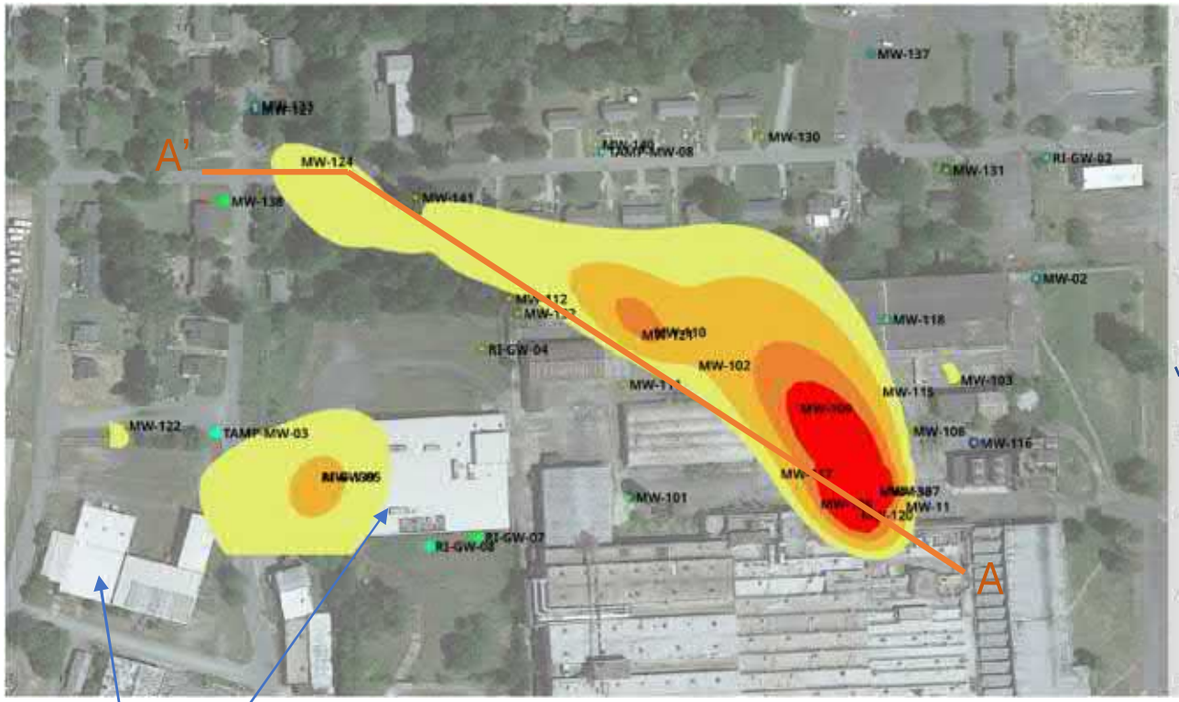
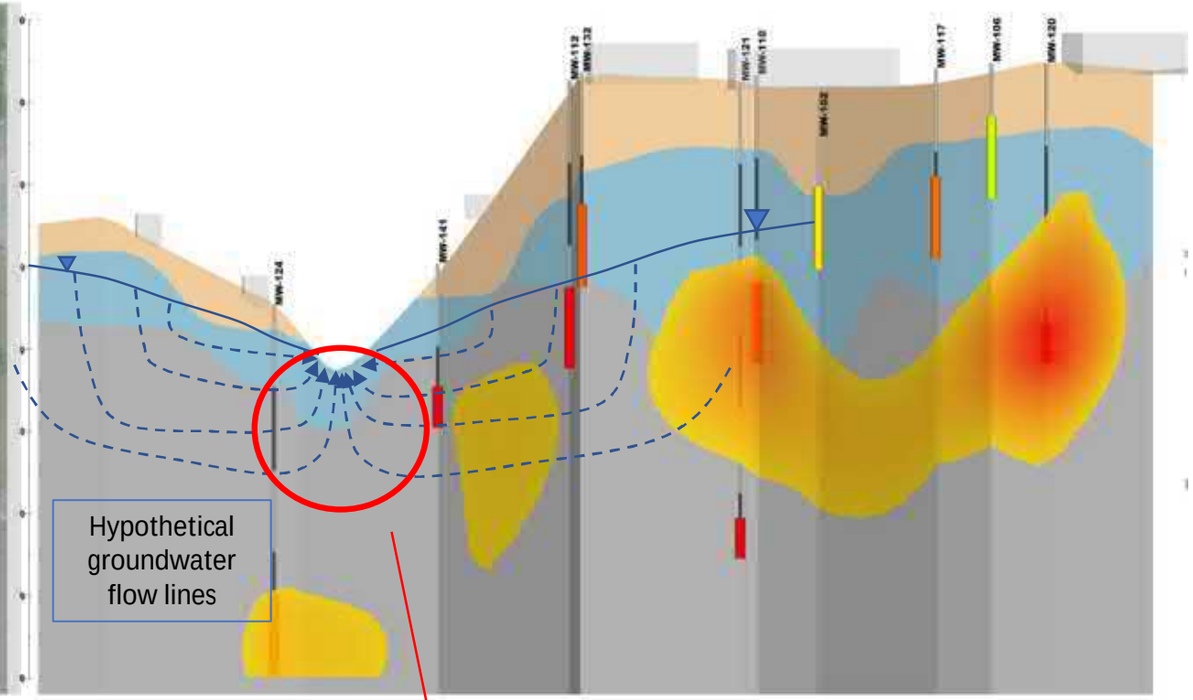
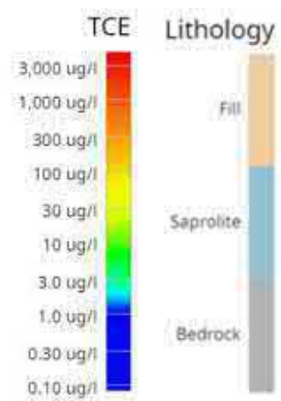
TCE in Groundwater (August 2022)

