



DEPARTMENT OF THE ARMY  
HEADQUARTERS, 88TH REGIONAL READINESS COMMAND  
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FORT SNELLING, MINNESOTA 55111-4009

February 15, 2008

Deputy Chief of Staff Engineer

Mr. Paul Jayko  
Ohio Environmental Protection Agency  
Northwest District Office, DERR  
347 N. Dunbridge Road  
Bowling Green, OH 43402

RE: Submission of Final Removal Action Completion Report for U.S. Army Reserve Local Training Area (LTA), Marion, Ohio, Revision 2.0, February 2008

Dear Mr. Jayko:

Enclosed, please find two (2) copies of single revised page of the Draft Final Removal Action Completion Report (RmACR) for the U.S. Army Reserve Local Training Area, Marion, Ohio, (USARC GFPR Contract #W911SO-04-F0017), generated in response to Ohio EPA comment. In its 04 February 2008 letter, Ohio EPA provided one comment regarding the Draft Final Removal Action Completion Report. The comment is repeated below with the Army's response:

**Comment: Draft Final Removal Action Completion Report  
Section 3.1.1, page 13, line 31.**

The document states:

"This additional sample was collected at the request of an oversight contractor representative..."  
For clarification, please identify the organizational name of the oversight contractor.

**Response:** *The oversight contractor, Mr. Donald Casey, USACE, will be identified in the referenced report section. Mr. Casey was the Army's designated construction oversight and signatory for the Marion LTA 2007 Non-Time-Critical Removal Action. The sentence will be reworded to state that the sample was collected "at request of Mr. Donald Casey, USACE, US Army construction oversight designee for the 2007 NTCRA."*

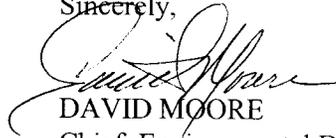
Page 13, Section 3.1.1, line 31 has been revised accordingly, and the single revised page is enclosed for insertion into the Agency's copies of the Removal Action Completion Report.

**Through issuance of this revised page, the Army issues the Marion LTA Removal Action Completion Report document as Final.** A copy of the complete document, including this response to comment and transmittal letter, will be placed in the Marion LTA Administrative Record and made available for public review in the Information Repository.

We look forward to receipt of the Agency's written concurrence with this Final Report.

Please contact Ms. Lisa Gulbranson of the 88<sup>th</sup> RRC at (612) 713-3752 with questions. Thank you.

Sincerely,



DAVID MOORE  
Chief, Environmental Division  
88<sup>th</sup> Regional Readiness Command

Enclosures

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**USARC GFPR  
Draft Final  
Removal Action Completion Report  
U.S. Army Reserve Local Training Area  
Marion, Ohio  
Contract # W911SO-04-F0017**

**Submitted to:  
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**December 2007**

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ALM	USEPA Adult Lead Methodology
AOC	Area of Concern
AM	Action Memorandum
AR	Administrative Record
ARARs	Applicable or Relevant and Appropriate Requirements
AREE	Area Requiring Environmental Evaluation
ACM	Asbestos containing material
Army	Department of Army
ATSDR	Agency for Toxic Substances and Disease Registry
BRA	Baseline Risk Assessment
bgs	below ground surface
CDC	Centers for Disease Control and Prevention
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
COC	Contaminant of Concern
COPC	Contaminant of Potential Concern
cy	Cubic Yards
DOD	Department of Defense
DOT	Department of Transportation
EB	Equipment Blank
EE/CA	Engineering Evaluation/Cost Analysis
EPA	Environmental Protection Agency
ERA	Ecological Risk Assessment
FD	Field Duplicate
FFS	Focused Feasibility Study
FS	Feasibility Study
GIS	Geographic Information System
gpm	Gallons per minute
GFPR	Guaranteed Fixed Price Remediation
GTSP	Granulated Triple Super Phosphate
HASP	Health and Safety Plan
HHRA	Human Health Risk Assessment
LCS	Laboratory Control Sample
LDR	Land Disposal Restrictions
IDW	Investigation Derived Waste
KEMRON	KEMRON Environmental Services, Inc.
LTA	Local Training Area
MCL	Maximum Contaminant Level
MED	Marion Engineer Depot
mg/kg	Milligrams per kilogram
mg/L	Milligrams per Liter
MOE PSQGs	Ontario Ministry of Environment Provincial Sediment Quantity Guidelines
MS/DS	Matrix Spike/Matrix Spike Duplicate
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NTCRA	Non-Time Critical Removal Action
Ohio EPA	Ohio Environmental Protection Agency
OSHA	United States Occupational Safety and Health Administration
OUPS	Ohio Utility Protection Service
PA	Preliminary Assessment

PAH	Polynuclear aromatic hydrocarbon
PCB	Polychlorinated Biphenyls
PID	Photoionization Detector
ppm	Parts per million
PRT	Indiana Bat Potential Roost Tree
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
RAB	Restoration Advisory Board
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act
RfD	Reference Dose
RmACR	Removal Action Completion Report
RmAWP	Removal Action Work Plan
RmG	Removal Action Goal
RRC	Regional Readiness Command
SACM	Superfund Accelerated Cleanup Model
SAP	Sampling and Analysis Plan
SARA	Superfund Amendments and Reauthorization Act
SI	Site Investigation
SVOC	Semi Volatile Organic Compound
SSI	Supplemental Site Investigation
TAL	Total Analyte List
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
µg/L	Micrograms per liter
U.S.C.	United States Code
UCL	Upper Confidence Limit
VOC	Volatile Organic Compound
UHC	Underlying Hazardous Constituent
USACE	United States Army Corps of Engineers
USAEC	United States Army Environmental Command
USAR	United States Army Reserve
USFWS	United States Department of the Interior, Division of Fish and Wildlife
UTS	Universal Treatment Standards

## **1.0 INTRODUCTION AND BACKGROUND**

### **1.1 Introduction**

The purpose of this Removal Action Completion Report (RmACR) is to present the US Army's report on the execution of a Comprehensive Environmental Response, Compensation and Liability Act Environmental (CERCLA) Non-Time-Critical Removal Action (NTCRA) at three Areas Requiring Environmental Evaluation (AREEs) at the US Army Reserve 88th Regional Readiness Command (RRC) Marion Local Training Area (LTA). This document discusses the work performed during removal action activities conducted within the three AREEs that are the subject of the NTCRA, identified as LTA-01, LTA-15 and LTA-16. The Marion LTA is located at 2565 Harding Highway East Marion County, Marion, Ohio.

Work was initiated in accordance with the Final Action Memorandum, dated June 13, 2007, and the Final Removal Action Work Plan (RmAWP), Revision 2.0, July 12, 2007. The Action Memorandum outlines the removal of surface and subsurface soil that contain contaminants of concern (COC) at levels exceeding the Removal Action Goals (RmGs) for site-specific COCs as identified in the Action Memorandum. The RmAWP details the procedures to be followed in conducting the removal of contaminated soil and associated COC source material from the defined AREEs.

Site Investigation (SI) activities completed at the Marion LTA provided environmental data and observations that assorted debris, waste materials and associated contaminated soils were present on the property in LTA-01, LTA-15 and LTA-16. An Engineering Evaluation and Cost Analysis (EE/CA) was conducted, resulting in a recommendation for a NTCRA at these three work areas. The EE/CA (KEMRON, 2006) was made available to the public, with a public notice published in the local newspaper, announcement to the Restoration Advisory Board (RAB) and the Ohio EPA, and a public comment period was conducted. Subsequent to receipt of the public comments, the Army evaluated public comment and prepared an Action Memorandum, including a Responsiveness Summary for comments provided by the public on the EE/CA. The Action Memorandum was signed by the Army on 25 June 2007, documenting the Army's determination that a NTCRA, including excavation and off-site disposal, was appropriate under CERCLA for the three AREEs within the Marion LTA. The Final Action Memorandum and RmAWP both address specifics of the removal actions within LTA-01, LTA-15 and LTA-16.

The completed NTCRA addressed removal of contaminated soils and associated COC source material at LTA-01, LTA-15 and LTA-16. Non-friable asbestos (e.g., transite) was also identified on the surface at LTA-01 and LTA-15. LTA-15 was determined to have a limited area containing soils with concentrations of volatile organic compounds (VOCs) that were collocated with elevated metals levels. As described in the Final EE/CA, the potential risks to human health in the three AREEs were based on the elevated presence of arsenic, lead and benzo(a)pyrene. VOCs detected in the subsurface at LTA-15 were not the COCs that caused an unacceptable risk under CERCLA for the potential future human populations at the site, and thus VOCs were not included in the RmGs for the site. Additional details regarding the streamlined human health risk assessment for the NTCRA are included in the EE/CA (KEMRON, 2006), which is available in the Administrative Record and Information Repository for this project.

As documented in the EE/CA and Action Memorandum, detected contaminants in the three AREEs were determined to pose a potential risk to human health. The NTCRA was designed to remove the COC source materials and associated contaminated soil located at and near the surface at LTA-01, LTA-15 and LTA-16, such that remaining COC concentrations would not exceed the human health based RmGs for lead, arsenic and benzo(a)pyrene.

As discussed in the EE/CA and Action Memorandum, this NTCRA was anticipated to mitigate unacceptable risks posed by the COCs in the identified pathways for potential future populations, with no further action anticipated at these sites.

The sampling methods and protocol followed during the NTCRA sampling events discussed in this report are listed in the Marion Final Sampling and Analysis Plan (SAP, KEMRON, 2005), the USARC Quality Assurance Project Plan – Kings Mills, Ohio and Marion, Ohio (QAPP, KEMRON, 2007), and the Final Marion LTA RmAWP (KEMRON, 2006).

## **1.2 Facility Description and Background**

The Marion LTA occupies 127.1 acres of the southern portion of the former Marion Engineer Depot (MED), which occupied 653.2 acres. The site location is illustrated in Figure 1. The Depot, built in 1942 during World War II, was best known for its ability to receive and store the heaviest type of engineer equipment. Although its official mission changed several times during its operation, the Depot was involved in shipping, receiving, storing and repairing various types of equipment for the Army, Air Force, the 2nd Army, and the Treasury Department. The entire MED was placed in inactive status in 1961.

The Marion LTA property was officially transferred to the U.S. Army Reserve on July 1, 1962. Since that time, the U.S. Army Reserve property had been used for intermittent outdoor training facility for the Ohio National Guard until it was closed in November 1998. The 88th Regional Support Command (later renamed the 88th Regional Readiness Command) acquired the property in March 1996.

The training area consists of unimproved land containing some secondary successional forest growth and open field areas with sparse to dense brush. Relief is flat with elevations ranging from 982 feet to 988 feet above sea level. The site contains mainly local indigenous plant and tree species such as milkweed, wild carrot, foxtail, goldenrod, maple saplings, honey locust and some large white oak trees.

There is no specific historical documentation describing the disposal of hazardous materials or waste at MED, however, past site assessments and investigations have indicated that hazardous materials were handled and/or disposed of at MED. Based on the presence of these materials at MED and the historic use of the entire Marion parcel, site investigations at the Marion LTA parcel have assumed that a variety of hazardous materials may also have been handled/disposed of at the LTA portion of the property in the past. Previously prepared site assessment and investigation reports have indicated that hazardous materials that may have been handled at the property include: solvents, thinners, fuel and lubricants, waste lubrication oil and fuel, waste sandblast media, waste paint material, and steam cleaning residue. The site investigations for the Marion LTA parcel, including the 2005-2006 site investigation, have included sampling and laboratory analyses to determine the presence or absence of contaminants based on the potential for historic use of this wide suite of hazardous materials. Previous environmental investigations identified and evaluated numerous AREEs and ultimately recommended three AREEs for remedial action (LTA-01, LTA-15 and LTA-16).

A variety of investigations have been conducted on the Marion LTA property, focused primarily on surface indications, possible disposal areas and subsurface anomalies identified during geophysical studies. Past site CERCLA actions are summarized in chronological order in the Final Action Memorandum, and are detailed in separate reports available in the administrative record for the Marion LTA.

KEMRON installed permanent groundwater monitoring wells in four separate investigation areas (LTA-01, LTA-11, LTA-15 and LTA-16) during 2005 Supplemental Site Investigation (Supplemental SI) field activities. The results of groundwater monitoring in these wells was documented in the Final

Supplemental Site Investigation Report (KEMRON, 2006). The Supplemental SI Report concluded that no impact to groundwater from historic site use exists. As an additional precaution, Ohio EPA commented that the NTCRA should include post-removal groundwater sampling in the three work areas to demonstrate that the field actions did not mobilize contaminants to the monitoring zone in the LTA-01, LTA-15 and LTA-16 wells. In response to the Agency's comments, the Army included post-removal action groundwater monitoring in these wells for total and dissolved metals. The groundwater monitoring to be conducted was described in the Final Removal Action Work Plan (KEMRON, 2007).

KEMRON reviewed the past site environmental data in planning the NTCRA for LTA-01, LTA-15 and LTA-16. Based on environmental information and data from historic CERCLA activities completed at the site through 2005, the Army determined that the NTCRA would include laboratory analysis of the concentrations of the following analytes in soil for each NTCRA work area:

LTA-01: Semi-volatile Organics and Metals;

LTA-15: Volatile Organics, Semi-Volatile Organics, and Metals; and,

LTA-16: Semi-volatile Organics and Metals.

All sampling and analysis activities conducted during the NTCRA were performed in accordance with Ohio EPA-approved plans, including the Quality Assurance Project Plan (KEMRON, 2007), Final Removal Action Work Plan (KEMRON, 2007) and Sampling and Analysis Plan (KEMRON, 2005). By removing all soil COCs concentrations above RmGs, no further action will be necessary in the future to address soil contamination and associated pathways at the remedial action areas.

The Action Memorandum described AREE LTA-01, located on the southwestern portion of the Marion LTA (see Figure 2), as having been impacted by apparent fill material and shallow subsurface soils containing various contaminants including metals, PAHs and nonfriable asbestos. Subsequent to clearing of vegetation from the site, minimal non-friable asbestos was identifiable. No potentially asbestos containing materials (ACM) were identified in the subsurface during excavation, and only small, localized chips of nonfriable ACM were observed on the surface prior to excavation. LTA-15 and LTA-16 are located in the northern third of the parcel adjacent to one another, as shown on Figure 2. LTA-15 is characterized by readily identifiable surface debris. Laboratory analyses of surface and shallow subsurface soils at LTA-15 during SI activities exhibited elevated metals and, in a limited area, volatile organic compounds (VOCs). Buried containers were encountered in this area during the 2005 SI field work. LTA-16 is located within an isolated 0.47 acre Category 2 wetland, designated as wetland W3 in recent studies conducted on behalf of the 88th RRC by others (BHE, 2006). Interviews conducted through the Preliminary Investigation and Site Investigation (PA/SI) phases of the CERCLA process for the Marion LTA indicate that LTA-16 was historically used as a burn area. LTA-16 exhibits elevated metals and PAHs in the surface and shallow subsurface soils.

Subsequent to the engineering evaluation and cost analysis (EE/CA), the recommended alternative for LTA-01, LTA-15 and LTA-16 was selected in the Final Action Memorandum (KEMRON 2007). The NTCRA was specified to include excavation of the contaminated surface and shallow subsurface soil and surface and near surface waste source materials in each of the three areas. Excavating wastes and soil containing elevated levels of COCs was determined as the appropriate means to mitigate the public health threat posed by the surface and shallow subsurface soil at the sites under industrial/commercial use scenario. The selected action included disposal of excavated soil and waste in an appropriately permitted off-site landfill. As also noted in the Final Action Memorandum, following excavation and off-site disposal of contaminated soil and source materials, the resulting excavations would be graded and backfilled as necessary with clean fill to establish acceptable drainage to allow use of the property for the Reservists' training activities. The wetland (W3) would be restored to approximate current grade to allow

the wetland to naturally recover. The removal action areas would be appropriately seeded. Soil removal was determined to meet all objectives for the remedial action, and was the selected alternative for each area. The site specific remedial action goals were established for the contaminants of concern (COCs) through a streamlined risk assessment as discussed in the EE/CA. The COCs include benzo[a]pyrene, arsenic, and lead (see table 1). By removing all soil COCs concentrations above RmGs, no further action will be necessary in the future to address soil contamination and associated pathways at the remedial action areas.

## **2.0 EXCAVATION, BACKFILLING AND SITE RESTORATION**

Within each LTA area, the approximate areal extent and depth of COCs in soil were defined and documented in the Final Removal Action Work Plan, dated July 12, 2007. The anticipated limits of excavations were determined based on previous CERCLA site investigation phases conducted at this facility by the Department of the Army. The NTCRA was conducted in accordance with the Removal Action Work Plan which identified the work areas, approximate limits of excavations, site preparatory work activities, sediment and erosion controls, confirmatory soil sampling and other activities to be conducted in each of the task areas. Numerous preparation activities were undertaken in advance of initiating any site work.

### **2.1 Site Preparatory Activities**

Several site preparation activities were required to be completed in advance of any site excavation activities. These activities are briefly summarized as follows:

#### ***2.1.1 Removal of Potential Bat Roost Trees***

Previous site natural resource evaluation activities determined the potential presence of roosting trees for the endangered Indiana bat at a few locations on the LTA property (BHE, 2006). Two of the tree locations were identified in proximity to the NTCRA work areas, including one adjacent to LTA-16 and one near a potential equipment approach area west of LTA-15. In conformance to agreements between the 88<sup>th</sup> RRC and US Fish and Wildlife Service, the identified potential roosting trees were required to be cut down in advance of a defined ecological activity window. The two potential bat roost trees were felled on April 3, 2007.

#### ***2.1.2 Pre-activity Conformance to Substantive Elements of State and Federal Permitting***

The NTCRA activities were planned in areas that potentially encroach upon existing on-site surface water streams/ditches and identified wetlands. In LTA-01, activities were confined within the limits of two stream/ditch courses identified as OD-1 and OD-2 (see Figure 2). Additionally, temporary culvert installation was considered to provide access across stream OD-4 to LTA-15 and LTA-16. The Army submitted the information necessary to conform to US Army Corps of Engineers Nationwide permitting for installation of temporary culverts by filing the information required by USACE Form 4345. The filing was completed on 11 June 2007, in case modification of available equipment access approaches were necessary at LTA-01 or LTA-15. After mobilization to the field, the Army determined that installation of the temporary culverts was not required. The Army submitted documentation on 29 October 2007 to the USACE noting that the culverts were not installed and that coverage under the submittal was terminated. Copies of the USACE submittals are retained in the project records.

In LTA-16, the presence of a Category 2 isolated wetland, designated as wetland W3, necessitated conformance with Ohio EPA isolated wetland permitting prior to intrusive activity conduct in LTA-16. The Army submitted the required information to Ohio EPA and received notice of coverage under General Permit for this type of wetland in a letter dated 23 May 2007.

#### ***2.1.3 Pre-removal Action Activities***

Pre-removal action activities included conduct of a Public Availability Session, performance of a buried utility location clearance survey, installation of erosion control silt fencing, removal of surface vegetation within each removal action area, construction of a vehicle/equipment decontamination station, mobilization of equipment and office trailer, and installation of access signage and gate control features, and delivery of required equipment to the site.

To ensure that the citizens of the community had opportunity to be fully informed of the planned activities at the Marion LTA, the Army advertised and conducted a Public Availability Session at the Tri-Rivers Career Center, Marion, OH on 25 June 2007. A fact sheet and notice of the session was mailed to all citizens on the Marion LTA mailing list. Individuals who own property immediately adjacent to the Marion LTA received a personal letter and invitation to the session from USAEC and the 88<sup>th</sup> RRC. The session was attended by multiple Army representatives, as well as members of the contractor project management personnel, who all were available to informally talk with attendees and answer their questions about the site, NTCRA schedule and work activities, and potential impacts to citizens in the area. Several citizens, who live adjacent to the Marion LTA, as well as other interested community members, attended the session.

The project Quality Assurance Project Plan (QAPP), and Health and Safety Plan (HASP) were reviewed and updated as appropriate prior to initiation of the NTCRA field work at the Marion LTA. Revised pages of the QAPP were distributed to the Ohio EPA and Marion RAB Technical Committee points of contact, consistent with the Marion LTA Community Involvement Plan. The Sampling and Analysis Plan was reviewed and determined to be adequate, as the Final RmAWP included all additional project-specific sampling protocol for the NTCRA.

Prior to initiation of any excavation activities, the Ohio Utility Protection Service (OUPS) was contacted for the purpose of identifying any potential buried utility lines crossing any of the proposed excavation areas. OUPS was contacted on July 13, 2007. No buried utility lines were identified within the work areas.

An office trailer and other necessary site structures were mobilized to the site on 16 through 18 July 2007.

A vehicle/equipment decontamination station was constructed on 18 July 2007. The decontamination station consisted of installation of an approximate 15 by 30 foot concrete pad with shallow sump and runoff water collection equipment. Vehicles exiting from a removal action area were spray washed to remove surface debris/dust on the decontamination pad before exiting the property. All decontamination water was pumped into surface collection tanks for analysis. Clean water for decontamination was provided through an Ohio American Water metered location on the Marion Industrial Center. The water truck was filled at the metered location, gaining access through the gate at the north end of LTA-01, which was kept locked when not in use for decontamination water loading.

Tree clearing began in LTA-01 and was followed by clearing in LTA-15 and LTA-16. Removal of surface vegetation within each removal action area was completed by July 27, 2007. Surface vegetation consisted of brushy materials and small to mid-size trees located primarily throughout LTA-01 and sparsely within LTA-15 and -16. Vegetative materials were removed with mechanical equipment and chipped/shredded on site. These materials were utilized on site for road bedding in vehicle traffic areas. Installation of erosion control devices was completed within two days of clearing completion at LTA-01 perimeter locations along ditches OD-1 and OD-2, and also along the site road crossing OD-3 approaching LTA-15 per the Removal Action Work Plan and the site Storm Water Pollution Prevention Plan. Erosion control devices included installation of polyethylene fencing supported by stakes, and hay bales. Erosion control devices were visually inspected throughout the project as required by the federal and state storm water requirements for storm water management during a construction project such as this. Repairs were made and documented as necessary based on these frequent inspections.

Mobilization of excavation and other equipment was completed by 20 July 2007. Access to and from the site was limited to the existing southwest gated entrance along Patten Pike. This entrance is situated south of LTA-01. An equipment and office staging area was selected in an open field within view of and just north of this entrance, and east of LTA-01, as discussed in the Removal Action Work Plan. The

vehicle/equipment decontamination station was also constructed in this portion of the property. The Patten Pike entrance was selected as the appropriate access/egress point for removal action traffic primarily because of its location along a secondary road with lower vehicle traffic than other available access points. Entrance to the site was therefore controlled from the southwest gated entrance and secured by lock on nights and weekends. Signage was posted at this entrance identifying the site, project, and access requirements.

A temporary excavation soil stockpile area was constructed in the area to the southeast of and contiguous to LTA-15 and LTA-16, to accommodate excavated soils if necessary during the removal process. The temporary stockpile facility for LTA-15/-16 soils was constructed of 9-mil polyethylene sheeting with perimeter constructed berms. Rainwater collection equipment consisted of sump pumps and a portable storage tank for water storage. Excavated soils from LTA-01 were to be stockpiled within the confines of LTA-01, therefore, a separate temporary stockpile facility was not deemed necessary at this location. Stockpiled soils within LTA-01 were covered and bermed with straw bales to assure that contaminated soil would not contaminate stormwater runoff into the adjacent streams OD-1 and OD-2.

A rainwater collection sump was installed within the LTA-16 removal area as described in the RmAWP and the Storm Water Pollution Prevention Plan for the CERCLA removal action. LTA-16 consists of a shallow depression which forms a hydraulically isolated wetland. Under times of even moderate precipitation, the area in which the NTCRA was to occur may contain water. Prior to mobilization, the LTA-16 removal area was free of standing water due to an unusually dry summer. In order to control any accumulation of standing water from rainfall events such that the NTCRA could proceed, a shallow temporary sump structure was installed in the eastern corner of the LTA. A sump pump with discharge hose was staged next to the sump for use in removal of accumulated water if necessary. Consistent with both the Removal Action Work Plan and the Storm Water Pollution Prevention Plan, a discharge area was located approximately 150 feet east of the LTA, to allow periodic discharge of pumped water to the ground surface as necessary. The water was filtered through a sock filter and the discharge area was positioned away from any other surface water body and surrounded by straw bales. The sock filter on the hose was monitored and changed out as necessary. Used filters were disposed with other Investigation Derived Waste (IDW).

The above pre-removal action activities were completed by 25 July 2007. A project kick-off meeting was conducted on 26 July 2007. The Army's Quality Control oversight representatives from the US Army Corps of Engineers attended this meeting, as did Ohio EPA representative Paul Jayko. The Army's contractor, KEMRON reviewed the NTCRA objectives and work plan, health and safety requirements that would apply throughout the project, site procedures regarding access, and site sign-in. A site walk was then conducted to discuss the specific work areas and anticipated work schedule and scope in each area.

The USACE Quality Assurance oversight personnel had unlimited access to the site 24-hours per day, seven days per week. Mr. Jayko, Ohio EPA conducted both announced and unannounced site visits throughout the project. Ohio EPA was kept abreast of the schedule of site work through Mr. Jayko's visits to the site, as well as periodic telephone calls and emails from the KEMRON Project Manager, Ms. Mary Lou Rochotte. This allowed Mr. Jayko to oversee the majority of sampling and periodic phases of the excavation and restoration, review laboratory analytical reports as they were received, and have real time information regarding site progress.

## **2.2 LTA Excavation Activities**

### **2.2.1 LTA-01 - Excavation Activities**

Initial excavation of soil within LTA-01 began on 30 July 2007 at the south end of the LTA. Excavation soils were stockpiled into a large soil stockpile located at the north end of the LTA. Soil berm areas were left around the perimeter of the LTA along ditches OD-1 and OD-2 until all interior areas were excavated. Excavation activities continued in northward direction to the location of the soil stockpile until no further excavation area was available to access with equipment. Photographs of the soil excavation process were taken throughout the excavation process and are presented within Appendix A. The waste was predominantly roofing type materials, as is seen in the photographs. While limited amounts of non-friable asbestos had been observed on the ground surface during SI activities, no asbestos containing material was encountered in the subsurface during excavation, and only small, limited amounts of the non-friable asbestos was observed on the ground surface.

Slightly over one-half of the LTA-01 excavation was completed by the time the first set of confirmation samples was collected on August 8 and 15, 2007. Soil stockpile sampling was also conducted to determine soil quality for disposal characterization purposes. Review of the laboratory analysis of the soil stockpile from LTA-01 determined that the material was non-hazardous. A copy of the complete analytical report for the waste characterization of the LTA-01 stockpile is provided in Appendix B.

LTA-01 soil and waste transportation and disposal at County Environmental of Wyandot, Carey, Ohio, was initiated on 20 August 2007 and completed on 30 August 2007. Following removal of the soil stockpile and excavation of target soils from the remaining northern half of the LTA, the remaining confirmation samples were collected on 30 August 2007. Soil confirmation samples collected from LTA-01 were submitted to the KEMRON lab in Marietta, OH for TAL metals and TCL SVOC analysis. Additionally, due to the observed non-friable asbestos identified at the surface of LTA-01 prior to excavation, soil confirmation samples were collected and analyzed for the presence of asbestos.

Within LTA-01, surficial soils/waste materials were removed from a depth varying from approximately one (1) to three (3) feet, with the excavation process being driven primarily on visual indications, and with the excavation equipment removing surficial materials to a depth of visually clean or native materials. Upon reaching what appeared to be native or otherwise unimpacted soil, excavation was ceased and confirmatory samples were collected per the Final Removal Action Work Plan. Following removal of the soil stockpile and excavation/removal of remaining surficial materials beneath the stockpile, excavation continued with removal of the perimeter berm materials along both ditch locations. The silt fencing was temporarily removed during excavation of the residual berm, and reinstalled immediately following completion of the berm removal. All LTA-01 waste disposal was completed on 13 September 2007. The LTA-01 site was then prepared for backfilling, grading and seeding.

Laboratory analytical results for the confirmatory samples indicated that COCs were not present above the RmGs. One individual lead result, sample LTA01-CS013A with a detected lead concentration reported at 1,190 mg/Kg, did exceed the RmG of 1,083 mg/Kg. However, the RmAWP describes how the lead results would be averaged over the sampled area. For the entire LTA-01, a total of 19 confirmatory samples evaluated collectively resulted in an average lead concentration of 142.042 mg/Kg, well below the RmG. If evaluated within the subarea in which this individual elevated lead concentration occurs, which includes the area covered by confirmatory samples LTA01-CS-11A through LTA01-CS-19A, the average lead concentration is 202.69 mg/Kg, still well below the RmG. Table 2 provides a summary of the confirmatory soil sample data. Laboratory analytical reports are located in Appendix B. No further excavation was necessary and the open excavation was backfilled with clean soil from the approved off-site backfill source, graded to crown the area and provide appropriate drainage, and seeded

with a mix of rye and red fescue grass seed. As demonstrated by site photographs (Appendix A), the area restoration was successfully completed. Silt fencing was left in place as a precaution, due to the immediate proximity to ditches OD-1 and OD-2. The silt fencing will be removed in the spring of 2008 and disposed off-site.

A total of 9,263.27 tons of soil and waste were excavated from LTA-01 and disposed off-site in 475 truck loads. Using a conversion factor of 1.3 to convert tons to cubic yards (cy), this translates to approximately 12,042 cy. The RmAWP cited the Final EE/CA in estimating that from a potential low end quantity of 3,550 cy up to 11,750 cy of combined soil and waste would be excavated and disposed from LTA-01, based on the RmGs and available environmental data. Field observations during excavation indicated that roofing type materials had apparently been spread over the entire LTA-01 in the past. Therefore, the NTCRA resulted in slightly more waste being excavated and disposed off-site than the upper anticipated limits provided in the EE/CA and RmAWP. All of the waste was disposed at County Environmental of Wyandot, Carey, Ohio.

Following completion of excavation activities, the area was backfilled with clean off-site derived soil to a sufficient grade level for adequate surface drainage and the area was seeded with a mixture of rye and red fescue grass seed. Straw was placed on the seed, and the silt fencing was retained to ensure the adjacent streams would be protected until vegetation was established through spring 2008.

### ***2.2.2 LTA-15 - Excavation Activities***

Immediately prior to excavation but as part of the removal action, LTA-15 surface debris piles were manually examined and non-friable asbestos (e.g., transite) materials were segregated. The non-friable asbestos materials were recovered and bagged/wrapped in polyethylene sheeting and staged on-site within a roll-off container per the Removal Action Work Plan. These materials were later disposed of off-site at the approved disposal facility, County Environmental Landfill of Wyandot. Additional surface debris piles, consisting of scrap metal, vehicle parts, wood and other trash were also removed and disposed of at a waste disposal facility as an initial removal action activity within LTA-15. Tires that were located in LTA-15 surficial debris were manually segregated by the work crew, decontaminated and transported to a local tire facility for recycling. A total of twenty (20) various size used tires were segregated and recycled.

Initial excavation of soil/waste material within LTA-15 began on 14 August 2007. Excavation was initiated at the toe of a slight westward slope at the western edge of LTA-15. As excavation proceeded, various drum carcasses and smaller waste containers were exposed, as is illustrated in site photographs (Appendix A). These 1-gallon to 55-gallon drum containers were in severely eroded and non-intact condition. No labels or other identifying information could be located on any of the containers. The container deposits were spread throughout a large portion of the LTA, with the greatest concentration in the middle of the NTCRA work area. No free liquid wastes were encountered. Hardened apparent paint waste and roofing type materials were observed adjacent to and within some drum carcasses and smaller containers. Based on the presence of the containers, the crew extracted the containers using the trackhoe bucket and placed them in lined, roll-off boxes staged immediately adjacent to LTA-15. These materials were segregated into the roll-off boxes as "suspect material", per the Removal Action Work Plan. Once the majority of observable containers were removed and placed in the roll-off boxes, surrounding soils were excavated and placed on the constructed soil stockpile located east of and contiguous to the LTA. Excavation activities continued in northward direction across the LTA and generally from the west side to the east until completed. Photographs of the soil excavation process were taken throughout the excavation process and representative photographs are presented within Appendix A. Ohio EPA was present to observe excavation activities on multiple days.

In addition to drum carcasses and smaller containers and apparent paint and roofing wastes, the north-central portion of the LTA had a noticeable deposit of sand. Based on historic information, field observations of the sand appearance and laboratory analyses that indicated high lead levels, the encountered material in this area may have been sandblasting waste. Many other types of waste and debris were observed during excavation, including but not limited to cobble to boulder sized concrete pieces, wire, nails and similar metallic objects, pieces of wood, glass beverage bottles and various broken glass, small cans (sized similar to food containers), and clothing items. The largest concrete pieces encountered appeared to have been brought to the LTA-15 area as a result of an apparent building demolition. Per the Removal Action Work Plan, excavation focused on removal of COC-source materials in the removal action subsurface excavation. While non-COC-source materials were removed as feasible during excavation, larger blocks of concrete, which are not a contaminant source for this CERCLA action, were moved aside. These large concrete pieces were emplaced in the excavation after excavation was verified as complete via receipt of confirmatory sample analyses. The large concrete blocks subsequently were covered during placement of clean backfill.

Of specific note, all asbestos containing materials were encountered at the ground surface in various discrete piles and locations. No asbestos containing materials were encountered in the subsurface excavation area.

Within LTA-15, surficial soils/waste materials were removed from a depth varying from approximately one (1) to five (5) feet, with the excavation process being driven primarily on visual indications, and with the excavation equipment removing waste materials to a depth of visually clean or native materials. In general, deeper excavation occurred along the central portion of the LTA which represented a greater fill material thickness (concentrated disposal zone).

Excavation proceeded in phases, based on visual observations and field evidence. The soils segregated to the constructed soil stockpile area were considered suspect with regard to potential hazardous waste characterization, based on their immediate proximity to the waste containers that had been encountered. An additional smaller soil stockpile of approximately 200 cy was created within the delineated LTA-15, based on its visually identifiable character. Waste characterization was completed per the ARARs for each of these separated areas, including the rolloff boxes, the soil placed on the constructed stockpile area and the soil stockpile placed within the LTA-15 prior to completion of excavation in this NTCRA work area.

Laboratory analysis of the soil stockpile placed within the LTA-15 footprint, and for the three roll-off boxes demonstrated that these materials were not hazardous. These waste materials were subsequently transported and disposed at County Environmental of Wyandot. The soil placed on the constructed soil stockpile area, approximately 400 cy in size, was determined to contain elevated concentrations of lead, such that the material was characterized as Resource Conservation and Recovery Act (RCRA) D008 hazardous waste. A discussion of the subsequent notifications, management, treatment and disposal of the D008 waste is presented in Section 5.0 of this report.

Soil excavation within LTA-15 was suspended by 20 August 2007 based on visual indications and confirmatory samples were collected on 30 August 2007. The soil samples were submitted for analysis of TAL metals, TCL VOCs and TCL SVOCs. RmGs for arsenic and benzo(a)pyrene were achieved in all samples. Numerous samples had elevated lead concentrations such that the RmG was exceeded. All of the 30 August 2007 sample locations also were sampled for laboratory analysis for asbestos fibers in soil. No asbestos fibers were identified, indicating that no asbestos fibers remain at the site.

Using the 30 August analytical results to guide field work, excavation proceeded. The area in which the remaining elevated lead concentrations were observed was delineated in the field and additional

excavation of at least six (6) inches occurred throughout this entire sub-area of LTA-15. Excavation at depth had not proceeded eastward toward the dirt roadway between LTA-15 and LTA-16 in the proximity of KEMRON 2005 test pits KTP-03 and KTP-09 (see Figure 4) during the initial excavation phase. This area was excavated last in the event that the roadway itself might require excavation; only the top approximately 1.5-2 feet had been removed in this area during the first phase of excavation. The secondary excavation in response to the 30 August confirmatory sample results included excavation from south of the location of sample LTA-15-CS-01A northward to encompass the location of the 2005 test pit KTP-03A location (see Figure 4). In the area from 2005 test pit location KTP-04A north to KTP-03A, the soil was excavated to a depth of approximately four (4) feet below the initial excavation depth. Therefore, additional excavation was conducted over the majority of the work area to a depth of approximately 6 inches at the furthest southern and northern ends of the work area, progressively becoming deeper toward the center to a total depth of approximately 5 feet in the vicinity approximately fifteen feet south of 2005 test pit location KTP-03 and northward to approximately ten (10) feet beyond 2005 test pit location KTP-09.

Photos in Appendix A illustrate the progression of excavation at LTA-15. Excavation was terminated once more, based on a field observation that native soil appeared to have been encountered in the entire excavation area. Confirmatory sampling was again conducted on 10 September 2007. All confirmatory samples were submitted for analysis of TAL metals. Since VOC and SVOC results had been consistent with historic data and no elevated levels had been encountered in previous samples, which were within impacted soil based on lead concentrations detected, only one northern, one central and one southern soil sample was submitted for TCL VOC and SVOC analyses. Based on the absence of any ACM in the subsurface and prior confirmatory samples indicating the absence of asbestos fibers in the subsurface, no further soil samples were submitted for asbestos fiber analysis.

Laboratory analytical results for the 10 September 2007 confirmatory samples indicated that COCs were not present above the RmG. No further excavation was necessary and the open excavation was backfilled with clean soil from the offsite backfill source location. The backfill was graded to develop a gently sloping surface and the area was seeded with a mixture of rye and red fescue grasses and straw was spread over the seed.

A total of 1,449.33 tons of soil and waste were excavated from LTA-15 and disposed off-site in 70 truckloads and four roll-off boxes. Using a conversion factor of 1.3 to convert tons to cy, this translates to approximately 1,884 cy. The RmAWP estimated that approximately 520 cy to 550 cy of soil and waste would need to be excavated to remove all soils above the indicated RmGs for arsenic, lead and benzo(a)pyrene. The significant number of drums and containers encountered resulted in a higher volume of waste excavation and disposal than originally was anticipated. All the excavated wastes were disposed at County Environmental of Wyandot. This volume includes one roll-off box full of ACM (transite materials), and three roll-off boxes of waste containers. Each of the roll-off boxes were 20 cy capacity. The total tonnage and cy reported above also includes approximately 400 cy of D008 hazardous waste was generated, treated to render the waste acceptable for disposal in conformance to the federal Land Disposal Restrictions, and subsequently disposed. Please see Section 5.0 for additional details regarding the D008 waste.

### **2.2.3 LTA-16 - Excavation Activities**

Surface scraping was conducted in the central area of LTA-16 to gather various concrete, wood and metallic debris (one drum carcass and various small metal debris). The material was stockpiled in the north-central portion of the LTA and initial excavation of soil/waste material within LTA-16 began on 20 August 2007. Excavation soils were stockpiled with the debris collected prior to excavation, within the LTA. Excavation activities were initiated in the vicinity of 2005 test pit location KTP-3, and proceeded

inward and westward within the LTA toward 2005 test pit location KTP-01. Photographs of the soil excavation process were taken throughout the excavation process and are presented within Appendix A.

Soil encountered in LTA-16 was observed to contain a layer of metallic debris with high concentration of metal (nails, nuts, bolts) approximately 6 to 10 inches below the surface in the vicinity east-northeast of 2005 test pit location KTP-01. Using a trackhoe, this layer was removed with surrounding soils. IN conformance to the wetland mitigation plan submitted in conjunction with the Ohio EPA isolated wetland permitting process, demolition debris located on the northern edge of LTA-16 was partially removed to expand the wetland area. Within LTA-16, soils/waste materials were removed from a depth varying from approximately one (1) to two (2) feet, with the excavation process being driven primarily on visual indications of metallic debris, and with the excavation equipment removing waste materials to a depth of visually clean or native materials.

Soil excavation within LTA-16 ended 07 September 2007. A total of 345.97 tons of soil and waste were excavated from LTA-16 and disposed off-site in 17 truckloads. Applying the 1.3 conversion factor, this equates to approximately 450 cy, less than was anticipated and discussed in the RmAWP. The RmAWP estimated that approximately 650 cy to 1,400 cy would need to be excavated to remove soils above the indicated RmGs. Soil confirmation samples were collected from LTA-16 on 30 August 2007. Collection of two additional samples within LTA-16 were delayed due to heavy rains that caused flooding of the LTA. Using the sump configuration described in the RmAWP and Storm Water Pollution Prevention Plan, the LTA was drained and the final confirmation sample was collected on 10 September 2007. Confirmation samples were submitted to the KEMRON analytical laboratory in Marietta, OH for TAL metals and TCL SVOC analysis. No asbestos detection samples were collected from this LTA as no ACM had been identified at this location.

Laboratory analytical results for the confirmatory samples determined that COCs were not present above the RmGs. No further excavation was necessary and the open excavation was backfilled with clean soil. After completing the excavation but prior to placement of backfill, the area was surveyed and marked to identify the pre-excavation grade of the wetland. Using the survey stakes to guide the backfill, topsoil from the approved clean off-site location was transported, placed and graded within LTA-16 to the approximately pre-excavation grade. The extent of the excavated area, including the areas excavated for purposes of wetland expansion per the wetland mitigation plan, were surveyed following completion of the excavation.

Figure 5 illustrates the disturbed area within the wetland W3. Within this area, surface debris not subject to CERCLA action was removed to enhance the wetlands in addition to removal of contaminated soil and COC source debris. The actual removal action area required to achieve RmGs encompassed approximately 0.28 acre of the total approximately 0.42 acre disturbed. The larger disturbed area included removal of demolition debris, and other debris (eg. discarded toilets, glass debris) to enhance the overall health of the wetland in conformance with the wetland mitigation plan.

### **3.0 SAMPLING ACTIVITIES**

#### **3.1 Confirmation Samples**

Confirmation samples were collected in accordance with the RmAWP and the project QAPP (KEMRON, 2007). The Confirmation Sampling Plan, included as an addendum to the RmAWP, specified requirements for establishment of a sampling grid within each LTA, with a specified minimum number of confirmation samples to be collected. Additional requirements included collection of deeper soil samples from a percentage of sampling points to allow for characterization of soil quality with depth, and quality assurance/quality control (QA/QC) samples for QA/QC testing purposes.