A-A' Cross Section





Potential Off-Site Sources
- Former Elder Mill
- Former Lucent Technologies



Groundwater Flow into the Page (Toward North)

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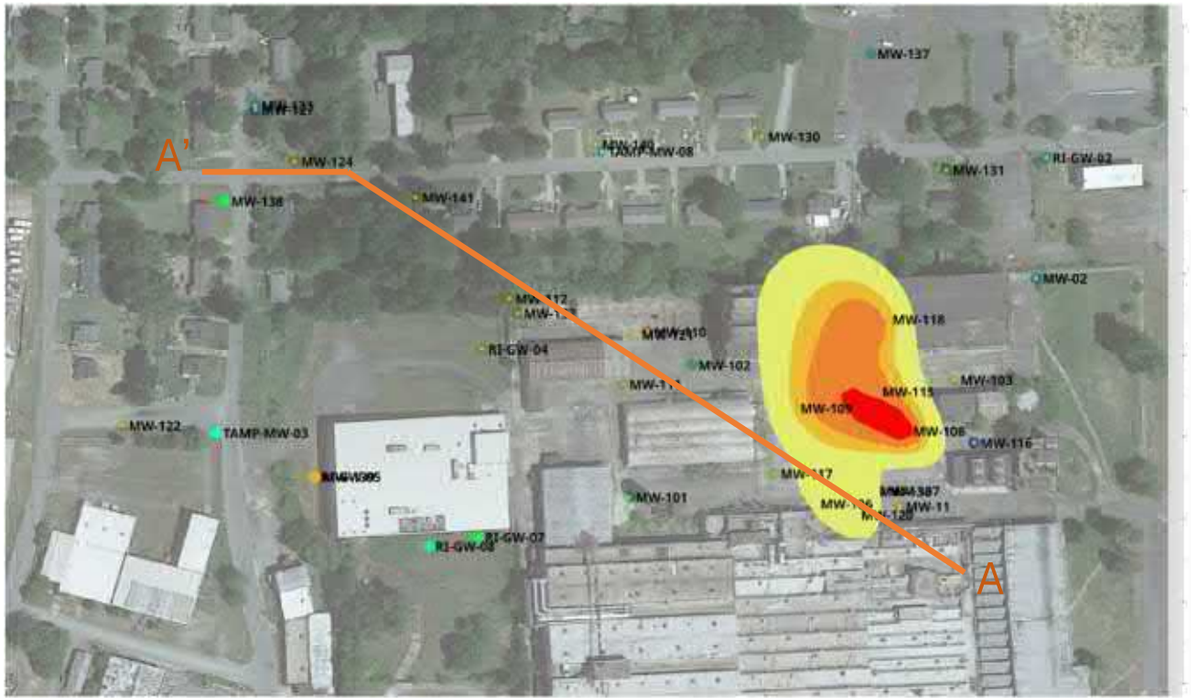
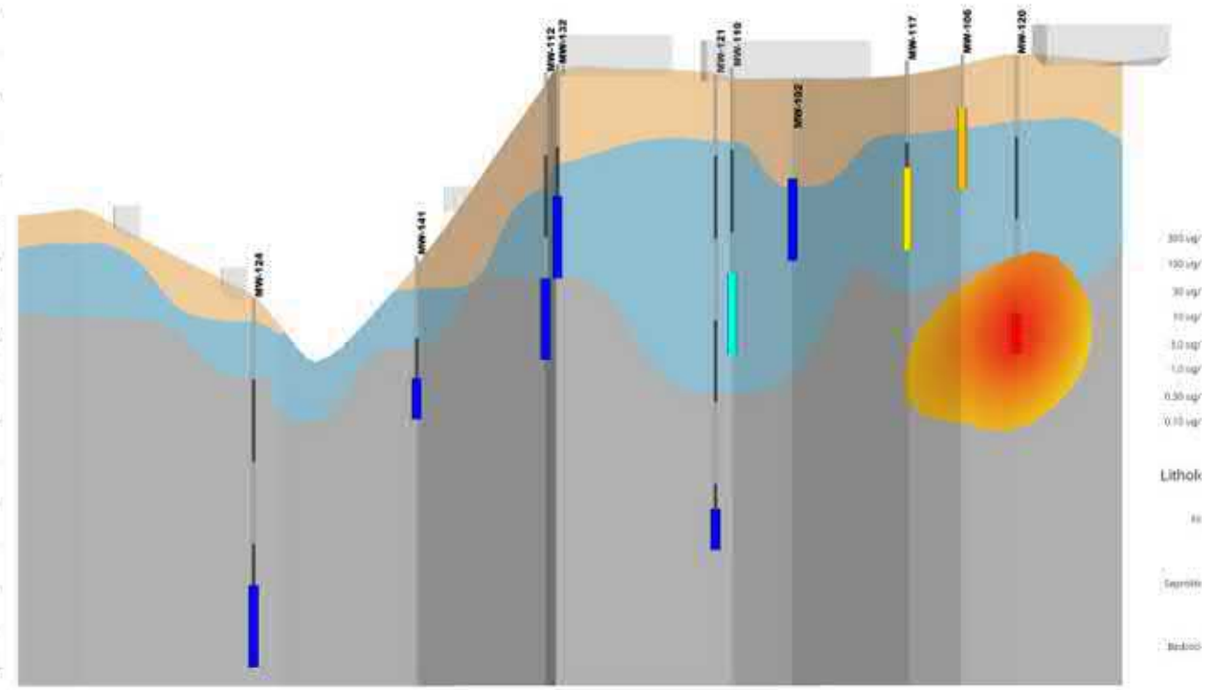
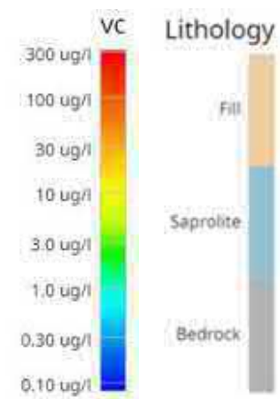
Vinyl Chloride in Groundwater (August 2022)

A-A' Cross Section







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Chemicals of Potential Concern

Dissolved Phase COPCs

- COPCs: CVOCs and BTEX/MTBE
- Dissolved-phase COCs present in numerous on-site and off-site monitoring wells
- Dissolved-phase CVOC plume extends off-site to the west, northwest, and north
- The extent of the dissolved phase plume is largely known; however, there are some data gaps with the western side of the plume.

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Chemicals of Potential Concern

Dissolved Phase COPCs (continued)

- Current ORP values are “positive” in most wells, indicating:
  - Aerobic conditions - not optimal for in situ degradation of CVOCs.
  - “Negative” ORP values were detected in MW-108 and MW-109 - adjacent to and downgradient of the EOS® injection. High concentrations of PCE and TCE degradation products (cis-1,2-DCE, vinyl chloride) indicate the pilot test injection is continuing to have an effect.

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Chemicals of Potential Concern

Vapor Phase

- On the Site:
  - Shallow soil vapor points in the NW portion of site have identified impacts above the Non-Residential and Residential Vapor Intrusion Soil Gas Screening Levels (VI-SGSLs) in 2017 and 2019[1]

- Off the Site:
  - Shallow soil vapor points have not identified impacts above the Residential VI-SGSLs in 2019[1] and 2022
  - Soil vapor has not been evaluated for the former Lucent Technologies facility west of the Site (Parcel 139443)

1. PIKA-Arcadis U.S. Inc., 2020. Draft Remedial Investigation Report, Revision 0. Tarheel Army Missile Plant, Burlington, North Carolina. Contract No. W91ZLK-13-D-0009, Task Order 0012. April.