Upon completion of primary excavation activities within each LTA, confirmation soil samples were collected from the bottom of the excavation area at targeted sample locations based on an implemented collection grid. The confirmation samples were collected as grab samples utilizing a 100-square foot grid spacing for each LTA. The Confirmation Sampling Plan provided a methodology for calculating a representative number of confirmation samples from each LTA. Utilizing the selected basis of 20% coverage in each area with a 100 ft<sup>2</sup> grid, the calculated number of representative confirmation sample locations was 18 sampling locations in LTA-01, seven (7) sampling locations in LTA-15, and four (4) sampling locations in LTA-16. Grid sampling points were selected randomly in the field following grid construction.

Confirmatory soil samples were collected and analyzed in accordance with the Confirmation Sampling Plan of the RmAWP, the project SAP, and the project QAPP. Confirmation samples were collected from the floor of the excavation area (i.e., from the base of the freshly excavated area) to demonstrate removal of COCs in each LTA such that RmGs were achieved. Soil asbestos samples were collected in this same manner in LTA-01 and LTA-15. Confirmation samples were collected using manual collection devices such as a stainless steel hand auger or collection trowel depending upon location. Surficial samples were obtained from a depth of 0 to 6 inches from the excavation surface. Deeper samples, where collected, were obtained from the next depth interval of 6 to 12 inches. Representative soil cores were placed into a stainless steel bowl for characterization and photographing, and then containerized into the appropriate laboratory jar for transport to the lab. Sample locations were geo-located with a handheld GPS for mapping purposes.

##### **3.1.1 LTA-01**

A total of 19 confirmation sample locations were collected from the LTA-01 excavated area, one (1) sample more than the planned number of samples. This additional sample was collected at request of Mr. Donald Casey, USACE, US Army construction oversight designee for the 2007 NTCRA in order to provide additional sampling coverage in a south-central portion of the LTA. Figure 3 illustrates the locations of the confirmation samples.

Confirmation samples were submitted for analysis of TAL metals and TCL SVOC to assess soil cleanup against RmGs for arsenic, lead and benzo(a)pyrene. Asbestos confirmation sampling was conducted to evaluate potential presence of asbestos fibers, based on Ohio EPA's comments regarding the NTCRA and based on the observed presence of intermittent asbestos (transite) material chips at the ground surface in several locations within LTA-01.

Respective to the 19 confirmation sample locations, 19 surficial soil samples, three (3) deeper depth samples, one (1) MS/MSD sample, two (2) field duplicate samples, and two (2) equipment blank samples were collected. Analytical results for LTA-01 confirmation samples are discussed in Section 4.0.

### **3.1.2 LTA-15**

A total of five (5) confirmation sample locations were initially scoped and collected from the LTA-15 excavated area on 30 August 2007. Figure 4 illustrates the locations of the confirmation samples. Confirmation samples were submitted for analysis of TAL metals, TCL VOC and SVOC in order to assess soil cleanup against available RmGs for arsenic, lead and benzo(a)pyrene. Confirmation sampling for TCL VOC (not required in other LTAs) was completed using Terracore® sampling methods (field preservation method). Asbestos confirmation sampling was conducted to evaluate potential presence of asbestos based on the documented asbestos-containing materials, identified previously at the ground surface in LTA-15.

Sample results from the 30 August 2007 sampling event indicated an exceedence of the lead RmG at multiple sampling locations, requiring additional excavation and repeat of the confirmation sampling. A second confirmation sampling event was conducted on 10 September 2007 following completion of additional excavation. During this sampling event, confirmation samples were collected from seven (7) locations (near the original five locations plus an additional two locations as the excavation area was expanded slightly). One (1) deeper depth sample and one (1) MS/MSD sample was collected during the initial sampling event. Two (2) field duplicate samples and two (2) equipment blank samples were also collected (one sample each per event). Analytical results for LTA-01 confirmation samples are discussed in Section 4.0. Laboratory analytical reports for the LTA-01 metals and SVOC analysis of confirmation samples are available in Appendix B.

### **3.1.3 LTA-16**

A total of four (4) confirmation sample locations were initially scoped and collected from the LTA-16 excavated area on August 30, 2007. An additional two (2) confirmation samples were collected on September 10, 2007 after the wetland area was drained and had dried sufficiently to allow collection of representative soil samples. Figure 4 illustrates the locations of the confirmation samples collected from LTA-16.

Confirmation samples were submitted for analysis of TAL metals and TCL SVOC from this LTA in order to assess soil cleanup against available RmGs for arsenic, lead and benzo(a)pyrene.

Confirmation sampling within LTA-16 included six (6) surficial soil samples, one (1) deeper depth samples, one (1) MS/MSD sample, one (1) field duplicate samples, and one (1) equipment blank sample. Analytical results for LTA-16 confirmation samples are discussed in Section 4.0.

## **3.2 Confirmation Sample Handling and Management**

All soil samples and related QA/QC samples, such as equipment blanks, were placed in clean, laboratory prepared sample jars and were placed in coolers, in compliance with the project SAP and QAPP. Upon completion of sampling activities, the samples were packed on ice in an insulated cooler and transported directly to, or shipped via express overnight delivery, under proper chain-of-custody protocol to the KEMRON Laboratory in Marietta, Ohio. Asbestos characterization samples from LTA-01 and -15 were shipped via express overnight delivery under proper chain-of-custody protocol to the EMSL Laboratory in New Jersey, per the project QAPP (KEMRON, 2007).

## **3.3 Site Restoration Activities**

A potential backfill source was identified near the Marion LTA, located north of Harding Highway between US Route 23 and Pole Lane Road. KEMRON interviewed a site representative to gather historic property use information to screen the location. Based on information provided indicating that the site has historically been used as farm pasture and no commercial or industrial activities had been conducted,

KEMRON collected soil samples and conducted laboratory analysis for TAL metals, TCL VOCs, TCL SVOCs, pesticides and herbicides. KEMRON also reviewed the site location with Ohio EPA representative Paul Jayko, and Don Casey, USACE, who verified that the site was not adjacent to or included in any of the Formerly Used Defense Site parcel locations located near Marion, OH. Laboratory analytical results were reviewed with Ohio EPA during a site visit. The analyses illustrated that the soil contained no contaminants at concentrations that could pose a potential risk to any future potential population, based on comparison to EPA Region 9 PRGs and other available regulatory standards, such as the Ohio Voluntary Action Program generic numeric standards.

All backfill soil emplaced within the NTCRA work areas was from this single location. Soils were brought onsite from 20 September through 25 September 2007. A total of 505 loads of topsoil and clay were emplaced on LTA-01, LTA-15 and LTA-16, with each load containing 11 cy of soil, for a total of 5,555 cy of backfill emplaced in the NTCRA work areas.

As described previously, LTA-16 was backfilled to the approximate pre-excavation grade. LTA-01 and LTA-15 were backfilled and graded to establish appropriate drainage gradient and to make each of these two areas suitable for potential future Reservist training activities.

Restoration backfilling was conducted in all three NTCRA work areas from 20-25 September 2007. LTA-01 was backfilled to a sufficient depth to provide an appropriately graded surface to allow for appropriate surface drainage and future Reservist training use. As with LTA-01, LTA-15 was backfilled to a sufficient depth to provide an appropriately graded surface to allow for appropriate surface drainage and future Reservist training use.

LTA-01 and LTA-15 were seeded with a mixture of rye and red fescue grass seed, and seed was covered with straw. Similarly, the constructed soil stockpile area adjacent to LTA-15 was removed and the liner was disposed with the treated soil. Grass seed had established sufficiently at LTA-15 that silt fencing in the area was removed. Silt fencing that had been placed adjacent to the constructed soil stockpile area, as a precautionary measure, was also removed and disposed with the treated soil. The soil stockpile area was graded, covered with clean backfill soil, seeded with a mixture of rye and red fescue grass seed and covered with straw.

LTA-16 was surveyed and pre-excavation elevations marked to guide backfilling. LTA-16 was backfilled to the pre-excavated elevation. Wetland species seed was spread over the entire disturbed area and straw was placed over the seed. The entire disturbed area was seeded with a mixture of fox sedge (*Carex vulpinoidea*), bottlebrush grass (*Hystrix patula*), and switchgrass (*Panicum virgatum*), wetland tolerant species appropriate for the region.

Wetland tolerant species of trees and shrubs also were planted adjacent to and within the wetland, in conformance with the planting plan described in the Ohio EPA-approved wetland mitigation plan for wetland W3. The trees were ordered and received as bare root stock. One hundred (100) each of bare root stock Silky dogwood (*Cornus amomum*) and Red-osier dogwood (*Cornus sericea*) shrub seedlings were planted on 15 November 2007 within the wetland, up to the then-standing water line. Thus, a total of 200 shrubs were planted within the wetland, at a spacing of approximately 3'-6' per Ohio Department of Natural Resources (ODNR) planting recommendations. Thirty (30) bare root stock trees were planted on the same day, at a spacing of approximately 8-10' per ODNR recommendations. Ten one-year Black walnut (*Juglans nigra*) seedlings were planted on the higher ground of the perimeter. Ten two-year seedlings of Red maple (*Acer rubrum*) were planted on the middle ground of the perimeter area. These two types of trees were not planted within the area anticipated to be most often submerged in the wetland, due to their more ideal growing conditions calling for infrequent submersion in water. Ten one-year

seedlings of Black willow (*Salix negra*) were planted in the lowest areas of the wetland perimeter, within the area anticipated to more often be submerged under water within the isolated wetland. Figure 5 illustrates the area encompassed by the planting effort, including seeding and planting of shrubs and trees. Consistent with the RmAWP and the wetland mitigation plan, the wetland now will be allowed to self-restore.

Final wetland restoration encompassed approximately 0.54 acre, as illustrated in Figure 5. The final restored area is thus in conformance with the Ohio EPA 23 May 2007 permit standard requiring that 0.537 acre of wetland restoration be conducted on-site.

Ohio EPA's wetland biologist, Mr. Jeff Boyles, and Mr. Paul Jayko of Ohio EPA, visited the LTA-16 wetland site with the Army's contractor, KEMRON, on 16 October 2007. As discussed in the site visit, KEMRON will conduct site visits to the wetland in the spring and summer of 2008 to verify that vegetation has been established. Photographs from the spring and summer 2008 site visits will be forwarded to the Ohio EPA to provide confirmation of the self-restoration of the wetland.

Several photos of the restoration process are presented within Appendix A. As of KEMRON's last site visit on 15 November 2007, grass was well established in LTA-01 and LTA-15, wetland species seed had sprouted in LTA-16 in response to recent rains and seed in the location of the former constructed soil stockpile area had begun to sprout.

### **3.4 Groundwater Sampling Event**

Following completion of all on-site excavation and restoration activities, a groundwater sampling event was completed on 16 October 2007. The groundwater sampling event involved the collection of representative groundwater samples from existing LTA-area monitoring wells, originally installed in 2005. Details of the wells are presented in the Final Supplemental SI Report (KEMRON, 2006) which is available in the Information Repository and the Administrative Record of this CERCLA project. Five (5) monitoring wells were sampled in LTA-01 (KMW-01 and -02), LTA-15 (KMW-04 and -05), and LTA-16 (KMW-06) using low-flow sampling methods per the project SAP.

Similar to past sampling attempts, KMW-06, located at LTA-16, purged dry. KEMRON anticipated that this may occur, and collected a pre-purge sample from the standing water in the well. While this sample is not truly representative and does not conform to standard sampling protocol, it was collected to provide a data point that otherwise would not be available due to extremely slow well recovery rates in KMW-06.

Both filtered and unfiltered samples were collected. The unfiltered samples were observed in the field to be highly turbid, which is consistent with past field observations regarding this shallow aquifer. Ohio EPA and USACE were present to oversee groundwater sampling.

The groundwater samples were submitted to the KEMRON Laboratory in Marietta, Ohio for TAL total and dissolved metals analyses. A summary of the chemical laboratory analytical results of the groundwater samples is provided in Table 5. Laboratory analytical reports for the groundwater analyses are presented in Appendix B.

Per the RmAWP, dissolved metals were evaluated against Safe Drinking Water Act Maximum Contaminant Levels (MCLs). Also in conformance to the RmAWP, both unfiltered and filtered samples were collected. The samples were analyzed for metals, which were the only contaminants that were potentially elevated in past samples. The filtered metals sample analytical results were compared to the filtered 2006 site groundwater results for purposes of evaluation of conformance to Safe Drinking Water Act MCLs. According to the RmAWP, if confirmatory post-removal groundwater sampling results did not exceed MCLs, the site monitoring wells would be closed in conformance with the Monitoring Well Closure and Abandonment Plan included as RmAWP Appendix A.

No MCLs are exceeded in the post-removal action samples. The detected concentrations of dissolved metals are very similar to pre-removal action concentrations, with many detected concentrations lower in the 2007 analytical results than in the 2006 results. In each sample, the COCs lead and arsenic are lower than the 2006 result. The Ohio EPA had requested that post-removal action groundwater sampling should be conducted to verify that COCs were not mobilized during the field activities. Per the RmAWP, both dissolved and total metals were sampled. Based on the highly turbid nature of the aquifer, dissolved metals were used for comparison to MCLs. As Table 5 demonstrates, no MCL exceedances are observed when evaluating the dissolved metals concentrations. Further, analytical results indicate that the detected dissolved metals concentrations are similar to the detected levels prior to conduct of the NTCRA.

The post-removal action groundwater data indicate that no adverse impact to the monitored aquifer occurred as a result of the removal action. The Supplemental SI Report concluded that groundwater quality has not been impacted by historic site activities. These 2007 data are consistent with the 2006 groundwater data. Based on the results of the post-removal groundwater monitoring event, no further groundwater monitoring is necessary. Consistent with the RmAWP, site monitoring wells will be closed in conformance with the Monitoring Well Closure and Abandonment Plan included as Appendix A to the RmAWP.

## **4.0 ANALYTICAL RESULTS**

Laboratory analyses of the confirmation soil samples and monitoring well groundwater samples were conducted using EPA analytical methods. Tables 1 through 4 summarize the laboratory analytical results of the confirmation soil samples used to demonstrate that the removal action was completed to remove COCs such that RmGs are not exceeded for each LTA. Table 5 summarizes the groundwater sample results. The above tables, in addition to the respective confirmation samples themselves, also summarize results QA/QC samples, including duplicate samples, matrix spikes and matrix spike duplicate (MS/MSD) samples, and equipment rinsate blanks collected during decontamination of sampling equipment.

In addition to the summary data presented in the above tables, a full copy of the Level 4 data packages for each sampling event is provided on CD-ROM in Appendix B. Copies of the LTA-01 and LTA-15 soil asbestos analytical results also are provided in Appendix B.

### **4.1 Confirmation Sample Results**

#### **4.1.1 LTA-01**

Confirmation sample results for soil samples collected and analyzed from LTA-01 are summarized in Table 2 for COC analytes, which include TAL metals and TCL SVOCs. Laboratory analytical results indicated no exceedence of the RmG for arsenic or benzo(a)pyrene, indicating successful removal of targeted materials. One individual lead result, sample LTA01-CS013A with a detected lead concentration reported at 1,190 mg/Kg, did exceed the RmG of 1,083 mg/Kg. However, the RmAWP describes how the lead results would be averaged over the sampled area. For the entire LTA-01, a total of 19 confirmatory samples evaluated collectively results in an average lead concentration of 142.042 mg/Kg, well below the RmG. If evaluated with in the subarea in which this lead exceedance occurs, which includes the area covered by confirmatory samples LTA01-CS-11A through LTA01-CS-19A, the average lead concentration is 202.69 mg/Kg, still well below the RmG. No asbestos detections were noted in any of the confirmation samples.

#### **4.1.2 LTA-15**

Confirmation sample results for soil samples collected and analyzed from LTA-15 are summarized in Table 3 for COC analytes, which included TAL metals, and TCL VOCs and SVOCs. Laboratory analytical results for the initial confirmation sampling event indicated an exceedence of the RmG for lead in multiple shallow soil samples. The RmG for arsenic and benzo(a)pyrene was not exceeded in any sample. No exceedences were noted in the deeper "B" sample. The exceedence of the lead RmG necessitated further excavation within this LTA, followed by collection of additional soil confirmatory samples. The second confirmation sampling event indicated no exceedence of the RmGs, indicating successful removal of targeted materials. No asbestos detections were noted in any of the confirmation samples.

#### **4.1.3 LTA-16**

Confirmation sample results for soil samples collected and analyzed from LTA-16 are summarized in Table 4 for COC analytes which included TAL metals and TCL SVOCs. Laboratory analytical results indicated no exceedence of the RmG for arsenic, lead, or benzo(a)pyrene, indicating successful removal of targeted materials.

**4.1.4 Human Health Risk Evaluation of Soil Confirmatory Data**

The EE/CA for this NTCRA presented the streamlined human health risk evaluation related to the site. As the Army has documented in the EE/CA, Action Memorandum and RmAWP, a human health risk-based goal that achieves the CERCLA standard of  $1 \times 10^{-4}$  (also denoted as 1E-4) was used in establishing the RmGs for this NTCRA. In its comments on these documents, Ohio EPA has noted that its Technical Compendium establishes a goal of  $1 \times 10^{-5}$  as the acceptable end point for environmental cleanup activities. In its 26 June 2007 letter to the Army regarding the Draft Final RmAWP comment 1.b, Ohio EPA noted that since the designated future use of the Marion LTA is Reservist training, the Army should address achievement of a  $1 \times 10^{-5}$  risk-based cleanup of the site. The Army has evaluated the data from the NTCRA and concludes that the Ohio EPA Technical Compendium goal of  $1 \times 10^{-5}$  is achieved by the RmGs under the Reservist exposure scenario.

The Reservist exposure scenario as defined in the Marion LTA Final HHRA Work Plan (KEMRON, 2007) includes an exposure duration of six years at a frequency of six days per year, eight hours a day. Implementing the same calculation methodologies of the Final HHRA Work Plan, the following RmGs would be derived for the protection of a Reservist exposure in the NTCRA:

<b><u>Reservist Exposure</u></b>		
<b>Reservist 10-5 RmGs</b>		
<b>Contaminant of Concern</b>	<b>RmG (mg/kg)</b>	<b>Risk*</b>
Arsenic	1656	9.0E-07
Benzo(a)pyrene	340	1.2E-06
Arsenic and Benzo(a)pyrene Cumulative		2.1E-06
Lead	14233	6.7**

\* Risk estimates are less than  $10^{-5}$  goal because they include reductions in exposure (fraction ingested is 50% and exposure rate is 8 hrs) that are not typically included in the RmG calculation.

\*\* Lead risk goal is a blood lead level not to exceed 10 ug/dl. These results represent the 95% blood lead levels.

All of the Reservist  $1 \times 10^{-5}$  RmGs are well above the RmGs developed and applied by the Army based on the industrial/commercial  $1 \times 10^{-4}$  exposure scenario for this NTCRA. Soil confirmatory data within the three NTCRA work areas, did not approach or exceed the Reservist  $1 \times 10^{-5}$  RmGs. Therefore, the Army has demonstrated that the three NTCRA work areas on the property meet the Ohio EPA human health risk based goals protective of the potential exposures based on the future use of the site as a Reservist training facility.

In addition, it should be noted that a minimum of six (6) inches of cover soil has been placed in all removal action areas. Within LTA-01, clean backfill was placed in thicknesses of 6 inches up to over eighteen (18) inches. Within LTA-16, backfill was placed to return the area to the approximate pre-excavation elevation, consistent with the wetland mitigation goals. Therefore, backfill was placed in the LTA-16 removal action area in thicknesses of up to two (2) feet. Within LTA-15, backfill thicknesses were up to four (4) feet or more. As a result, consistent with EPA risk exposure guidance, the soil exposure pathway for any receptor within each removal action area is now considered incomplete.

Further evaluation of the achievement of Ohio EPA risk goals was conducted to assess the potential human health risk posed by the removal action work areas based upon potential future industrial/commercial use. While the Army has clearly established the future use of the parcel as a Reservist training facility, Ohio EPA's 18 June 2007 comments on the Draft Final Removal Action Work Plan indicated that evaluation to the industrial/commercial standard would also be acceptable.

Table 6 presents a summary of risk estimates using the 95% UCL of the mean for each compound driving risk in each work area (LTA-01, LTA-15, and LTA-16). An industrial/commercial worker and a Reservist exposure were evaluated using the exposure assumptions defined in the Marion LTA Final HHRA Work Plan (KEMRON, 2007). No risk estimate exceeded the Ohio EPA Technical Compendium goal of  $1 \times 10^{-5}$ , a Hazard Index of 1 or a blood lead level of 10  $\mu\text{g}/\text{dl}$ . As a result, the Army has demonstrated that the three NTCRA work areas meet the Ohio EPA human health risk based goals for both future use as a Reservist training facility and potential future industrial/commercial use.

#### **4.2 Quality Control Sample Results**

Quality control samples were collected at the time of confirmation sampling. The sampling protocol and the frequency of these samples are outlined in the project QAPP and SAP. The types of QA/QC samples include duplicates, matrix spikes and matrix spike duplicates (MS/MSDs), and equipment rinsate blanks collected during decontamination of sampling equipment. Sampling activities and results are briefly discussed below.

##### **Duplicates**

Duplicate samples were collected at a rate of one sample per every 10 samples collected per independent sampling event.

Duplicates were collected from the sample aliquot as the confirmation reference sample and analyzed for the same COCs with the same laboratory method. Duplicates were sent "blind" to the laboratory for analysis as a separate sample. The samples were given a numerically assigned sample ID with the suffix - FD (Field Duplicate). The results of the duplicates are presented in detected levels for comparison with the reference sample.