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EXPOSURE PATHWAYS AND RESULTS OF HHRA / SLERA

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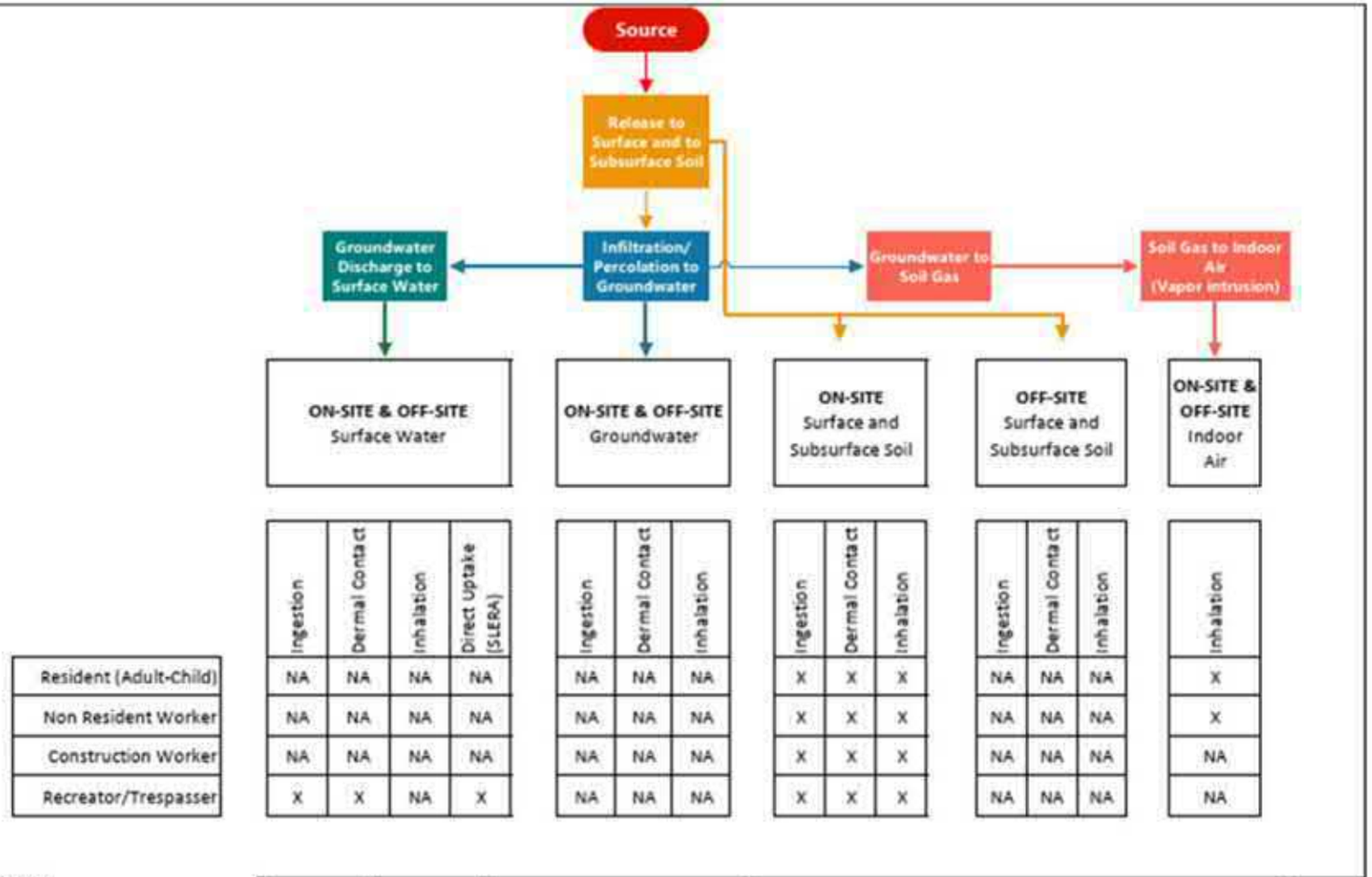
On-Site Risk Exposure Pathways

Evaluated using 2022 data and NCDEQ Risk Calculator Tool (July 2022 version)



	Surface Water				Groundwater			Surface and Subsurface Soil			Surface and Subsurface Soil			Indoor Air
	Ingestion	Dermal Contact	Inhalation	Direct Uptake (SLERA)	Ingestion	Dermal Contact	Inhalation	Ingestion	Dermal Contact	Inhalation	Ingestion	Dermal Contact	Inhalation	Inhalation
Resident (Adult-Child)	NA	NA	NA	NA	NA	NA	NA	X	X	X	NA	NA	NA	X
Non Resident Worker	NA	NA	NA	NA	NA	NA	NA	X	X	X	NA	NA	NA	X
Construction Worker	NA	NA	NA	NA	NA	NA	NA	X	X	X	NA	NA	NA	NA
Recreator/Trespasser	X	X	NA	X	NA	NA	NA	X	X	X	NA	NA	NA	NA

LEGEND:

NA = PATHWAY NOT APPLICABLE

X = POTENTIALLY COMPLETE PATHWAY

Project Manager: DM	Project No. 7521P145	Terracon 7327 W Friendly Ave Ste G Greensboro, NC 27410-6253	CONCEPTUAL SITE EXPOSURE MODEL
Drawn by: EW	Scale: 1"=2,000'		Tarheel Army Missile Plant 204 N. Graham Hopedale Road Burlington, NC
Checked by: LE	File Name: EXIBITS		Exhibit 3
Approved by: DM	Date: 09DEC22		

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Risk Calculator Results (for Human-Health)

Evaluated using 2022 data and NCDEQ Risk Calculator Tool (July 2022 version)

- The COPCs, mainly TCE and PCE, have the potential to cause non-carcinogenic and carcinogenic risks to the on-site and off-site populations based on highly conservative assumptions.
- The human-health exposure pathways that exceeded the risk criteria include:
  - On-Site Exposure Pathways:
    - Exposures to Soil: Resident, non-residential worker, construction worker, and recreator/trespasser.
    - Exposures to Surface Water (In Tunnels): Recreator/trespasser and construction worker [**even though this pathway was not directly available in the Risk Calculator]
    - Exposures to Vapor Intrusion via Groundwater to Indoor Air: Resident and non-residential worker.
  - Off-Site Exposure Pathways:
    - Exposures to Surface Water: Recreator/trespasser.
    - Exposures to Vapor Intrusion via Groundwater to Indoor Air: Resident and non-residential worker.
- Human-health exposure pathways that present the most concern: On-site exposure to contaminated soil and off-site exposure to surface water, relative to the other pathways.
- Potential risks associated with the vapor intrusion exposure pathway, based on groundwater quality data, suggested a concern for both on-site and off-site properties. However, empirical data (i.e., results from soil-gas samples) indicated that this exposure pathway is not likely present for the off-site properties.

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Screening-Level Ecological Risk Assessment

- The maximum concentrations for each COPEC were at least an order of magnitude or more below the bench ecotoxicity screening values (ESV) for both chronic and acute exposure scenarios.
- This finding is consistent with those reported by Arcadis (2020).
- Adequate information exists to conclude that ecological risks at TAMP are negligible, and a baseline ecological risk assessment is not warranted.

DATA GAPS

TO BE INVESTIGATED CONCURRENT WITH FEASIBILITY STUDY FOR SOURCE AREA

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Data Gaps

Gaps Related to COCs Extent and Distribution

- Lucent Technologies (along N. Cobb Ave):
  - Potential groundwater migration pathway due west toward Lucent
  - Vapor intrusion concerns
  - Seepage through eastern wall of facility
- Complete delineation of the western plume, and possible off-site sources:
  - Former Lucent facility at 201 N. Cobb Avenue (Parcel 139443)
  - Former Elder Hosiery Mills at 139 Homewood Avenue (Parcel 139434)
  - Former dry cleaning city directory sites at 119 North Cobb Avenue (Parcel 139441) and 1846 North Church Street (Parcel 139750)
- The depth of the transition between saprolite and bedrock is known in center of the site (Figure 16) due to boring log discrepancies.

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Data Gaps (Continued)

Potential Off-Site Sources to the West:

1. Former Lucent Technologies (201 N. Cobb Avenue)
2. Former Elder Hosiery Mills (139 Homewood Avenue)
3. Dry Cleaning City Directories Site (119 North Cobb Avenue)
4. Dry Cleaning City Directories Site (1846 North Church Street)