The ratios of duplicate samples to the number of confirmation samples for each task area are:

- LTA-01 – 2 duplicate samples for 19 confirmation samples
- LTA-15 – 2 duplicate samples for 12 confirmation samples
- LTA-16 – 1 duplicate sample for 6 confirmation samples

##### **Matrix Spikes and Matrix Spike Duplicates (MS/MSDs)**

MS/MSD samples were collected at a rate of one set per every 20 samples collected per sampling event as outlined in the QAPP. MS/MSDs are collected from the same aliquot as the reference sample and analyzed each batch of samples of a similar matrix. The samples were numerically assigned a sample ID with the suffix (MS) or (MSD) added to the field sample identifier. These samples were spiked with the same analytes as the laboratory control sample (LCS) and normally at the same concentration. The matrix spike is used to assess performance of the method in a sample's matrix. The percent recoveries are used to assess bias or other matrix effects. MS/MSD results were acceptable for the removal action confirmation sample analytical data (Appendix B).

### **Equipment Rinsate Blanks**

One equipment blank was collected for every 10 confirmation samples per sampling event at the four remedial action sites as specified in the project QAPP. Equipment blanks test the cleanliness of reused sampling equipment and the effectiveness of field decontamination procedures.

Equipment blanks were collected after proper field decontamination, using laboratory-grade deionized water rinsed from bowls and sampling equipment used to collect soil samples. The equipment blanks were numerically assigned a sample ID with the suffix -EB (Equipment Blank).

The equipment blanks were analyzed for the same parameters as the confirmation soil samples by area. Laboratory results for equipment blank samples indicated no significant detections above the laboratory detection limit in equipment blanks.

### **4.3 Groundwater Sample Results**

Results for the groundwater sampling event were compared to dissolved metal concentration results from the previous sampling event conducted in 2006. As presented in Section 3.4, the groundwater sample results indicate no impact to groundwater. Consistent with the RmAWP, the groundwater monitoring wells at the site will be permanently closed.

### **4.4 Air Monitoring**

Real-time air monitoring data was collected from each LTA during excavation activities using a variety of equipment, including, a photoionization detector (PID), dust monitors, Lower Explosive Limit (LEL) meter, and/or Data-Ram meter. Air monitoring was primarily conducted for the purpose of compliance with OSHA standards to assure protection of workers at the site. Data that demonstrate that workers in the NTCRA areas are not exposed above applicable OSHA limits also provide assurance that nearby residents will not be inappropriately exposed. Workers used personal air monitoring devices in the work zones during excavation of contaminated soil and related waste to verify that exposure to lead and arsenic did not exceed the OSHA standards. Within LTA-01 and LTA-15, where non-friable asbestos had been identified on the ground surface, air monitoring for worker asbestos exposure also was conducted. Laboratory analytical results consistently demonstrated that no exposure approached the applicable OSHA exposure limits. Laboratory analysis of representative worker air monitoring samples are included in Appendix F.

Total dust monitoring was conducted within the work areas and at the perimeter fence during excavation of impacted materials. Per ARARs, fugitive dust must be controlled during excavation and similar activities. Air monitoring was routinely conducted by the project health and safety officer on duty, or his/her trained designee. The air monitoring records indicated that routine use of dust control measure, consisting primarily of application of water spray in the work areas, was effective in maintaining total airborne particulates to a level of no greater than 8 mg/m<sup>3</sup> and such that no visible dust emissions created an air hazard.

Based on the air monitoring of workers for arsenic, lead and asbestos, as well as site/perimeter monitoring of total dust, no hazards were posed to nearby residents and all worker exposure was well below applicable OSHA standards.

## **5.0 WASTE MANAGEMENT AND DISPOSAL**

All solid wastes generated during this NTCRA was disposed at a local landfill, County Environmental of Wyandot, located in Carey, Ohio. Prior to selecting this landfill for disposal, the Army received confirmation from USEPA, Region 5 via email on 06 July 2007 that this landfill is acceptable to receive waste regulated by the CERCLA off-site rule (see Appendix C).

### **5.1 Nonhazardous Waste Disposal**

#### ***5.1.1 Solid Waste***

All solid wastes generated during the NTCRA, such as paper and general trash, was placed in designated waste containers in trash bags. The bags were removed from the waste containers daily and placed in a rolloff box that was transported for disposal at County Environmental of Wyandot, Carey, Ohio at the conclusion of the project.

#### ***5.1.2 Investigation Derived Wastes***

Nonhazardous investigation derived wastes generated during NTCRA excavations were managed as described in Section 2.2 of this report, with all excavated soil and debris being transported to County Environmental of Wyandot, Carey, Ohio. A total of 11,058.57 tons of soil/waste were excavated and disposed. Using a conversion factor of 1.3 x tons = cubic yards, this equates to approximately 14,376 cy of waste.

Decontamination water was collected in a dedicated tank at the decontamination pad. As the tank filled, it was pumped into a 20,000 gallon frac tank that was brought on-site to containerize the waters. The frac tank water was sampled and determined to be nonhazardous. As discussed in the project Storm Water Pollution Prevention Plan (SWPPP) for the Marion LTA NTCRA, provisions were made to allow any waters pumped out of LTA-16 to be discharged to the ground surface through a hose that discharged through a sock filter that would remove entrained sediment and debris. The sock filters were changed out as they became clogged, with the pumping stopped during filter change out, and the filters were disposed with the excavated soils from LTA-16. The discharges were directed into open ground away from any wetland, stream or other surface water body. Decontamination water from the decontamination pad were collected in a dedicated tank at the pad. As the tank filled, it was pumped into a 20,000 gallon frac tank used to containerize the decontamination waters. The frac tank water was sampled and determined to be nonhazardous (Appendix B). Consistent with the filtration method approved for LTA-16, the decontamination water was filtered and discharged to the ground surface away from any surface water body as an approved non-storm water discharge. Storm waters collected from within the constructed soil stockpile area were reapplied onto the soilpile within the same stockpile area as dust control per the SWPPP.

Purge water from the 16 October 2007 groundwater sampling event was containerized in a 55-gallon drum, labeled as non-hazardous IDW, and stored within the secured fenced site. The drum will be disposed off-site in conjunction with other site activities in the coming months (e.g., wetland inspection or well closures). Please see Section 3.4 for further discussion of the groundwater sampling event.

### **5.2 Hazardous Waste Generation, Treatment and Disposal**

The RmAWP identified plans for dealing with hazardous waste if encountered during the NTCRA. The most likely location anticipated to encounter hazardous waste was anticipated to be LTA-15, based on the site history and historically detected concentrations of lead. The RmAWP estimated that as much as 300 cy of hazardous waste may be encountered. As described previously in Section 2.2 of this report, a soil

stockpile containing approximately 400 Cubic yards of excavated soil from LTA-15 was determined to be D008 characteristic hazardous waste, based on lead content greater than 5.0 mg/L as determined by the Toxicity Characteristic Leaching Procedure (TCLP) analytical results.

The RmAWP had stated that “Any contaminated soil that is classified as a characteristic hazardous waste will be transported off-property to a Resource Conservation and Recovery Act (RCRA) Subtitle C permitted landfill, unless it is stabilized and rendered nonhazardous prior to off-site transport and disposal.” Consistent with the RmAWP, the D008 waste was evaluated, based on the volume and character of the waste, and stabilization using Granulated Triple Super Phosphate (GTSP) was determined to be an appropriate treatment material to apply. The GTSP could be delivered to the site and directly applied to the contaminated soil within the confines of the constructed soil stockpile area, and thoroughly mixed throughout the contaminated soil. The GTSP was applied to the D008 waste soil pile at approximately 9% by weight.

### **5.2.1 D008 Stabilization Summary**

The GTSP was brought on site and application of the GTSP began on 07 September 2007. The material was incorporated into the waste via excavators (trackhoes). The soil pile was sub-divided into halves, and 25.53 tons of GTSP was placed inside the stormwater berm upon delivery. The soil pile was uncovered and a trackhoe was moved to the top of the pile, where it was then used to add buckets of GTSP to the soil in the correct ratio, mixing and moving to the one end of the stockpile as the reagent is mixed. The pile was thoroughly mixed with the reagent to form a stabilized stockpile for sampling. Approximately 25 additional tons of GTSP were delivered to the site on 14 September 2007 and directly applied to the soil pile. The delay in delivery of the second truck load of GTSP was caused by wet weather and resultant poor road conditions on the road leading to the soil pile location. Following thorough mixing of the GTSP into the entire soil pile at the appropriate ratio, the soil pile was covered and the necessary chemical reaction occurred to accomplish stabilization. A reaction time of approximately one week was allowed to occur prior to waste characterization sampling.

### **5.2.2 Land Disposal Restriction and Underlying Hazardous Constituent Summary**

40 CFR 268.49 establishes alternative Land Disposal Restriction (LDR) treatment standards for contaminated soil that exhibits a characteristic of hazardous waste. Prior to land disposal, all constituents subject to treatment under the Land Disposal Restrictions must be treated to achieve 90 percent reduction in constituent concentrations as measured by either TCLP or total constituent concentration (as specified by the regulations). When treatment of any constituent subject to a 90% reduction would result in a concentration less than 10 times the applicable Universal Treatment Standard (UTS), treatment to the UTS is not required.

The 2005 Supplemental Site Investigation LTA-15 analytical results for VOCs, SVOCs and PCBs, as well as TCLP analytical results from the recent soil pile waste characterization sampling, was used to provide a listing of underlying hazardous constituents (UHCs) for the waste soils.

Per 40 CFR 268.49(d), the specified hazardous constituents that are subject to treatment include any constituents listed in 40 CFR 268.48 Table *UTS – Universal Treatment Standards*, that are “reasonably expected to be present in any given volume of contaminated soil” (except certain specified contaminants) that are present at concentrations greater than ten (10) times the UTS.

A full data evaluation was conducted to identify underlying hazardous constituents (UHCs) as required by environmental regulations. The entire set of soil analytical results from LTA-15 as compared to the UTS table of 40 CFR 268.48 for constituents (other than metals) to determine which detected constituents

exceeded a value equal to ten times the UTS measured in total constituent concentrations, per 40 CFR 268.49(d). This evaluation was conducted as part of the determination of UHCs that would be subject to the 90% reduction per 40 CFR 268.49(c)(1)(B). The sampling and analysis in LTA-15 soils included all constituents that would reasonably be expected to be present in soil, thus providing a data set that meets the standard for data evaluation (see 40 CFR 268.49(d)).

The TCLP analysis of the excavated soil pile was used to determine which constituents measured in leachate concentration (as required by the UTS table) were identified as UHCs. Lead was the only TCLP measured constituent identified as a UHC, and thus requiring concentration reduction under the applicable federal regulations.

The data evaluation identified the following UHCs for the D008 soil pile at the Marion LTA:

Naphthalene: Maximum detected soil concentration = 73.8 mg/kg, > 14 mg/kg (derived by 10 X UTS of 1.4 mg/kg);

Toluene: Maximum detected soil concentration = 432 mg/kg, > 100 mg/kg (derived by 10 X UTS of 10 mg/kg);

Trichloroethene: Maximum detected soil concentration = 94.2 mg/kg, > 60 mg/kg (derived by 10 X UTS of 6.0 mg/kg); and,

Lead: Maximum detected soil concentration = 10.6 mg/L.

Lead detection at a concentration of greater than 5.0 mg/L resulted in the soil pile being characterized as D008 characteristic hazardous waste. No VOC concentrations or concentration of any other constituent as measured by TCLP exceeded RCRA TCLP regulatory limits.

### **5.2.3 Post-Treatment Sampling for UHCs**

To verify that the LDR regulatory standards were achieved for the D008 waste characterized at the Marion LTA, one sample was collected per 200 cubic yards of soil in the treated soil pile. Sampling and analysis were conducted in accordance with relevant portions of the USARC QAPP, RmAWP and SAP.

The post-treatment samples were collected and submitted to an approved analytical laboratory on 21 September 2007 for analyses of the identified UHCs. Two VOC samples were collected using TerraCores as described in the project QAPP and SAP for Method 8260 analysis of naphthalene, toluene and trichloroethene. Two TCLP metals samples were collected as multi-incremental samples with 30 sub-samples per TCLP sample for Lead TCLP analysis. The analytical results for the soil samples are included in Appendix B.

The post-treatment data were compared to the applicable standards. The post-treatment results illustrated that the GTSP treatment of the D008 soil pile achieved all applicable UTS concentration reductions. Lead was not detected above the laboratory detection limit in either post-treatment sample, with a reporting limit of 0.3 mg/L and a method detection limit of 0.1 mg/L. The UTS for lead is 0.75 mg/L. The GTSP successfully stabilized the lead concentration in the D008 soil pile such that the soil could be disposed in a RCRA Subtitle D Landfill.

The following are the VOC detected concentrations in the two post-treatment VOC samples:

Naphthalene: 4.38 J ug/kg and 4.86 J ug/kg (or, 0.00438 and 0.00486 mg/kg, respectively). >90% reduction achieved;

Toluene: 3.36 J ug/kg and 3.28 J ug/kg (or, 0.00336 and 0.00328 mg/kg, respectively). >90% reduction achieved; and,

Trichloroethene: 13.8 ug/kg and 20.8 ug/kg (or, 0.0138 mg/kg and 0.0208 mg/kg, respectively).  
>90% reduction achieved.

After review of the waste characterization data and information submitted to the disposal facility to demonstrate that the applicable LDR standards had been achieved, transportation and off-site disposal was conducted on 17-18 October 2007.

#### ***5.2.4 LDR Notification and Certification***

In conformance to 40 CFR 268.9(d), a one-time notification and certification is required and must include signature by the appropriate Army representative. The certification must include the certification language requirements of 40 CFR 268.7(b)(4).

As required by 40 CFR 268.9(d), a one-time notification and certification was prepared and completed with executed Army signature by Mr. Don Casey, authorized signatory for this project. As required by the regulations, the one-time notification is being submitted to Ohio EPA (as the authorized state) via its inclusion in Appendix C of this report. A copy also has been placed in the generator's files at the 88<sup>th</sup> RRC, Ft. Snelling, MN.

## **6.0 SUMMARY AND CONCLUSIONS**

On 22 June 2007, the Army signed the Final Action Memorandum that documented the CERCLA lead agency's decision that a NTCRA would be conducted in three areas on the Marion LTA property. The removal of soils containing COCs found above the site specific RmGs ensures the elimination of the identified exposure pathways for both the current and future land users, allowing the property to be used without restriction by the U.S. Army.

Removal action preparatory activities were initiated in April 2007 with removal of potential bat roost trees and completed with site mobilization and setup through 18 July 2007. Active field work began on 17 July 2007, as clearing and grubbing were initiated, with NTCRA field elements being completed with final site demobilization on 20 October 2007.

A total of 11,058.57 tons of soil were removed from the Marion LTA property (LTA-01, LTA-15, and LTA-16 combined) and disposed of at a County Environmental of Wyandot, Carey, Ohio. Using a conversion factor of 1.3 x tons = cubic yards, this equates to approximately 14,376 cy of waste. Analytical results of final confirmatory samples indicate the RmGs were achieved in all areas. The NTCRA work areas are thus available for Reservist training, the designated land use, without restriction. Further, the Army's additional evaluation of the residual risk as presented in Section 4 of this reports has determined that the Ohio EPA risk goal of  $1 \times 10^{-5}$  for the industrial/commercial potential future use scenario also has been achieved.

Subsequent to completion of excavation and receipt of the analytical results for confirmatory samples, the remedial action sites were backfilled with clean soil and restored to usable condition. The wetland W3 was seeded with wetland species, and will be planted in November 2007 with appropriate species of trees and shrubs, per the wetland mitigation plan. Results for representative groundwater samples collected from existing monitoring wells indicate no impact to groundwater quality from site activities. Based on 2007 groundwater data, the site monitoring wells will be permanently closed per the RmAWP. All equipment was returned to the originator after decontamination as appropriate. All IDW was transported and disposed off-site.

Based on laboratory analytical data for the NTCRA work areas, LTA-01, LTA-15 and LTA-16, all soils and source waste materials have been removed such that no unacceptable risk as defined by CERCLA remains within the three NTCRA work areas.

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USEPA, 2002. *Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites*. Office of Emergency and Remedial Response. OSWER 9285.6-10.

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## **TABLES**

**TABLE 1**  
**REMOVAL ACTION GOALS**

CAS No.	Chemical Name	RmG (mg/kg)	Source of RG
7440-38-2	Arsenic	95	EE/CA
50-32-8	Benzo(a)pyrene	19.6	EE/CA
7439-92-1	Lead	1083, avg. value	USEPA Soil Lead Guidance*

\*(USEPA, 1996 and 2003) Adult Lead Methodology (ALM) used to determine RmG.

**Note** - RmGs are based on an exposure duration of 250 days/yr to represent the industrial/commercial worker exposure as outlined in the HHRA workplan. This exposure does not exist and is not intended to exist at the site.

**Table 2**  
**LTA 01 Confirmatory Sample Summary Table**

Area	Collect Date	Sample ID	Parameter	Detected Concentration	Units	Exceeds (y/n)	Total
LTA01	8/8/2007	LTA01-CS-01A	Arsenic, Total	7.13	mg/kg	No	7.13
			Benzo(a)pyrene	0.0901	mg/kg	No	0.0901
			Lead, Total	83.7	mg/kg	No	83.7
		LTA01-CS-02A	Arsenic, Total	3.9	mg/kg	No	3.9
			Benzo(a)pyrene	0.0995	mg/kg	No	0.0995
			Lead, Total	15.3	mg/kg	No	15.3
		LTA01-CS-03A	Arsenic, Total	58.7	mg/kg	No	58.7
			Benzo(a)pyrene	0.178	mg/kg	No	0.178
			Lead, Total	49.3	mg/kg	No	49.3
		LTA01-CS-03B	Arsenic, Total	17	mg/kg	No	17
			Benzo(a)pyrene	0.462	mg/kg	No	0.462
			Lead, Total	58	mg/kg	No	58
		LTA01-CS-04A	Arsenic, Total	24	mg/kg	No	24
			Benzo(a)pyrene	0.262	mg/kg	No	0.262
			Lead, Total	151	mg/kg	No	151
		LTA01-CS-05A	Arsenic, Total	4.19	mg/kg	No	4.19
			Benzo(a)pyrene	0.0993	mg/kg	No	0.0993
			Lead, Total	18.4	mg/kg	No	18.4
		LTA01-CS-06A	Arsenic, Total	0.798	mg/kg	No	0.798
			Benzo(a)pyrene	0.299	mg/kg	No	0.299
			Lead, Total	14.2	mg/kg	No	14.2
		LTA01-CS-07A	Arsenic, Total	5.86	mg/kg	No	5.86
			Benzo(a)pyrene	0.0981	mg/kg	No	0.0981
			Lead, Total	26.9	mg/kg	No	26.9
		LTA01-CS-07B	Arsenic, Total	0.971	mg/kg	No	0.971
			Benzo(a)pyrene	0.0903	mg/kg	No	0.0903
			Lead, Total	14.8	mg/kg	No	14.8
		LTA01-CS-08A	Arsenic, Total	14.2	mg/kg	No	14.2
			Benzo(a)pyrene	15	mg/kg	No	15
			Lead, Total	205	mg/kg	No	205
LTA01-CS-09A	Arsenic, Total	1.38	mg/kg	No	1.38		
	Benzo(a)pyrene	0.0979	mg/kg	No	0.0979		
	Lead, Total	18.5	mg/kg	No	18.5		
8/15/2007	LTA01-CS-10A	Arsenic, Total	9.46	mg/kg	No	9.46	
		Benzo(a)pyrene	0.095	mg/kg	No	0.095	
		Lead, Total	16.5	mg/kg	No	16.5	
8/30/2007	LTA01-CS-11A	Arsenic, Total	9.95	mg/kg	No	9.95	
		Benzo(a)pyrene	0.943	mg/kg	No	0.943	
		Lead, Total	56.9	mg/kg	No	56.9	
	LTA01-CS-12A	Arsenic, Total	12.6	mg/kg	No	12.6	
		Benzo(a)pyrene	0.754	mg/kg	No	0.754	
		Lead, Total	363	mg/kg	No	363	
	LTA01-CS-13A	Arsenic, Total	16	mg/kg	No	16	
		Benzo(a)pyrene	2.3	mg/kg	No	2.3	
		Lead, Total	1190	mg/kg	Yes	1190	
	LTA01-CS-14A	Arsenic, Total	14.7	mg/kg	No	14.7	
		Benzo(a)pyrene	0.0981	mg/kg	No	0.0981	
		Lead, Total	29.6	mg/kg	No	29.6	
	LTA01-CS-15A	Arsenic, Total	8.08	mg/kg	No	8.08	
		Benzo(a)pyrene	0.124	mg/kg	No	0.124	
		Lead, Total	43.7	mg/kg	No	43.7	
	LTA01-CS-15B	Arsenic, Total	8.42	mg/kg	No	8.42	
		Benzo(a)pyrene	0.094	mg/kg	No	0.094	
		Lead, Total	44.6	mg/kg	No	44.6	

**Table 2**  
**LTA 01 Confirmatory Sample Summary Table**

Area	Collect Date	Sample ID	Parameter	Detected Concentration	Units	Exceeds (y/n)	Total
		LTA01-CS-16A	Arsenic, Total	8.29	mg/kg	No	8.29
			Benzo(a)pyrene	0.226	mg/kg	No	0.226
			Lead, Total	37.1	mg/kg	No	37.1
		LTA01-CS-17A	Arsenic, Total	12	mg/kg	No	12
			Benzo(a)pyrene	0.43	mg/kg	No	0.43
			Lead, Total	155	mg/kg	No	155
		LTA01-CS-18A	Arsenic, Total	1.45	mg/kg	No	1.45
			Benzo(a)pyrene	0.102	mg/kg	No	0.102
			Lead, Total	40	mg/kg	No	40
		LTA01-CS-19A	Arsenic, Total	6.74	mg/kg	No	6.74
			Benzo(a)pyrene	0.097	mg/kg	No	0.097
			Lead, Total	67	mg/kg	No	67
<b>Average Lead in LTA-01 Samples CS-01A through CS-19A = 142.02 mg/kg</b>							
<b>Average Lead in northern half LTA-01, Samples CS-11A through CS-19A = 202.69 mg/kg</b>							

RmGs	
Arsenic	95 mg/kg
Benzo(a)pyrene	19.6 mg/kg
Lead	1083 mg/kg

**Table 3**  
**LTA 15 Confirmatory Sample Summary Table**

Area	Collect Date	Sample ID	Parameter	Detected Concentration	Units	Exceeds (y/n)	Total
LTA15	8/30/2007	LTA15-CS-01A	Arsenic, Total	13.3	mg/kg	No	13.3
			Benzo(a)pyrene	1.92	mg/kg	No	1.92
			Lead, Total	2300	mg/kg	Yes	2300
	9/10/2007	LTA15-CS-01AB	Arsenic, Total	17.3	mg/kg	No	17.3
			Benzo(a)pyrene	1.71	mg/kg	No	1.71
			Lead, Total	133	mg/kg	No	133
	8/30/2007	LTA15-CS-02A	Arsenic, Total	7.35	mg/kg	No	7.35
			Benzo(a)pyrene	0.88	mg/kg	No	0.88
			Lead, Total	1350	mg/kg	Yes	1350
	9/10/2007	LTA15-CS-02AB	Arsenic, Total	14.1	mg/kg	No	14.1
			Lead, Total	18.5	mg/kg	No	18.5
	8/30/2007	LTA15-CS-03A	Arsenic, Total	5.83	mg/kg	No	5.83
			Benzo(a)pyrene	0.883	mg/kg	No	0.883
			Lead, Total	1500	mg/kg	Yes	1500
	9/10/2007	LTA15-CS-03AB	Arsenic, Total	12.7	mg/kg	No	12.7
			Lead, Total	13.6	mg/kg	No	13.6
	8/30/2007	LTA15-CS-03B	Arsenic, Total	1.86	mg/kg	No	1.86
			Benzo(a)pyrene	0.845	mg/kg	No	0.845
			Lead, Total	570	mg/kg	No	570
	8/30/2007	LTA15-CS-04A	Arsenic, Total	8.59	mg/kg	No	8.59
			Benzo(a)pyrene	0.432	mg/kg	No	0.432
Lead, Total			5280	mg/kg	Yes	5280	
9/10/2007	LTA15-CS-04AB	Arsenic, Total	13.9	mg/kg	No	13.9	
		Lead, Total	42.1	mg/kg	No	42.1	
8/30/2007	LTA15-CS-05A	Arsenic, Total	7.18	mg/kg	No	7.18	
		Benzo(a)pyrene	0.103	mg/kg	No	0.103	
		Lead, Total	1580	mg/kg	Yes	1580	
9/10/2007	LTA15-CS-05AB	Arsenic, Total	4.86	mg/kg	No	4.86	
		Lead, Total	837	mg/kg	No	837	
9/10/2007	LTA15-CS-06AB	Arsenic, Total	11.6	mg/kg	No	11.6	
		Benzo(a)pyrene	0.0945	mg/kg	No	0.0945	
		Lead, Total	15.2	mg/kg	No	15.2	
9/10/2007	LTA15-CS-07AB	Arsenic, Total	8.67	mg/kg	No	8.67	
		Benzo(a)pyrene	0.0961	mg/kg	No	0.0961	
		Lead, Total	13.5	mg/kg	No	13.5	

**RmGs**

Arsenic	95 mg/kg
Benzo(a)pyrene	19.6 mg/kg
Lead	1083 mg/kg

Shaded areas are samples taken after additional excavation

**Table 4**  
**LTA 16 Confirmatory Sample Summary Table**

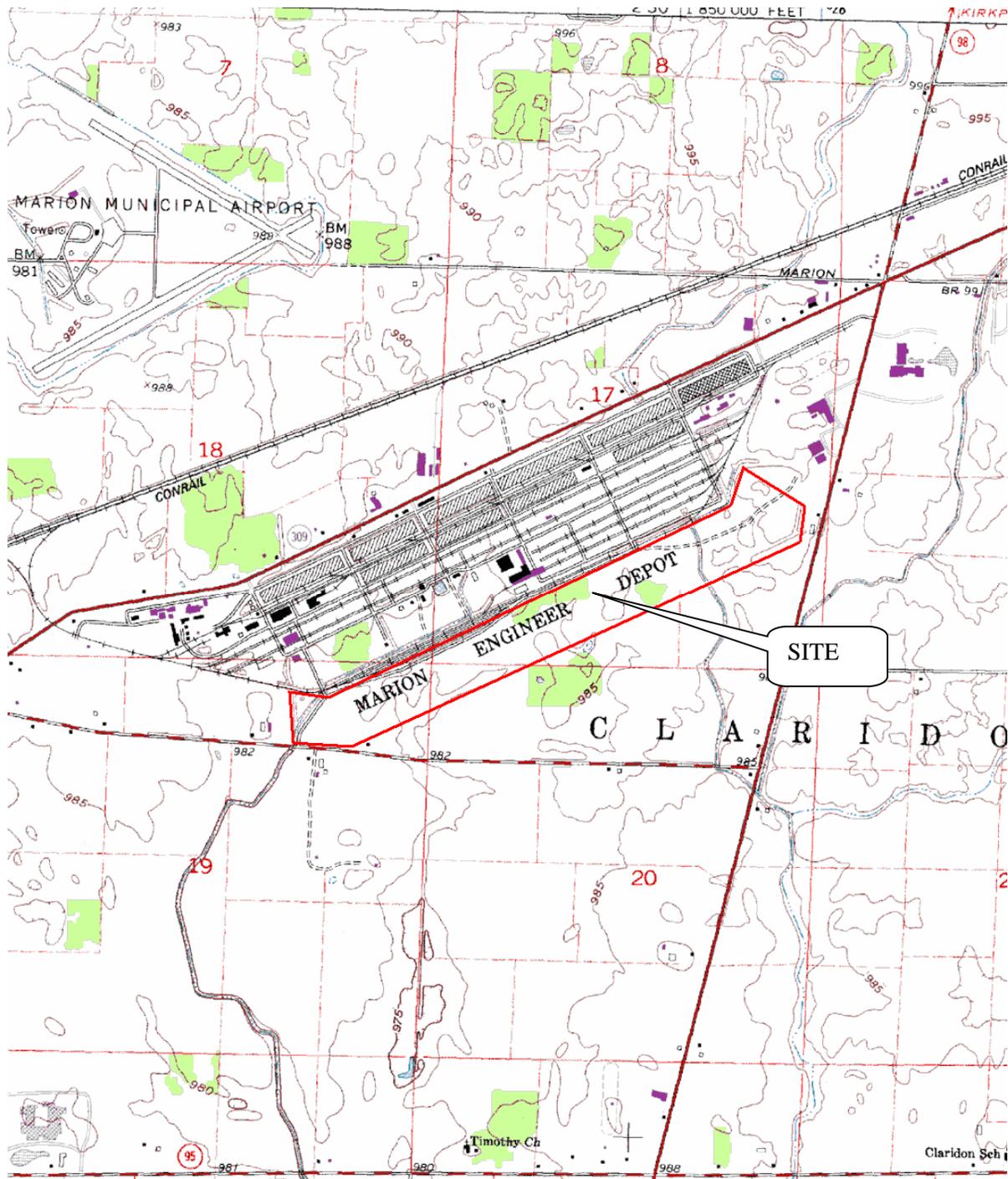
Area	Collect Date	Sample ID	Parameter	Detected Concentration	Units	Exceeds (y/n)	Total
LTA16	8/30/2007	LTA16-CS-01A	Arsenic, Total	17.5	mg/kg	No	17.5
			Benzo(a)pyrene	0.102	mg/kg	No	0.102
			Lead, Total	17.2	mg/kg	No	17.2
		LTA16-CS-02A	Arsenic, Total	8.36	mg/kg	No	8.36
			Benzo(a)pyrene	0.19	mg/kg	No	0.19
			Lead, Total	14.2	mg/kg	No	14.2
		LTA16-CS-02B	Arsenic, Total	6.65	mg/kg	No	6.65
			Benzo(a)pyrene	0.0974	mg/kg	No	0.0974
			Lead, Total	13	mg/kg	No	13
		LTA16-CS-03A	Arsenic, Total	12.1	mg/kg	No	12.1
			Benzo(a)pyrene	0.34	mg/kg	No	0.34
			Lead, Total	78.7	mg/kg	No	78.7
	LTA16-CS-04A	Arsenic, Total	8.05	mg/kg	No	8.05	
		Benzo(a)pyrene	0.175	mg/kg	No	0.175	
		Lead, Total	23.1	mg/kg	No	23.1	
	9/10/2007	LTA16-CS-05A	Arsenic, Total	6.9	mg/kg	No	6.9
			Benzo(a)pyrene	0.103	mg/kg	No	0.103
			Lead, Total	77.4	mg/kg	No	77.4
		LTA16-CS-07A	Arsenic, Total	7.64	mg/kg	No	7.64
			Benzo(a)pyrene	0.0888	mg/kg	No	0.0888
			Lead, Total	92.9	mg/kg	No	92.9

RmGs	
Arsenic	95 mg/kg
Benzo(a)pyrene	19.6 mg/kg
Lead	1083 mg/kg

**Table 5**  
**Monitoring Well Summary Data**

Parameter	SDWA MCL	Units	KMW01S 2/16/2006	KMW01S 10/16/2007	KMW02S 2/16/2006	KMW02S 10/16/2007	KMW04S 2/16/2006	KMW04S 10/16/2007	KMW05S 2/16/2006	KMW05S 10/16/2007	KMW06S 2/16/2006	KMW06S 10/16/2007
Aluminum, Total		mg/L	4.45	3.13	23.3	4.43	9.2	0.238	15.6	9.71	0.275	0.574
Aluminum, Dissolved		mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Antimony, Total		mg/L	0.00391	<0.00125	0.00501	<0.00125	0.00286	<0.00125	0.00337	0.0028J	0.000605 J	<0.00125
Antimony, Dissolved	0.006	mg/L	<0.00025	<0.00125	0.00026 J	<0.00125	0.000281 J	<0.00125	0.000269 J	<0.00125	0.000428 J	<0.00125
Arsenic, Total		mg/L	0.0485	0.0292	0.0734	0.0263	0.0609	0.00309J	0.0727	0.0355	0.0146	0.00205J
Arsenic, Dissolved	0.01	mg/L	0.0187	0.00308J	0.0177	<0.00125	0.0157	0.00147J	0.0177	<0.00125	0.014	<0.00125
Barium, Total		mg/L	0.16	0.173	0.694	0.421	0.106	0.0155	0.169	0.128	0.0278	0.0265
Barium, Dissolved	2	mg/L	0.082	0.0963	0.274	0.275	0.012	0.0135	0.0134	0.0136	0.0254	0.0211
Beryllium, Total		mg/L	0.000299 J	<0.0005	0.00142 J	0.000675J	0.000414 J	<0.0005	0.00102 J	0.000781J	<0.00025	<0.0005
Beryllium, Dissolved	0.004	mg/L	<0.00025	<0.0005	<0.00025	<0.0005	<0.00025	<0.0005	<0.00025	<0.0005	<0.00025	<0.0005
Cadmium, Total		mg/L	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Cadmium, Dissolved	0.005	mg/L	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Calcium, Total		mg/L	189	110	234	140	320	265	368	315	320	265
Calcium, Dissolved		mg/L	166	103	134	128	270	268	277	272	322	268
Chromium, Total		mg/L	0.0092 J	0.00712J	0.0343	0.00829J	0.0149 J	<0.0025	0.0238	0.0158J	0.0035 J	0.00562J
Chromium, Dissolved	0.1	mg/L	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Cobalt, Total		mg/L	<0.0025	<0.0025	0.0166 J	<0.0025	0.00659 J	<0.0025	0.0127 J	0.00662J	<0.0025	<0.0025
Cobalt, Dissolved		mg/L	<0.0025	<0.0025	0.00558 J	<0.0025	0.00323 J	<0.0025	<0.0025	0.00571J	0.00543 J	0.0049J
Copper, Total		mg/L	0.00788 J	0.0121J	0.0401	0.00936J	0.0246	0.00546J	0.0343	0.0297	<0.005	0.00797J
Copper, Dissolved	1.3	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	0.00531J	<0.005	0.00595J	<0.005	0.00702J
Iron, Total		mg/L	9.4	6.07	41.6	19.9	23.4	9.27	39.2	24.5	1.97	2.3
Iron, Dissolved		mg/L	2.06	0.502	1.89	2.8	4.92	6.2	5.72	6.91	0.109	0.175
Lead, Total		mg/L	0.00662	0.00635	0.0329	0.00765	0.0145	<0.00125	0.0204	0.021	0.00382 J	0.00201J
Lead, Dissolved	0.015	mg/L	<0.0025	<0.00125	0.00353 J	<0.00125	0.00253 J	<0.00125	<0.0025	<0.00125	0.00343 J	<0.00125
Magnesium, Total		mg/L	50.4	23.7	63.8	41.3	62	51.1	72.4	66.6	54.1	45.9
Magnesium, Dissolved		mg/L	44.6	22.2	39.1	40.4	50.7	51.9	50.6	50.6	55.6	46.4
Manganese, Total		mg/L	0.198	0.263	0.687	0.167	0.273	0.0894	0.522	0.385	0.739	0.396
Manganese, Dissolved		mg/L	0.121	0.227	0.12	0.118	0.0819	0.078	0.085	0.0616	0.735	0.383
Mercury		mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Mercury, Dissolved	0.002	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel, Total		mg/L	0.0114 J	<0.005	0.0469	0.00567J	0.0202 J	<0.005	0.0385 J	0.0185J	0.00998 J	0.00789J
Nickel, Dissolved		mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.00866 J	<0.005
Potassium, Total		mg/L	3.49	2.97	10.2	3.71	9.12	6.28	11.2	10.4	18	9.66
Potassium, Dissolved		mg/L	1.56	1.97	1.87	2.14	5.6	6.29	6.32	5.68	18	9.58
Selenium, Total		mg/L	0.00153	<0.0025	0.000792 J	<0.0025	0.00144	<0.0025	0.00142	<0.0025	0.00118	<0.0025
Selenium, Dissolved	0.05	mg/L	0.00184	<0.0025	0.00101	<0.0025	0.00114	<0.0025	0.000939 J	<0.0025	0.00141	<0.0025
Silver, Total		mg/L	<0.005	<0.00125	<0.005	<0.00125	<0.005	<0.00125	<0.005	<0.00125	<0.005	<0.00125
Silver, Dissolved		mg/L	<0.005	<0.00125	<0.005	<0.00125	<0.005	<0.00125	<0.005	<0.00125	<0.005	<0.00125
Sodium, Total		mg/L	18.9	13.2	14.9	16.1	40.3	40.9	42.1	45.9	56.5	35.7
Sodium, Dissolved		mg/L	17.9	13.2	13.9	15.9	39.1	41.5	41	43	57.5	36.1
Thallium, Total		mg/L	0.000276	0.000858J	0.00151	0.0024	0.000558	0.000458J	0.000809	0.00235	0.000114 J	0.000503J
Thallium, Dissolved	0.002	mg/L	0.0000873 J	0.00134	0.000091 J	0.00048J	0.0000673 J	0.000898J	0.000623 J	<0.00025	0.0000758 J	0.000374J
Vanadium, Total		mg/L	0.0219	<0.005	0.0648	<0.005	0.0324	<0.025	0.0475	0.00861J	0.0113	<0.025
Vanadium, Dissolved		mg/L	0.0114	<0.005	0.0109	<0.025	0.00867 J	<0.025	0.01	<0.025	0.00921 J	<0.025
Zinc, Total		mg/L	0.0274	0.0208	0.121	0.0217	0.0825	0.00781J	0.1	0.0691	<0.005	0.0155J
Zinc, Dissolved		mg/L	<0.005	0.00657J	<0.005	0.00589J	<0.005	0.00624J	<0.005	0.0133J	<0.005	0.0161J

## **FIGURES**



NORTH

MARION EAST, OH  
QUADRANGLE  
1:24,000

SCALE 1" = 2000'

FIGURE 1  
SITE LOCATION MAP  
MARION LTA USARC SITE  
1565 HARDING HIGHWAY EAST  
MARION, OH

PROJECT NUMBER:	U0005-AJ-001
PREPARED BY:	DAVE PITZER
REVIEWED BY:	CHARLIE MARTIN
DATE:	11/07/07

Former River Valley High School

Former Marion Engineering Depot

LTA-16

LTA-15

LTA-OD4

LTA-OD3

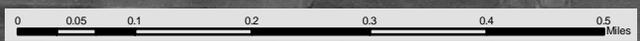
LTA-1

LTA-OD1

LTA-OD2

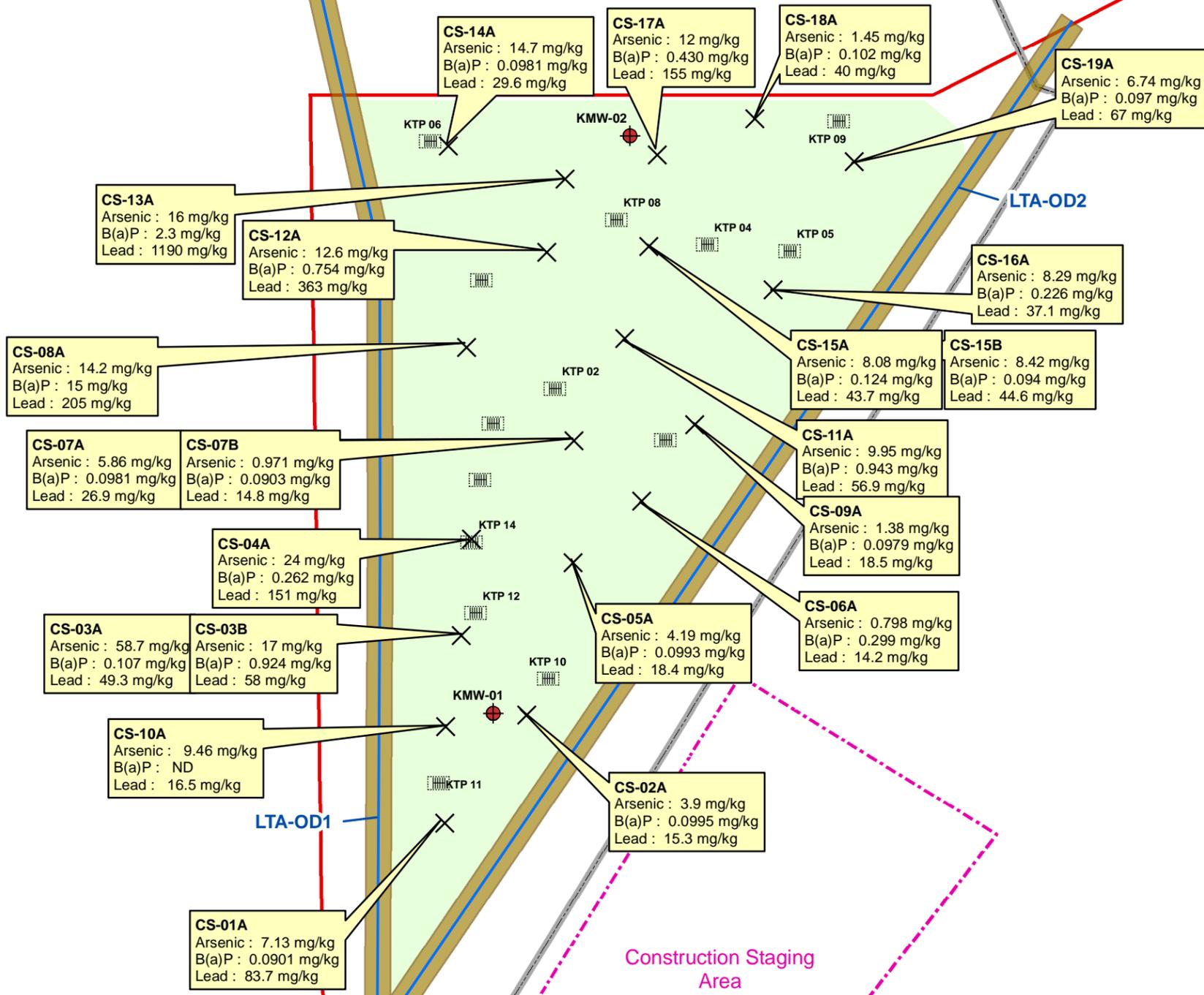
**Legend**

-  Fence Boundary
-  Stream
-  LTA Boundaries



PRJ NO. U0005-AJ-001  
 CREATED BY: DRP  
 CHECKED BY: MLR  
 VERSION 1 -  
 DATE: 11/07/07

**Figure 2**  
**Marion LTA AREE's**  
 LTA-01, LTA-15, LTA-16



**LEGEND**

- ✕ Confirmation Sampling Locations
- ⌘ Completed Test Pit Location
- ⊙ Monitoring Well
- ~ Stream/Ditch
- ▬ Stream/Ditch Bank
- ▭ Construction Staging Area
- ▭ Sub-Area
- ▬ Gate
- ▬ Road
- ▭ Fence Boundary