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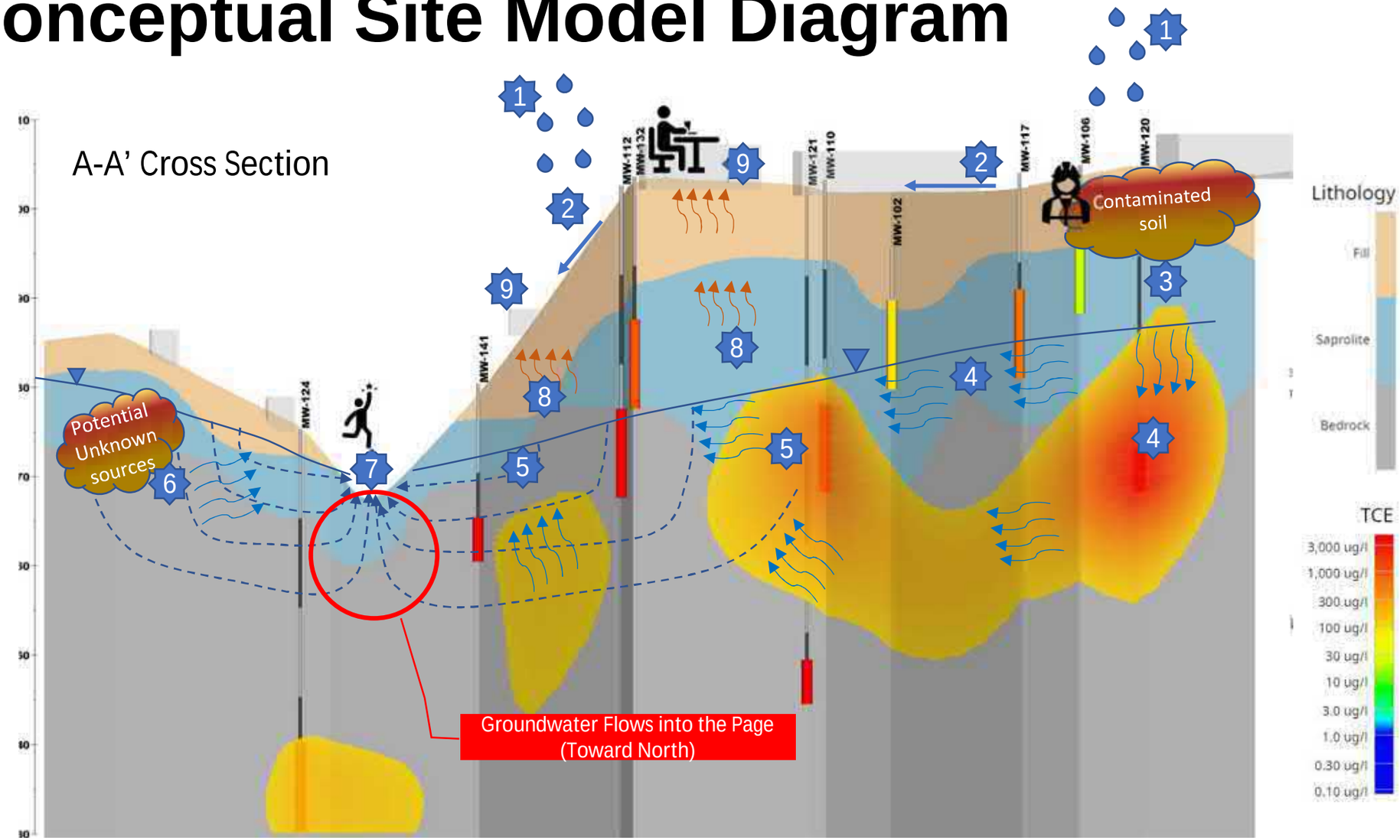
Other Data Gaps & Uncertainties

- The Owner should not dewater the tunnels without prior regulatory approvals.
- The variability of vapor intrusion data into houses during the winter-time period (versus summer).
- Current concentrations of petroleum-hydrocarbon impacts in soil near former UST Nos. 1, 2, 3, 5, 6, 7, and 8.
- Potential residual CVOC impacts beneath the WAP not known due to destruction and filling in of the WAP with rubble during prior removal actions. The concrete and metal debris would need to be removed before additional assessment could occur directly beneath the WAP.