**CS-08A**  
 Arsenic : 14.2 mg/kg  
 B(a)P : 15 mg/kg  
 Lead : 205 mg/kg

**CS-07A**  
 Arsenic : 5.86 mg/kg  
 B(a)P : 0.0981 mg/kg  
 Lead : 26.9 mg/kg

**CS-07B**  
 Arsenic : 0.971 mg/kg  
 B(a)P : 0.0903 mg/kg  
 Lead : 14.8 mg/kg

**CS-04A**  
 Arsenic : 24 mg/kg  
 B(a)P : 0.262 mg/kg  
 Lead : 151 mg/kg

**CS-03A**  
 Arsenic : 58.7 mg/kg  
 B(a)P : 0.107 mg/kg  
 Lead : 49.3 mg/kg

**CS-03B**  
 Arsenic : 17 mg/kg  
 B(a)P : 0.924 mg/kg  
 Lead : 58 mg/kg

**CS-10A**  
 Arsenic : 9.46 mg/kg  
 B(a)P : ND  
 Lead : 16.5 mg/kg

**CS-01A**  
 Arsenic : 7.13 mg/kg  
 B(a)P : 0.0901 mg/kg  
 Lead : 83.7 mg/kg

**CS-14A**  
 Arsenic : 14.7 mg/kg  
 B(a)P : 0.0981 mg/kg  
 Lead : 29.6 mg/kg

**CS-17A**  
 Arsenic : 12 mg/kg  
 B(a)P : 0.430 mg/kg  
 Lead : 155 mg/kg

**CS-18A**  
 Arsenic : 1.45 mg/kg  
 B(a)P : 0.102 mg/kg  
 Lead : 40 mg/kg

**CS-19A**  
 Arsenic : 6.74 mg/kg  
 B(a)P : 0.097 mg/kg  
 Lead : 67 mg/kg

**CS-13A**  
 Arsenic : 16 mg/kg  
 B(a)P : 2.3 mg/kg  
 Lead : 1190 mg/kg

**CS-12A**  
 Arsenic : 12.6 mg/kg  
 B(a)P : 0.754 mg/kg  
 Lead : 363 mg/kg

**CS-16A**  
 Arsenic : 8.29 mg/kg  
 B(a)P : 0.226 mg/kg  
 Lead : 37.1 mg/kg

**CS-15A**  
 Arsenic : 8.08 mg/kg  
 B(a)P : 0.124 mg/kg  
 Lead : 43.7 mg/kg

**CS-15B**  
 Arsenic : 8.42 mg/kg  
 B(a)P : 0.094 mg/kg  
 Lead : 44.6 mg/kg

**CS-11A**  
 Arsenic : 9.95 mg/kg  
 B(a)P : 0.943 mg/kg  
 Lead : 56.9 mg/kg

**CS-09A**  
 Arsenic : 1.38 mg/kg  
 B(a)P : 0.0979 mg/kg  
 Lead : 18.5 mg/kg

**CS-06A**  
 Arsenic : 0.798 mg/kg  
 B(a)P : 0.299 mg/kg  
 Lead : 14.2 mg/kg

**CS-05A**  
 Arsenic : 4.19 mg/kg  
 B(a)P : 0.0993 mg/kg  
 Lead : 18.4 mg/kg

**CS-02A**  
 Arsenic : 3.9 mg/kg  
 B(a)P : 0.0995 mg/kg  
 Lead : 15.3 mg/kg

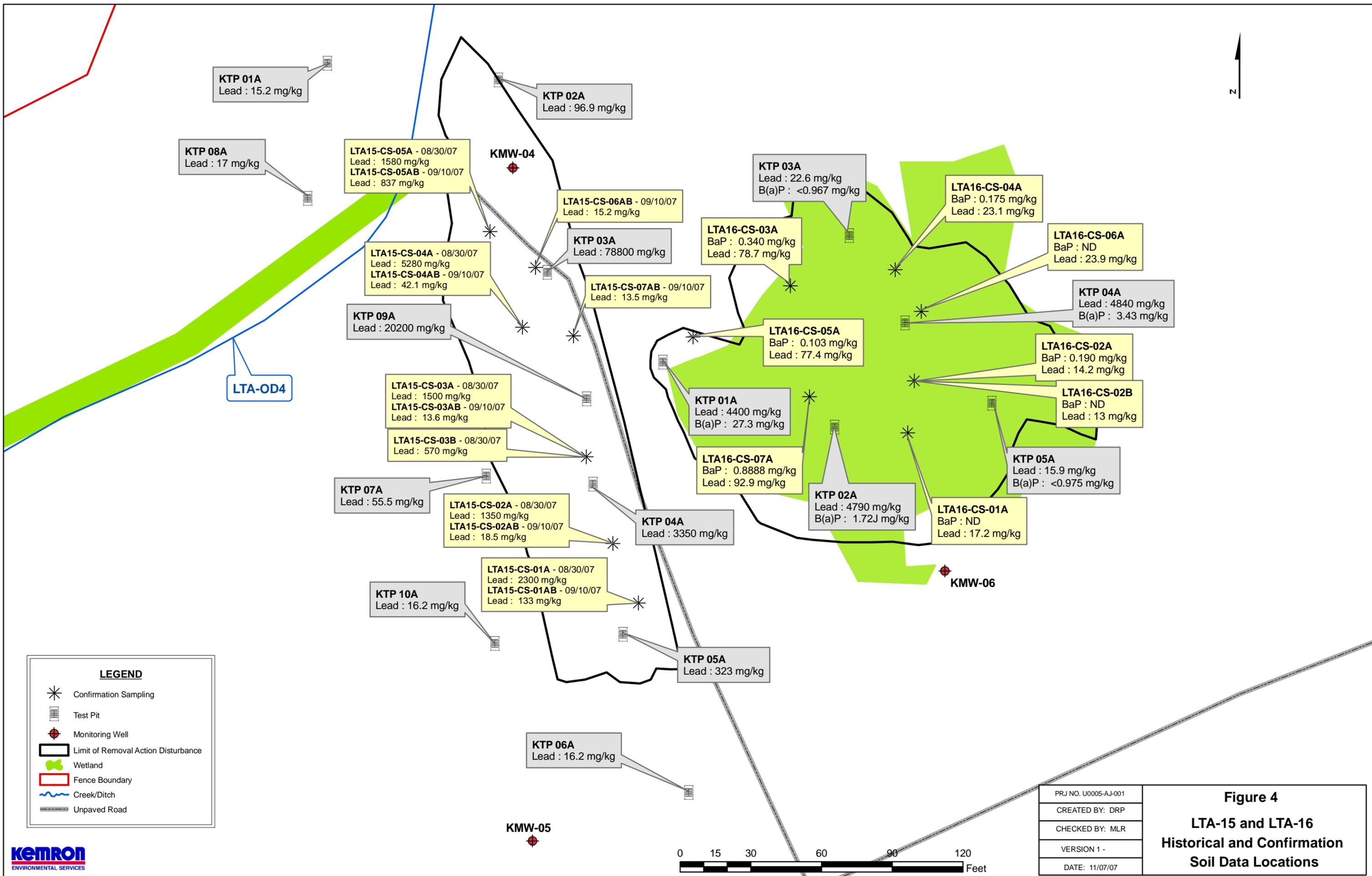
PRJ NO. U0005-AJ-001
CREATED BY: DRP
CHECKED BY: MLR
VERSION 1 -
DATE: 09/10/07

**Figure 3**  
**LTA 01**  
**CONFIRMATION SAMPLING LOCATIONS**



TO  
C.R. 174-A

C.R. 176-A



**KTP 01A**  
Lead : 15.2 mg/kg

**KTP 02A**  
Lead : 96.9 mg/kg

**KTP 08A**  
Lead : 17 mg/kg

**LTA15-CS-05A** - 08/30/07  
Lead : 1580 mg/kg  
**LTA15-CS-05AB** - 09/10/07  
Lead : 837 mg/kg

**KMW-04**

**LTA15-CS-06AB** - 09/10/07  
Lead : 15.2 mg/kg

**KTP 03A**  
Lead : 22.6 mg/kg  
B(a)P : <0.967 mg/kg

**LTA16-CS-04A**  
BaP : 0.175 mg/kg  
Lead : 23.1 mg/kg

**LTA16-CS-06A**  
BaP : ND  
Lead : 23.9 mg/kg

**LTA15-CS-04A** - 08/30/07  
Lead : 5280 mg/kg  
**LTA15-CS-04AB** - 09/10/07  
Lead : 42.1 mg/kg

**KTP 03A**  
Lead : 78800 mg/kg

**LTA16-CS-03A**  
BaP : 0.340 mg/kg  
Lead : 78.7 mg/kg

**KTP 04A**  
Lead : 4840 mg/kg  
B(a)P : 3.43 mg/kg

**KTP 09A**  
Lead : 20200 mg/kg

**LTA15-CS-07AB** - 09/10/07  
Lead : 13.5 mg/kg

**LTA16-CS-05A**  
BaP : 0.103 mg/kg  
Lead : 77.4 mg/kg

**LTA16-CS-02A**  
BaP : 0.190 mg/kg  
Lead : 14.2 mg/kg

**LTA-OD4**

**LTA15-CS-03A** - 08/30/07  
Lead : 1500 mg/kg  
**LTA15-CS-03AB** - 09/10/07  
Lead : 13.6 mg/kg

**LTA15-CS-01A** - 08/30/07  
Lead : 2300 mg/kg  
**LTA15-CS-01AB** - 09/10/07  
Lead : 133 mg/kg

**KTP 01A**  
Lead : 4400 mg/kg  
B(a)P : 27.3 mg/kg

**LTA16-CS-02B**  
BaP : ND  
Lead : 13 mg/kg

**LTA15-CS-03B** - 08/30/07  
Lead : 570 mg/kg

**LTA16-CS-07A**  
BaP : 0.8888 mg/kg  
Lead : 92.9 mg/kg

**KTP 05A**  
Lead : 15.9 mg/kg  
B(a)P : <0.975 mg/kg

**KTP 07A**  
Lead : 55.5 mg/kg

**LTA15-CS-02A** - 08/30/07  
Lead : 1350 mg/kg  
**LTA15-CS-02AB** - 09/10/07  
Lead : 18.5 mg/kg

**KTP 04A**  
Lead : 3350 mg/kg

**KTP 02A**  
Lead : 4790 mg/kg  
B(a)P : 1.72J mg/kg

**LTA16-CS-01A**  
BaP : ND  
Lead : 17.2 mg/kg

**KTP 10A**  
Lead : 16.2 mg/kg

**LTA15-CS-01A** - 08/30/07  
Lead : 2300 mg/kg  
**LTA15-CS-01AB** - 09/10/07  
Lead : 133 mg/kg

**KTP 05A**  
Lead : 323 mg/kg

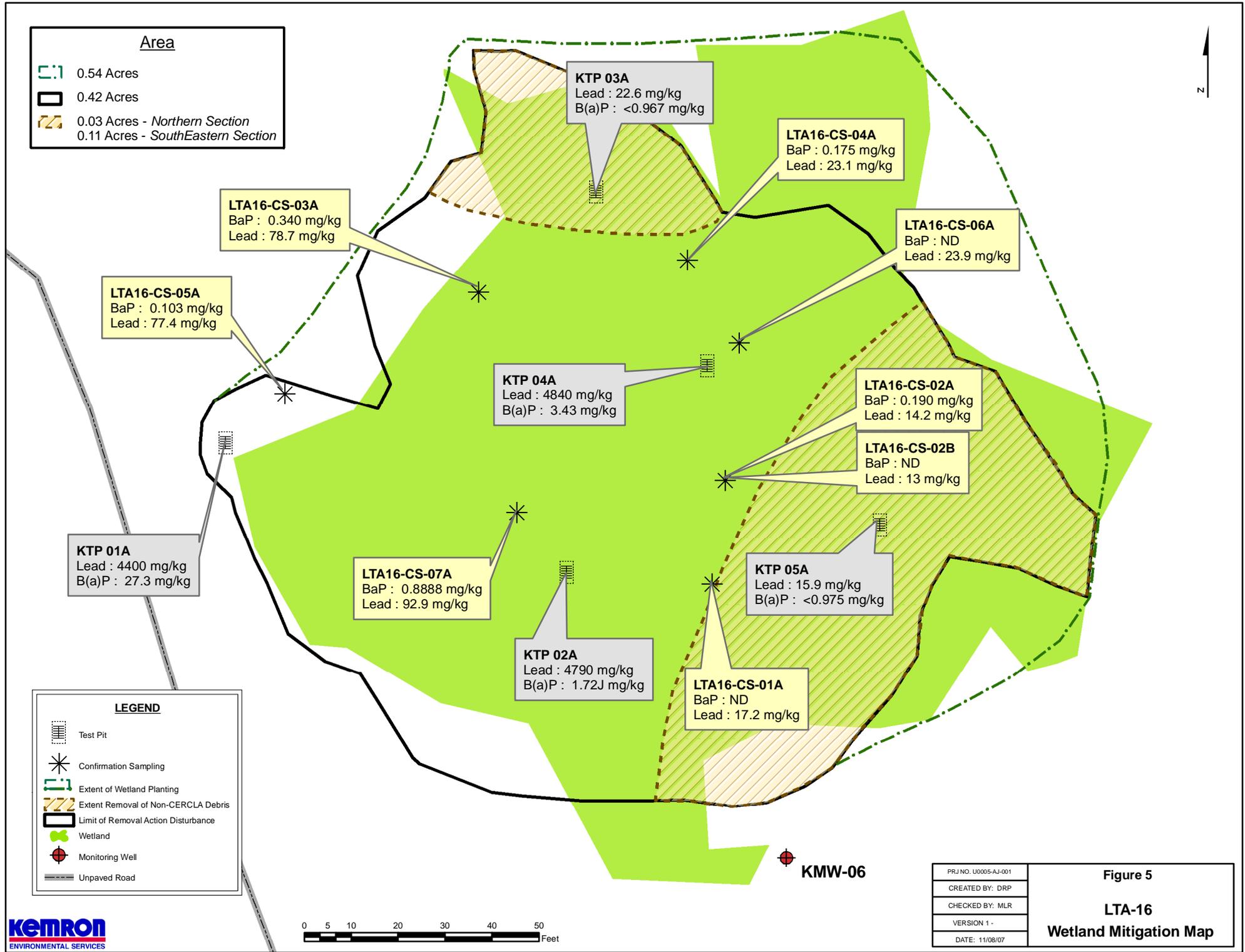
**KMW-06**

**KTP 06A**  
Lead : 16.2 mg/kg

**KMW-05**



Area	
	0.54 Acres
	0.42 Acres
	0.03 Acres - Northern Section 0.11 Acres - SouthEastern Section



PRJ NO. U0005-AJ-001
CREATED BY: DRP
CHECKED BY: MLR
VERSION 1 -
DATE: 11/08/07

**Figure 5**  
**LTA-16**  
**Wetland Mitigation Map**

**APPENDIX A**  
**REMOVAL ACTION PHOTOGRAPHS**



**Photo 1 - NTCRA Site Identification**



**Photo 2 - Site Trailer**



**Photo 3 – Decontamination Station**



**Photo 4 – Pre-exit truck decontamination**



**Photo 5 – Disposal truck documentation check**

**LTA-01  
PHOTOS**



**Photo 1 – LTA-01 - Early phase of excavation**



**Photo 2 – LTA-01 - Stockpiling soils**



**Photo 3 – LTA-01 - Close-up of asphaltic debris**



**Photo 4 – LTA01 - Midsite/excavation mid-process**



**Photo 5 - LTA-01 – View for south excavation in process**



**Photo 6 - LTA-01 - Confirmatory sample location**

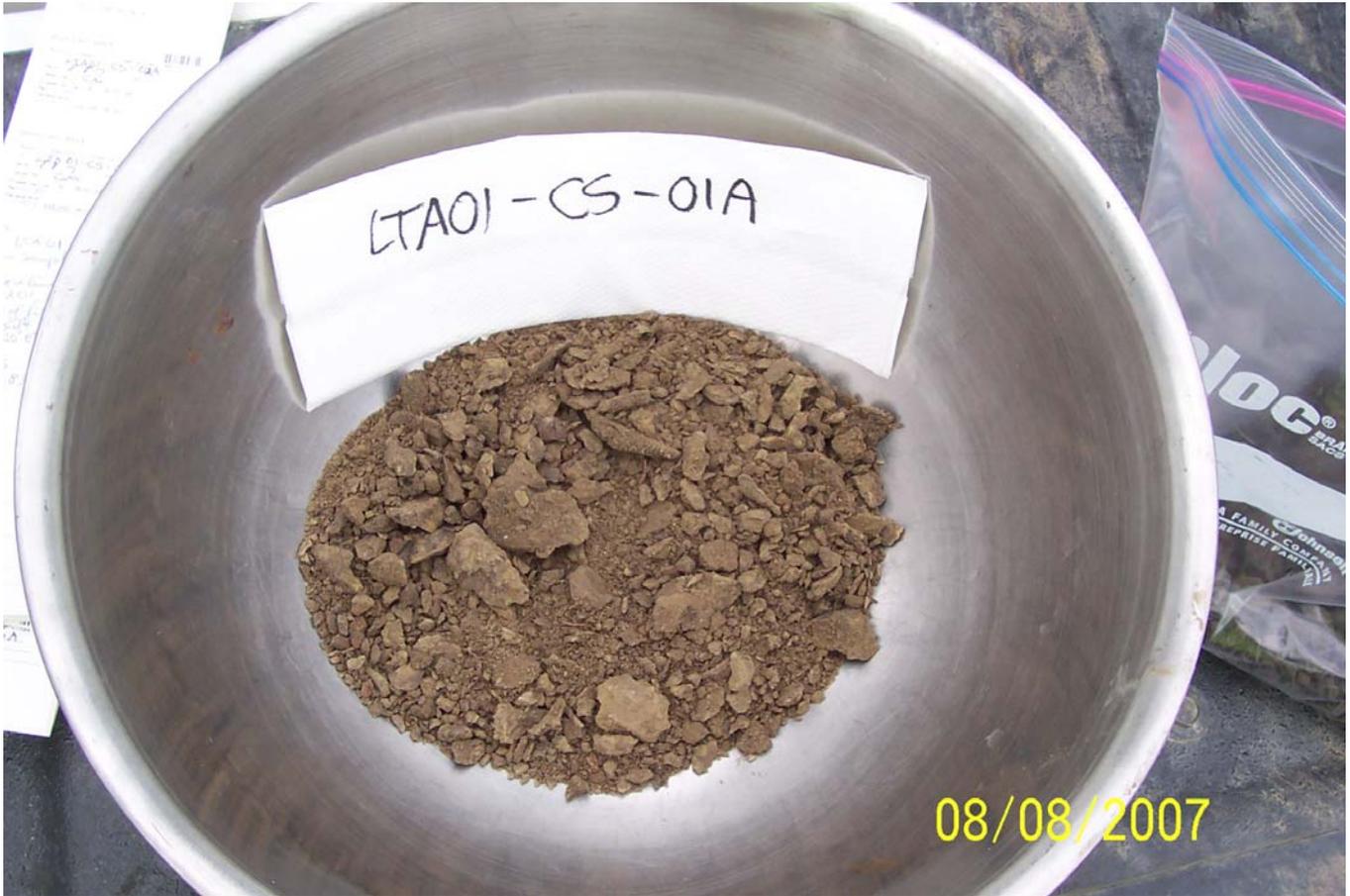


Photo 7 - LTA-01 - Confirmatory soil sample (typical)



Photo 8 - LTA-01 - South end of excavation area



**Photo 9 – LTA-01 - View north along west side of excavation area**



**Photo 10 - LTA-01 - View south with confirmatory sample locations in view**



**Photo 11 - LTA-01 - Excavation along berm areas**



**Photo 12 - LTA-01 - Soil stockpile**



**Photo 13 - LTA-01 - View south to active excavation**



**Photo 14 - LTA-01 - Soil stockpile removal**



**Photo 15 - LTA-01 - Surface excavation completed**



**Photo 16 - LTA-01 - Surface restoration**



**Photo 17 - LTA-01 - Surface restoration completed (view south)**



**Photo 18 - LTA-01 - Restored**

**LTA-15  
PHOTOS**



**Photo 1 - LTA-15 - Pre excavation view/post vegetation clearing**



**Photo 2 - LTA-15 - View of surface debris in LTA**



**Photo 3 - LTA-15 - Constructed soil pile area contiguous to LTA-15**



**Photo 4 - LTA-15 - Surface segregation/excavation prep**



**Photo 5 - LTA-15 - Transite collection**



**Photo 6 - LTA-15 - Excavation in process (view south)**



**Photo 7 – LTA-15 - Initial excavation activities**



**Photo 8 - LTA-15 - View of mixed containers**



**Photo 9 - LTA-15 - View of excavation face**



**Photo 10 - LTA-15 - Close-up view of excavation material**



**Photo 11 - LTA-15 - Roll off, contained waste material**



**Photo 12 - LTA -15 - View of debris/containers in-situ**



**Photo 13 - LTA-15 - Close-up view of excavation process**



**Photo 14 - LTA-15 - Drum carcass**



**Photo 15 – LTA-15 - Drum carcass in lined roll off**



**Photo 16 - LTA-15 - Excavation face**



**Photo 17 - LTA-15 - Soil stockpile (covered)**



**Photo 18 - LTA-15 - Surficial materials removed down to sand layer**



**Photo 19 - LTA-15 - Covered roll offs containing waste containers and other debris**



**Photo 20 - LTA-15 - Confirmatory sample locations**



**Photo 21 - LTA-15 - Soil stockpile in storage area**



**Photo 22 - LTA-15 - Excavation of test pit locations**



**Photo 23 - LTA-15 – Completion of excavation looking north**



**Photo 24 - LTA-15 – Completion of excavation looking south**



**Photo 25 - LTA-15 - Material segregation/stockpile**



**Photo 26 - LTA-15 - Addition of treatment material GTSP**



**Photo 27 - LTA-15 - Soil pile treatment**



**Photo 28 - LTA-15 - Covered soil pile**



**Photo 29 - LTA-15 - Restoration initiated**



**Photo 30 - LTA-15 - Restoration in process**



**Photo 31 - LTA-15 - Restoration in process**



**Photo 32 - LTA-15 - Restoration completed (view south)**



**Photo 33 - LTA-15 - Restored surface (view north)**



**Photo 34 - LTA-15 - Restored surface (view south)**



**Photo 35 – LTA-15 - Constructed soil treatment pile area after restoration**



**Photo 36 - LTA-15 – Restored**



**Photo 37 - LTA-15 - Restored**

**LTA-16  
PHOTOS**



**Photo 1 - LTA-16 - View west across installed sump**



**Photo 2 - LTA-16 - Surface vegetation removed**



**Photo 3 - LTA-16 - Pre excavation**



**Photo 4 - LTA-16 - Perimeter excavation northwest side**



**Photo 5 - LTA-16 - Post excavation**



**Photo 6 - LTA-16 - View toward LTA from south to north**



**Photo 7 - LTA-16 - Precipitation accumulation**



**Photo 8 - LTA-16 - Restoration started**



**Photo 9 - LTA-16 - View of confirmatory sample locations and grade survey stakes (looking east)**



**Photo 10 - LTA-16 - View across LTA with pre-excitation grade markings**



**Photo 11 - LTA-16 - Restoration in process**



**Photo 12 - LTA-16 - Surface restoration to approximate pre-excavation grade**



**Photo 13 - LTA-16 - Restored looking southeast**



**Photo 14 - LTA-16 - Restored looking east**



**Photo 15 – LTA-16 - Red Osier Dogwood shrub planted in wetland**



**Photo 16 - LTA-16 - Two Black Willow saplings planted in wetland**

**APPENDIX B**

**LABORATORY ANALYTICAL REPORTS  
(Provided on CD)**

**APPENDIX C**  
**WASTE PROFILES**



**GENERATOR WASTE PROFILE SHEET**

Requested Disposal Facility: COUNTY ENV. LANDFILL at WYANAOT, CAREY, OH  
an Allied Waste Company

Waste Profile #
AWI Sales Rep:
Date:

**I. Generator Information**

Generator Name: <u>32<sup>nd</sup> Regional Reclamation Commission</u>			
Generator Site Address: <u>1/2 mile East of Patton Pike and Pole Line Rd Intersection</u>			
City: <u>Marion</u>	County: <u>Marion</u>	State: <u>OH</u>	Zip: <u>53502</u>
State ID/Reg No: <u>DHCR20007429</u>		State Approval/Waste Code: (if applicable)	SIC Code: <u>9711</u>
Generator Mailing Address (if different): <u>506 Boulder Circle</u>			
City: <u>East Swilling</u>	County: <u>Henry</u>	State: <u>MN</u>	Zip: <u>55111</u>
Generator Contact Name: <u>Martin Pansch</u>			
Phone Number: <u>612-713-3505</u>		Fax Number: <u>612-713-3516</u>	

**IIa. Transporter Information**

Transporter Name: <u>BROOKSIDE TRUCKING</u>		Contact Name: <u>TIM KNODES</u>	
Transporter Address: <u>3211 S. DIXIE HWY</u>			
City: <u>LIMA</u>	County: <u>ALLEN</u>	State: <u>OH</u>	Zip: <u>45804</u>
Phone Number: <u>419 224-7019</u>	Fax Number: <u>419 224-3990</u>	State Transportation Number: <u>106548-P</u>	

**IIb. Billing Information**

Bill To: <u>KEMRON ENV. SERVICES</u>		Contact Name: <u>GARY ROGERS</u>	
Billing Address: <u>1359-A ELLSWORTH TND Blvd</u>			
City: <u>ATLANTA</u>	State: <u>GA</u>	Zip: <u>30318</u>	Phone Number: <u>404 601 6000</u>

**III. Waste Stream Information**

Name of Waste: <u>SOIL AND DEBRIS</u>	
Process Generating Waste: <u>SOIL EXCAVATED FROM MARION ARMY DEPOT - ENVIRONMENTAL REMEDIATION OF SOILS CONTAINING ROOFING MATERIALS, CONCRETE, WOOD, METAL DEBRIS.</u>	
Type of Waste	<input type="checkbox"/> INDUSTRIAL PROCESS WASTE or <input checked="" type="checkbox"/> POLLUTION CONTROL WASTE
Physical State:	<input checked="" type="checkbox"/> SOLID <input type="checkbox"/> SEMI-SOLID <input type="checkbox"/> POWDER <input type="checkbox"/> LIQUID <input type="checkbox"/> OTHER: _____
Method of Shipment:	<input checked="" type="checkbox"/> BULK <input type="checkbox"/> DRUM <input type="checkbox"/> BAGGED <input type="checkbox"/> OTHER: _____
Estimated Annual Volume:	<input checked="" type="checkbox"/> CUBIC YARDS: <u>10,000</u> <input type="checkbox"/> TONS: _____ <input type="checkbox"/> GALLONS _____ <input type="checkbox"/> OTHER: _____
Frequency:	<input type="checkbox"/> ONE TIME <input type="checkbox"/> DAILY <input type="checkbox"/> WEEKLY <input type="checkbox"/> MONTHLY <input checked="" type="checkbox"/> OTHER: <u>PER PROJECT</u>
Special Handling Instructions: <u>AVOID SKIN CONTACT, USE BEST MGMT. PRACTICES FOR DUST.</u>	

**IV. Representative Sample Certification**

Is the representative sample collected to prepare this profile and laboratory analysis, collected in accordance with U.S. EPA 40 CFR 261.20(c) guidelines or equivalent rules?		<input type="checkbox"/> NO SAMPLE TAKEN
		<input checked="" type="checkbox"/> YES or <input type="checkbox"/> NO
Sample Date:	Type of Sample: <input checked="" type="checkbox"/> COMPOSITE SAMPLE <input type="checkbox"/> GRAB SAMPLE	
Laboratory: <u>KEMRON</u>	Sample ID Numbers: <u>LTA-01 3P</u>	
Sampler's Employer: <u>KEMRON</u>		
Sampler's Name (printed): <u>Jessica Harris</u>	Signature: <u>Jessica Harris</u>	



GENERATOR WASTE PROFILE SHEET (continued)

Waste Profile #

V. Physical Characteristics of Waste

Table with columns: Characteristic Components, % by Weight (range), Color, Odor, Free Liquids, % Solids, pH, Flash Point, Phenol.

Attach Laboratory Analytical Report (and/or Material Safety Data Sheet) Including Required Parameters Provided for this Profile. Includes checkboxes for various regulatory criteria.

I. Generator Certification

I hereby certify that to the best of my knowledge and belief, the information contained herein is a true, complete and accurate description of the waste material being offered for disposal...

Signature and title fields for Donald E. Casey, Construction Representative, 89th Regional Readiness Command.

VII. Allied Waste Decision

Decision form with checkboxes for Approved/Rejected, Expiration date, and signature lines.

COC No. A 73046

156 Starlite Drive  
Marietta, OH 45750



CHAIN-OF-CUSTODY RECORD

Phone: 740-373-4071  
Fax: 740-373-4835

B8354

Company Name: <b>KEMTRON</b>		Contact Phone #: <b>740 435 3943, 3011</b>																																		
Project Contact: <b>Erin Rogers</b>		Location: <b>MARION OHIO</b>																																		
Turn Around Requirements: <b>5 DAYS</b>		Project Name: <b>MARION ARMY DEPOT</b>																																		
Project #: <b>11005-AB-003</b>		Signature: <i>Jessica Harris</i>																																		
Sampler (print): <b>Jessica Harris</b>		Protocol: <b>CWA SW846</b>																																		
Sample I.D. No.:	Date:	Time:																																		
<b>12A-01 SP</b>	<b>8-1-07</b>	<b>1015</b>																																		
NUMBER OF CONTAINERS																																				
To:																																				
<table border="1"> <tr> <th>Item</th> <th>Quantity</th> <th>Notes</th> </tr> <tr> <td>TELE METERS</td> <td>✓</td> <td></td> </tr> <tr> <td>TELE VOLTMETERS</td> <td>✓</td> <td></td> </tr> <tr> <td>TELE THERM. VOL.</td> <td>✓</td> <td></td> </tr> <tr> <td>PBS'S</td> <td>✓</td> <td></td> </tr> <tr> <td>ESTRILDES / BERTS</td> <td>✓</td> <td></td> </tr> <tr> <td>96 SORBS</td> <td>✓</td> <td></td> </tr> <tr> <td>FLASH</td> <td>✓</td> <td></td> </tr> <tr> <td>PH</td> <td>✓</td> <td></td> </tr> <tr> <td>DN</td> <td>✓</td> <td></td> </tr> <tr> <td>SULFIDES</td> <td>✓</td> <td></td> </tr> </table>				Item	Quantity	Notes	TELE METERS	✓		TELE VOLTMETERS	✓		TELE THERM. VOL.	✓		PBS'S	✓		ESTRILDES / BERTS	✓		96 SORBS	✓		FLASH	✓		PH	✓		DN	✓		SULFIDES	✓	
Item	Quantity	Notes																																		
TELE METERS	✓																																			
TELE VOLTMETERS	✓																																			
TELE THERM. VOL.	✓																																			
PBS'S	✓																																			
ESTRILDES / BERTS	✓																																			
96 SORBS	✓																																			
FLASH	✓																																			
PH	✓																																			
DN	✓																																			
SULFIDES	✓																																			
ADDITIONAL REQUIREMENTS																																				
<b>WASTE CERBERA</b>																																				
<table border="1"> <tr> <th>Received by (Signature)</th> <th>Date</th> <th>Time</th> <th>Remarks</th> </tr> <tr> <td><i>Jessica Harris</i></td> <td>8/2/07</td> <td>1130</td> <td></td> </tr> <tr> <td><i>Steve K. Thompson</i></td> <td>8/3/07</td> <td>1115</td> <td>4</td> </tr> </table>				Received by (Signature)	Date	Time	Remarks	<i>Jessica Harris</i>	8/2/07	1130		<i>Steve K. Thompson</i>	8/3/07	1115	4																					
Received by (Signature)	Date	Time	Remarks																																	
<i>Jessica Harris</i>	8/2/07	1130																																		
<i>Steve K. Thompson</i>	8/3/07	1115	4																																	

\*Homogenize all composite samples prior to analysis



**GENERATOR WASTE PROFILE SHEET**

Waste Profile #
AWI Sales Rep:
Date:

Requested Disposal Facility: COUNTY ENV. of WYANDOT  
an Allied Waste Company

**I. Generator Information**

Generator Name: <u>88th ARMY RESERVE, REGIONAL READINESS COMMAND</u>			
Generator Site Address: <u>2505 HARDING HIGHWAY EAST</u>			
City: <u>MARION</u>	County: <u>MARION</u>	State: <u>OHIO</u>	Zip: <u>43302</u>
State ID/Reg No:	State Approval/Waste Code:	(if applicable)	SIC Code:
Generator Mailing Address (if different): <u>88th REGIONAL READINESS COMMAND</u>			
City: <u>FORT SNELLING</u>	County: <u>HENNIPEN</u>	State: <u>MIN</u>	Zip: <u>55111</u>
Generator Contact Name: <u>MARTIN PANSON</u>			
Phone Number: <u>(612) 713-3505</u>		Fax Number: <u>(612) 713-3516</u>	

**IIa. Transporter Information**

Transporter Name: <u>BROOKSIDE TRUCKING</u>		Contact Name: <u>TIM KNOTTS</u>	
Transporter Address: <u>3211 S. DIXIE HWY.</u>			
City: <u>LIMA</u>	County:	State: <u>OHIO</u>	Zip:
Phone Number:	Fax Number:	State Transportation Number:	

**IIb. Billing Information**

Bill To: <u>KEMRON ENVIRONMENTAL</u>		Contact Name: <u>GARY ROGERS</u>	
Billing Address: <u>1359-A ELLSWORTH LIND BLVD</u>			
City: <u>ATLANTA</u>	State: <u>GA</u>	Zip: <u>30318</u>	Phone Number: <u>404 435 3962</u>

**III. Waste Stream Information**

Name of Waste: <u>SOIL AND DEBRIS</u>
Process Generating Waste: <u>ENVIRONMENTAL REMEDIATION OF AN INACTIVE ARMY RESERVE TRAINING AREA. SEE ATTACHED "DOCS ON-SITE TREATMENT AND DEMONSTRATION OF COMPLIANCE W/ LDR'S</u>
Type of Waste: <input type="checkbox"/> INDUSTRIAL PROCESS WASTE or <input checked="" type="checkbox"/> POLLUTION CONTROL WASTE
Physical State: <input checked="" type="checkbox"/> SOLID <input type="checkbox"/> SEMI-SOLID <input type="checkbox"/> POWDER <input type="checkbox"/> LIQUID <input type="checkbox"/> OTHER: _____
Method of Shipment: <input checked="" type="checkbox"/> BULK <input type="checkbox"/> DRUM <input type="checkbox"/> BAGGED <input type="checkbox"/> OTHER: _____
Estimated Annual Volume: <input checked="" type="checkbox"/> CUBIC YARDS: <u>400</u> <input type="checkbox"/> TONS: _____ <input type="checkbox"/> GALLONS _____ <input type="checkbox"/> OTHER: _____
Frequency: <input checked="" type="checkbox"/> ONE TIME <input type="checkbox"/> DAILY <input type="checkbox"/> WEEKLY <input type="checkbox"/> MONTHLY <input type="checkbox"/> OTHER:
Special Handling Instructions: <u>AVOID DERMAL CONTACT, AND INHALATION.</u>

**IV. Representative Sample Certification**

NO SAMPLE TAKEN

Is the representative sample collected to prepare this profile and laboratory analysis, collected in accordance with U.S. EPA 40 CFR 261.20(c) guidelines or equivalent rules?	<input checked="" type="checkbox"/> YES or <input type="checkbox"/> NO
Sample Date: <u>9-21-07</u> Type of Sample: <input checked="" type="checkbox"/> COMPOSITE SAMPLE <input type="checkbox"/> GRAB SAMPLE	
Laboratory: <u>KEMRON ENV. SERVICES</u> Sample ID Numbers: <u>ATTACHED</u>	
Sampler's Employer: <u>KEMRON</u>	
Sampler's Name (printed):	Signature:



# GENERATOR WASTE PROFILE SHEET (continued)

Waste Profile #

## V. Physical Characteristics of Waste

Characteristic Components		% by Weight (range)				
1.	SOIL 0-90%					
2.	TRASH AND DEBRIS 0-10%					
3.						
4.						
5.						
Color	Odor (describe)	Free Liquids <input type="checkbox"/> YES or <input checked="" type="checkbox"/> NO Content %	% Solids 87%	pH: 7.8	Flash Point 7200 °F	Phenol ppm

### Attach Laboratory Analytical Report (and/or Material Safety Data Sheet) Including Required Parameters Provided for this Profile

Does this waste or generating process contain regulated concentrations of the following Pesticides and/or Herbicides: Chlordane, Endrin, Heptachlor (and it epoxides), Lindane, Methoxychlor, Toxaphene, 2,4-D, or 2,4,5-TP Silvex as defined in 40 CFR 261.33?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does this waste or generating process cause it to exceed OSHA exposure limits from high levels of Hydrogen Sulfide or Hydrogen Cyanide as defined in 40 CFR 261.23?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does this waste contain regulated concentrations of Polychlorinated Biphenyls (PCBs) as defined in 40 CFR Part 761?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does this waste contain regulated concentrations of listed hazardous wastes defined in 40 CFR 261.31, 261.32, 261.33, including RCRA F-Listed Solvents?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does this waste contain regulated concentrations of 2,3,7,8-Tetrachlorodibenzodioxin (2,3,7,8-TCDD), or any other dioxin as defined in 40 CFR 261.31?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Is this a regulated Toxic Material as defined by Federal and/or State regulations?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Is this a regulated Radioactive Waste as defined by Federal and/or State regulations?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Is this a regulated Medical or Infectious Waste as defined by Federal and/or State regulations?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Is this waste generated at a Federal Superfund Clean Up Site?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No

## VI. Generator Certification

I hereby certify that to the best of my knowledge and belief, the information contained herein is a true, complete and accurate description of the waste material being offered for disposal and all known or suspected hazards have been disclosed. All Analytical Results/Material Safety Data Sheets submitted are truthful and complete and are representative of the waste. I further certify that by utilizing this profile, neither myself nor any other employee of the company will deliver for disposal or attempt to deliver for disposal any waste which is classified as toxic waste, hazardous waste or infectious waste, or any other waste material this facility is prohibited from accepting by law. I shall immediately give written notice of any change or condition pertaining to the waste not provided herein. Our company hereby agrees to fully indemnify this disposal facility against any damages resulting from this certification being inaccurate or untrue. I further certify that the company has not altered the form or content of this profile sheet as provided by Allied Waste.

Donald E Casey Construction Representative *on behalf of* 88th Regional Readiness Command  
 Authorized Representative Name And Title (Printed) Company Name  
Donald E Casey 10/01/07  
 Authorized Representative Signature Date

## VII. Allied Waste Decision

Approved       Rejected      Expiration: \_\_\_\_\_

Conditions: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

\_\_\_\_\_ Name, Title      \_\_\_\_\_ Signature      \_\_\_\_\_ Date

## **US Army Reserve Marion LTA Non-Time-Critical Removal Action: D008 On-Site Treatment and Demonstration of Compliance with Applicable Land Disposal Restrictions**

The US Army Environmental Command (USAEC) has conducted a CERCLA investigation and removal action at the U.S. Army Reserve Local Training Area (LTA), Marion, Ohio. Implementing the July 2007 Final Removal Action Work Plan, excavation of soil and related contaminant source materials were conducted in three locations at the Marion LTA. One of the areas in which the CERCLA Non-Time-Critical Removal Action was conducted is designated as LTA-15.

As is presented in Section 4.0 of the Final Removal Action Work Plan, "suspect soils" were stockpiled from LTA-15 and performed waste characterization. Suspect soils were placed on the constructed staging area per the final plan. The soil stockpiled on the constructed area contiguous to LTA-15 was determined to be a characteristic hazardous waste, D008, based on TCLP analytical results of lead greater than 5 mg/Kg.

The D008 soil was excavated and placed on the constructed stockpile area on 15-17 August 2007. Per the Final Removal Action Work Plan, the soil stockpile had storm water controls in place, was kept covered, and the area was inspected daily. The volume of the original D008 soil pile was approximately 400 cubic yards. Copies of the analytical results confirming the appropriate characterization as D008 characteristic hazardous waste are attached.

### **D008 Stabilization Summary**

Consistent with the Final Removal Action Work Plan, KEMRON evaluated D008 characteristic soil stabilization options and selected Granulated Triple Super Phosphate (GTSP) as the stabilizing agent to be applied to the D008 waste soil pile at approximately 9% by weight.

GTSP was brought on site and application of the GTSP began on Friday, 07 September 2007. The material was incorporated into the waste via excavators (trackhoes). The soil pile was subdivided into halves, and 25.53 tons of GTSP was placed inside the stormwater berm upon delivery. The soil pile was uncovered and a trackhoe was moved to the top of the pile, where it was then used to add buckets of GTSP to the soil in the correct ratio, mixing and moving to the one end of the stockpile as the reagent is mixed. The pile was thoroughly mixed with the reagent to form a stabilized stockpile for sampling. Approximately 25 additional tons of GTSP were delivered to the site on 14 September 2007 and directly applied to the soil pile. Following thorough mixing of the GTSP into the entire soil pile at the appropriate ratio, the soil pile was covered and the necessary chemical reaction occurred to accomplish stabilization. A reaction time of approximately one week occurred prior to waste characterization sampling.