Conceptual Site Model Diagram

1. Precipitation causes stormwater to collect on the ground surface.
2. Run-off flows across pavements, collects in stormwater drains, and infiltrates through cracks/gaps in paved surface.
3. Remaining VOCs in saprolite (at residual concentration) leach into groundwater.
4. Shallow groundwater migrates laterally in saprolite and vertical into bedrock fractures.
5. Groundwater (containing VOCs) migrates downgradient due to changes in hydrostatic head. PCE and TCE degrade (very slowly) to form DCE, and vinyl chloride.
6. Other potential off-site sources (if present) also migrate toward the creek and commingle with known releases from TAMP.
7. VOC-impacted groundwater discharges into the creek, at very slow rates, and impacts surface water quality.
8. VOCs in degas from groundwater, enter soil gas, and migrate upward due to diffusion and advective currents in soil pore spaces.
9. VOCs can enter house & buildings through crawlspaces, small cracks in concrete slabs, utility trenches, and other routes of entry.



Pathways with the greatest potential for human exposures:

1. Children or adults playing in creek (off-site exposure).

2. Construction workers excavating dirt (on-site exposure).

2. Future workers exposed due to vapor intrusion risk (on-site exposure).

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POTENTIAL REMEDIAL ALTERNATIVES TO CONSIDER IN THE FEASIBILITY STUDY

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Potential Alternative Remedial Strategies / Concepts

Alt #1 (Soil Source Area)

Excavate PCE & TCE Impacted Soil in Waste Oil Transfer Area

- Excavate Soil that Exceeded Industrial PSRGs: 60 CY or 90 tons
- Excavate Soil that Exceeded Residential PSRGs: 150 CY or 230 tons
- Soil volumes could be larger,… determine with field screening during construction

Alt #2 (Soil and Groundwater Source Areas)

Same As Alternative #1, plus

- Construct Infiltration Gallery in Bottom of Excavation
- Add Amendments such as Emulsified Vegetable Oil (or other Electron Donors) coupled with enriched microbial consortium containing *Dehalococcoides* sp.
- Add additional amendments in 1-2 years later, as required

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Potential Alternative Remedial Strategies / Concepts

<u>Alt #3 (Soil and Groundwater Source Areas, Plus Site-Wide GW Treatment)</u>

Same As Alternative #2, plus

- Construct several treatment transects along plume using multiple rows of ~10 Bedrock injection well w/ ~1-year travel time separation
- Inject Amendments such as Emulsified Vegetable Oil (or other Electron Donors) coupled with enriched microbial consortium containing *Dehalococcoides* sp.

<u>Alt #4 Other Strategies to Consider?</u>

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POTENTIAL FUTURE STEPS FOR 2023 AND BEYOND

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Potential Future Activities

Tasks	What Can be Gained?	Date
Develop Feasibility Study and Cost Estimate for Remedial Strategies for Source Area (Alternatives #1 and/or #2)	Screen and select the remedy to remove the primary source area north of Building 2, contributing to the sources of COPCs in the groundwater phase	December 2023 (Completion Target)
Develop Feasibility Study and Cost Estimate for Remedial Strategies for Site-Wide Groundwater Treatment (Alternative #3, or other Strategies)	Screen and select the remedy to begin treating groundwater impacts across the site	December 2023 (Completion Target)
Excavation and Removal of USTs in the Grassy Area East of the Site	Eliminate potential sources of petroleum hydrocarbons that could be released to soil and groundwater	December 2023 (Completion Target)
Begin Implementation of Remedial Strategies for Source Area (Alternatives #1 and/or #2)	Begin treatment of soil impacts in source zone as quickly as possible	July 2023 (Completion Target)
Assess the potential Vapor Intrusion Concerns at the Former Lucent Technologies facility, dependent on whether these impacts are the result of the U.S. Government's activities or due to environmental issues caused by Lucent Technologies	Determine whether there are vapor intrusion concerns at the facility (if due to the U.S. Government's activities)	TBD
Begin Implementation of Remedial Strategies for Groundwater (Alternatives #3, or other Strategies)	Begin treatment of site-wide groundwater impacts as soon as feasible	TBD
Investigation remaining data gap, including potential off-site sources to the west of TAMP	Determine whether off-site sources exist to the west of the TAMP facility	TBD
Other?		
Other?		

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Thank you!

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