### **Land Disposal Restriction and Underlying Hazardous Constituent Summary**

40 CFR 268.49 establishes alternative Land Disposal Restriction (LDR) treatment standards for contaminated soil that exhibits a characteristic of hazardous waste. Prior to land disposal, all constituents subject to treatment under the Land Disposal Restrictions must be treated to achieve 90 percent reduction in constituent concentrations as measured by either TCLP or total constituent concentration (as specified by the regulations). When treatment of any constituent

subject to a 90% reduction would result in a concentration less than 10 times the applicable Universal Treatment Standard (UTS), treatment to the UTS is not required.

The 2005 Supplemental Site Investigation LTA-15 analytical results for VOCs, SVOCs and PCBs, as well as TCLP analytical results from the recent soil pile waste characterization sampling, was used to provide a listing of underlying hazardous constituents (UHCs) for the waste soils.

Per 40 CFR 268.49 (d), the specified hazardous constituents that are subject to treatment include any constituents listed in 40 CFR 268.48 Table UTS – Universal Treatment Standards, that are “reasonably expected to be present in any given volume of contaminated soil” (except certain specified contaminants) that are present at concentrations greater than ten (10) times the UTS.

A full data evaluation was conducted to identify underlying hazardous constituents (UHCs) as required by environmental regulations. The entire set of soil analytical results from LTA-15 as compared to the UTS table of 40 CFR 268.48 for constituents (other than metals) to determine which detected constituents exceeded a value equal to ten times the UTS measured in total constituent concentrations, per 40 CFR 268.49(d). This evaluation was conducted as part of the determination of UHCs that would be subject to the 90% reduction per 40 CFR 268.49(c)(1)(B). The sampling and analysis in LTA-15 soils included all constituents that would reasonably be expected to be present in soil, thus providing a data set that meets the standard for data evaluation (see 40 CFR 268.49(d)).

The TCLP analysis of the excavated soil pile was used to determine which constituents measured in leachate concentration (as required by the UTS table) were identified as UHCs. Lead was the only TCLP measured constituent identified as a UHC, and thus requiring concentration reduction under the applicable federal regulations.

The data evaluation identified the following UHCs for the D008 soil pile at the Marion LTA:

**Naphthalene:** Max. detected soil concentration = 73.8 mg/kg, > 14 mg/kg (derived by 10 X UTS of 1.4 mg/kg);

**Toluene:** Max. detected soil concentration = 432 mg/kg, > 100 mg/kg (derived by 10 X UTS of 10 mg/kg);

**Trichloroethene:** Max. detected soil concentration = 94.2 mg/kg, > 60 mg/kg (derived by 10 X UTS of 6.0 mg/kg); and,

**Lead:** Max. detected soil concentration = 10.6 mg/L.

Lead detection at a concentration of > 5.0 mg/L resulted in the soil pile being characterized as D008 characteristic hazardous waste. No VOC concentrations or concentration of any other constituent as measured by TCLP exceeded RCRA TCLP regulatory limits.

#### **Post-Treatment Sampling for UHCs**

To verify that the LDR regulatory standards were achieved for the D008 waste characterized at the Marion LTA, one sample was collected per 200 cubic yards of soil in the treated soil pile. Sampling and analysis were conducted in accordance with relevant portions of the USARC Quality Assurance Project Plan, Removal Action Work Plan and Sampling and Analysis Plan.

The post-treatment samples were collected and submitted to an approved analytical laboratory on 21 September 2007 for analyses of the identified UHCs. Two VOC samples were collected using TerraCores as described in the project QAPP and SAP for Method 8260 analysis of naphthalene,

toluene and trichloroethene. Two TCLP metals samples were collected as multi-incremental samples with 30 sub-samples per TCLP sample for Lead TCLP analysis.

The preliminary analytical results for the soil samples are attached. The final analytical report will be included in the Removal Action Completion Report.

The post-treatment data have been compared to the applicable standards. As the attached post-treatment results illustrate, the GTSP treatment of the D008 soil pile achieved all applicable UTS concentration reductions.

**Lead** is not detected above the laboratory detection limit in either post-treatment sample, with a reporting limit of 0.3 mg/L and a method detection limit of 0.1 mg/L. The UTS for lead is 0.75 mg/L. The GTSP has been demonstrated to successfully stabilize the lead concentration in the D008 soil pile such that the soil can be disposed in a RCRA Subtitle D Landfill.

The following are the VOC detected concentrations in the two post-treatment VOC samples:

**Naphthalene:** 4.38 J ug/kg and 4.86 J ug/kg (or, 0.00438 and 0.00486 mg/kg, respectively).  
>90% reduction achieved;

**Toluene:** 3.36 J ug/kg and 3.28 J ug/kg (or, 0.00336 and 0.00328 mg/kg, respectively). >90% reduction achieved; and,

**Trichloroethene:** 13.8 ug/kg and 20.8 ug/kg (or, 0.0138 mg/kg and 0.0208 mg/kg, respectively).  
>90% reduction achieved.

Upon acceptance by the disposal facility of the demonstration that the applicable LDR standards have been achieved and accomplishment of final waste profiling, transportation and off-site disposal will be conducted.

#### **Notification and Certification**

In conformance to 40 CFR 268.9(d), a one-time notification and certification is required and must include signature by the appropriate Army representative. The certification must include the certification language requirements of 40 CFR 268.7(b)(4).

As required by 40 CFR 268.9(d), a one-time notification and certification is attached for Army signature. Please note that the regulations require that the one-time notification be submitted to Ohio EPA (as the authorized state) and a copy placed in the generator's files. Upon signature execution and return to KEMRON, the attached documentation will be distributed to the contract management group, a paper copy provided for the 88<sup>th</sup>'s files, and a copy placed in the Administrative Record for the project.

## **40 CFR 268.9(d) and OAC 3745-270-09(D): Notification and Certification for D008 Waste Treatment and Disposal**

### **U.S. Army Reserve Local Training Area (LTA), Marion, Ohio**

In accordance with 40 CFR 268.9(d) and 40 CFR 268.7 requirements, and the parallel requirements of Ohio Administrative Code Rules 3745-270-07 and 3745-270-09, the following one-time notification and certification has been prepared for retention in the generator's records and submission to Ohio EPA as the authorized state for D008 waste treated at the U.S. Army Reserve Local Training Area (LTA), Marion, Ohio.

This completed one-time notification and certification will be placed in the generator's files at Fort Snelling, MN, will be sent to the Director of Ohio EPA as required by 40 CFR 268.9(d) and OAC Rule 3745-270-09(D), and will be provided to the receiving landfill.

#### **1. 40 CFR 268.9(d)(1)(i) and OAC 3745-270-09(D)(1)(a): Name and Address of the RCRA Subtitle D solid waste facility receiving the waste shipment.**

County Environmental Landfill of Wyandot  
11164 County Road #4  
Carey, Ohio 43316  
ID# 88-00-02

#### **2. 40 CFR 268.9(d)(1)(ii) and OAC 3745-270-09(D)(1)(b): Description of the waste as initially generated, including the applicable EPA hazardous waste code(s), treatability groups, and underlying hazardous constituents (as defined in § 268.2(i), unless the waste will be treated and monitored for all underlying hazardous constituents. If all underlying hazardous constituents will be treated and monitored, there is no requirement to list any of the underlying hazardous constituents on the notice.**

D008 Waste initially generated as soil excavated from area LTA-15 within the US Army Reserve Marion Local Training Area. Treatment was by stabilization with Granulated Triple Super Phosphate.

##### **Underlying Hazardous Constituents:**

**Naphthalene:** Max. detected soil concentration = 73.8 mg/kg, > 14 mg/kg (derived by 10 X UTS of 1.4 mg/kg);

**Toluene:** Max. detected soil concentration = 432 mg/kg, > 100 mg/kg (derived by 10 X UTS of 10 mg/kg);

**Trichloroethene:** Max. detected soil concentration = 94.2 mg/kg, > 60 mg/kg (derived by 10 X UTS of 6.0 mg/kg); and,

**Lead:** Max. detected soil concentration = 10.6 mg/L.

(NOTE: Original waste characterization and Post-Treatment analytical results for UHCs are attached.)

3. 40 CFR 268.9(d)(2)(i) and OAC 3745-270-09(D)(2)(a): If treatment removes the characteristic but does not meet standards applicable to underlying hazardous constituents, then the certification found in § 268.7(b)(4)(iv) applies.

Not applicable.

4. 40 CFR 268.9(d)(2) and OAC 3745-270-09(D)(2) : The certification must be signed by an authorized representative and must state the language found in § 268.7(b)(4);

and,

40 CFR 268.7(b)(4) and OAC 3745-270-07(B)(4): The treatment facility must submit a one-time certification signed by an authorized representative with the initial shipment of waste or treatment residue of a restricted waste to the land disposal facility. The certification must state:

*I certify under penalty of law that I personally have examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the treatment standards specified in 40 CFR 268.40 and rule 3745-270-40 of the Ohio Administrative Code without impermissible dilution of the prohibited wastes.*

*I certify under penalty of law that I personally have examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and believe that it has been maintained and operated properly so as to comply with the treatment standards specified in rule 3745-270-49 of the Ohio Administrative Code without impermissible dilution of the prohibited wastes.*

*I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.*

Authorized representative signature:

Donald E Casey *on behalf of 88th RRC*

Construction Representative  
Title

10/01/07  
Date



DEPARTMENT OF THE ARMY  
HEADQUARTERS, 88TH REGIONAL READINESS COMMAND  
506 ROEDER CIRCLE  
FORT SNELLING, MINNESOTA 55111-4009

REPLY TO  
ATTENTION OF

ARRC-CMN-EN

31 July 2007

MEMORANDUM FOR DONALD E. CASEY, US Army Corps of Engineers, Louisville District, 600 Dr. Martin Luther King, Jr. Place, Louisville, KY 40202-2232.

SUBJECT: Delegation of Signature Authority

1. You, in your capacity as the official of the US Army Corps of Engineers, Louisville District, who is responsible by contract for executing the environmental cleanup on the Marion (Ohio) Local Training Area (LTA) on behalf of the 88th Regional Readiness Command, are hereby delegated signature authority to sign any and all documents that may be required to effect that cleanup, including, but not limited to, any documents that may be required to process any hazardous wastes that are generated during site remediation at the Marion LTA. Those documents may include, but are not limited to, any permits, licenses, or manifests that are required by the Comprehensive Environmental Response, Compensation and Liability Act or the Resource Conservation and Recovery Act.

2. This delegation of authority is made for a period of one year beginning on 1 August 2007. However, this delegated authority may be cancelled or withdrawn at any time. Also, upon change of the Environmental Division Chief, all delegations are subject to review by the new Division Chief, who may choose to cancel or change some delegations. The POC at this headquarters for this action is Ms. Lisa Gulbranson (tel. 612.713.3752) or Mr. Martin Pansch (tel. 612.713.3505).

FOR THE COMMANDER:

A handwritten signature in black ink, appearing to read "M. Pansch".

MARTIN PANSCH  
Acting Chief, Environmental Division  
88th Regional Readiness Command

CF:

Commander, US Army Environmental Command, ATTN: SFIM-AEC-CD-E/Rich Mendoza, 1  
Rock Island Arsenal, Rock Island, IL 61299  
Commander, US Army Corps of Engineers, Omaha District, ATTN: Ms. Heidi Novotny, 106  
South 15th Street, Omaha, NE 68102-1618

89114

0709569

COC No. A **76031** 156 Starlite Drive  
Marietta, OH 45750

Phone: 740-373-4071  
Fax: 740-373-4835



CHAIN-OF-CUSTODY RECORD

Company Name: <b>Kemron</b>		Contact Phone #: <b>740-373-4308</b>		Project Name: <b>Marion Army Depot</b>		Signature: <b>Jessica Harris</b>		Protocol		Program	
Project Contact: <b>Mary Lou Rochette</b>		Location: <b>Marion, OH</b>		Project Name: <b>Marion Army Depot</b>		Signature: <b>Jessica Harris</b>		CWA		NPDES <input type="checkbox"/>	
Turn Around Requirements: <b>3 days</b>		Project Name: <b>Marion Army Depot</b>		Signature: <b>Jessica Harris</b>		CWA		SW846		AFCEE <input type="checkbox"/>	
Project #: <b>W005-AB-003</b>		Project Name: <b>Marion Army Depot</b>		Signature: <b>Jessica Harris</b>		CWA		SW846		RCRA <input type="checkbox"/>	
Sampler (print): <b>Jessica Harris</b>		Project Name: <b>Marion Army Depot</b>		Signature: <b>Jessica Harris</b>		CWA		SW846		USAGE <input type="checkbox"/>	
Sample I.D. No.		Date		Time		Grab		Comp*		Other <input type="checkbox"/>	
Treated SP-1		9/21/07		0850		X		X		ADDITIONAL REQUIREMENTS	
Treated SP-2		9/21/07		0855		X		X			
Treated SP-1A		9/21/07		0825		X		X			
Treated SP-2A		9/21/07		0835		X		X			
Trip blank		8/13/07		0839		X		X			
Treated SP-EB		9/21/07		0900		X		X			
Relinquished by: <b>Jessica Harris</b>		Date: <b>9/21/07</b>		Time: <b>0815</b>		Received by: <b>Kenneth Burton</b>		Date: <b>9-21-07</b>		Time: <b>1230</b>	
Relinquished by: <b>Jessica Harris</b>		Date: <b>9/21/07</b>		Time: <b>0815</b>		Received for Laboratory by: <b>Eun Edeon</b>		Date: <b>9-21-07</b>		Time: <b>1230</b>	
Remarks:		Cooler Temp in °C		Date		Time		Date		Time	

\*Homogenize all composite samples prior to analysis



**GENERATOR WASTE PROFILE SHEET**

Requested Disposal Facility:

COUNTY ENV. LANDFILL of  
WYANDOT, CAREY, OHIO  
an Allied Waste Company

Waste Profile #
AWI Sales Rep:
Date:

**I. Generator Information**

Generator Name: <u>88<sup>th</sup> REGIONAL READINESS COMMAND</u>			
Generator Site Address: <u>1/2 MILE EAST OF PATTON PIKE AND POLE LANE Rd INTERSECTION, ON PATTON PIKE</u>			
City: <u>MARION</u>	County: <u>MARION</u>	State: <u>OHIO</u>	Zip: <u>53307</u>
State ID/Reg No: <u>OHRC00036269</u>	State Approval/Waste Code:	(if applicable)	SIC Code: <u>9711</u>
Generator Mailing Address (if different): <u>506 ROEDER CIRCLE</u>			
City: <u>FOOT SNELLING</u>	County: <u>HENNEPIN</u>	State: <u>MIN.</u>	Zip: <u>55111</u>
Generator Contact Name: <u>MARTIN PANSEN</u>			
Phone Number: <u>(612) 713-3505</u>		Fax Number: <u>(612) 713-3516</u>	

**IIa. Transporter Information**

Transporter Name: <u>ROBBIE D. WOOD TRUCKING</u>		Contact Name: <u>STEVE TENEMEIER</u>	
Transporter Address: <u>1051 OLD WARRIOR RIVER RD</u>			
City: <u>DOLomite</u>	County:	State: <u>AL</u>	Zip: <u>35061</u>
Phone Number: <u>678 427 8402</u>	Fax Number:	State Transportation Number: <u>ALD067138891</u>	

**IIb. Billing Information**

Bill To: <u>KEMRON ENV SERVICES</u>		Contact Name: <u>GARY ROGERS</u>	
Billing Address: <u>1359-A ELLSWORTH ZND BLVD</u>			
City: <u>Atlanta</u>	State: <u>GA</u>	Zip: <u>30318</u>	Phone Number: <u>404 601 6916</u>

**III. Waste Stream Information**

Name of Waste: <u>SOIL AND DEBRIS</u>
Process Generating Waste: <u>SOIL EXCAVATION ACTIVITIES @ MARION ARMY DEPOT ENVIRONMENTAL REMEDIATION OF SOIL, CONTAINING LEAD, ARSENIC, ROOFING MATERIAL, CONCRETE, WOOD, METAL DEBRIS - DRUM CARCASS MATERIAL</u>
Type of Waste: <input type="checkbox"/> INDUSTRIAL PROCESS WASTE or <input checked="" type="checkbox"/> POLLUTION CONTROL WASTE
Physical State: <input checked="" type="checkbox"/> SOLID <input type="checkbox"/> SEMI-SOLID <input type="checkbox"/> POWDER <input type="checkbox"/> LIQUID <input type="checkbox"/> OTHER: _____
Method of Shipment: <input type="checkbox"/> BULK <input type="checkbox"/> DRUM <input type="checkbox"/> BAGGED <input type="checkbox"/> OTHER: <u>ROLL OFF BOX 20 CY</u>
Estimated Annual Volume: <input checked="" type="checkbox"/> CUBIC YARDS: <u>40</u> <input type="checkbox"/> TONS: _____ <input type="checkbox"/> GALLONS _____ <input type="checkbox"/> OTHER: _____
Frequency: <input checked="" type="checkbox"/> ONE TIME <input type="checkbox"/> DAILY <input type="checkbox"/> WEEKLY <input type="checkbox"/> MONTHLY <input type="checkbox"/> OTHER: _____
Special Handling Instructions: <u>AVOID BERMAL CONTACT, UTILIZE BEST MGMT PRACTICES FOR JUST</u>

**IV. Representative Sample Certification**

Is the representative sample collected to prepare this profile and laboratory analysis, collected in accordance with U.S. EPA 40 CFR 261.20(c) guidelines or equivalent rules?		<input checked="" type="checkbox"/> YES or <input type="checkbox"/> NO
Sample Date: <u>8/16/07</u>	Type of Sample: <input checked="" type="checkbox"/> COMPOSITE SAMPLE <input type="checkbox"/> GRAB SAMPLE	
Laboratory: <u>Kemron Environmental Lab</u>	Sample ID Numbers: <u>HW-8/16</u>	
Sampler's Employer: <u>Kemron Environmental Services</u>	Signature: <u>Jessica Harris</u>	
Sampler's Name (printed): <u>Jessica Harris</u>		

NO SAMPLE TAKEN



**GENERATOR WASTE PROFILE SHEET (continued)**

Waste Profile #

**V. Physical Characteristics of Waste**

Characteristic Components		% by Weight (range)				
1.	95 % SOIL					
2.	5 % DEBRIS					
3.						
4.						
5.						

Color	Odor (describe)	Free Liquids <input type="checkbox"/> YES or <input checked="" type="checkbox"/> NO Content %	% Solids	pH:	Flash Point	Phenol
BROWN / BLACK	NONE			7.98	> 90 °F	ppm

**Attach Laboratory Analytical Report (and/or Material Safety Data Sheet) Including Required Parameters Provided for this Profile**

Does this waste or generating process contain regulated concentrations of the following Pesticides and/or Herbicides: Chlordane, Endrin, Heptachlor (and its epoxides), Lindane, Methoxychlor, Toxaphene, 2,4-D, or 2,4,5-TP Silvex as defined in 40 CFR 261.33?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does this waste or generating process cause it to exceed OSHA exposure limits from high levels of Hydrogen Sulfide or Hydrogen Cyanide as defined in 40 CFR 261.23?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does this waste contain regulated concentrations of Polychlorinated Biphenyls (PCBs) as defined in 40 CFR Part 761?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does this waste contain regulated concentrations of listed hazardous wastes defined in 40 CFR 261.31, 261.32, 261.33, including RCRA F-Listed Solvents?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does this waste contain regulated concentrations of 2,3,7,8-Tetrachlorodibenzodioxin (2,3,7,8-TCDD), or any other dioxin as defined in 40 CFR 261.31?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Is this a regulated Toxic Material as defined by Federal and/or State regulations?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Is this a regulated Radioactive Waste as defined by Federal and/or State regulations?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Is this a regulated Medical or Infectious Waste as defined by Federal and/or State regulations?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Is this waste generated at a Federal Superfund Clean Up Site?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No

**VI. Generator Certification**

I hereby certify that to the best of my knowledge and belief, the information contained herein is a true, complete and accurate description of the waste material being offered for disposal and all known or suspected hazards have been disclosed. All Analytical Results/Material Safety Data Sheets submitted are truthful and complete and are representative of the waste. I further certify that by utilizing this profile, neither myself nor any other employee of the company will deliver for disposal or attempt to deliver for disposal any waste which is classified as toxic waste, hazardous waste or infectious waste, or any other waste material this facility is prohibited from accepting by law. I shall immediately give written notice of any change or condition pertaining to the waste not provided herein. Our company hereby agrees to fully indemnify this disposal facility against any damages resulting from this certification being inaccurate or untrue. I further certify that the company has not altered the form or content of this profile sheet as provided by Allied Waste.

<i>Donald E Casey</i> Authorized Representative Name And Title (Printed)	<i>88th Regional Readiness Command</i> Company Name
<i>Donald E Casey</i> Authorized Representative Signature	<i>8/24/07</i> Date

**VII. Allied Waste Decision**

<input type="checkbox"/> Approved	<input type="checkbox"/> Rejected	Expiration: _____
Conditions:		
_____	_____	_____
Name, Title	Signature	Date

COC No. A 76021

156 Starlite Drive  
Marietta, OH 45750



Phone: 740-373-4071  
Fax: 740-373-4835

CHAIN-OF-CUSTODY RECORD

Company Name: <i>Kemron</i>		Contact Phone #: <i>404-435-3962</i>		Location: <i>Marion, OH</i>		Project Name: <i>Marion Army Depot</i>		Signature: <i>Jessica Harris</i>		Protocol													
Project Contact: <i>Gary Rogers</i>		Turn Arouhd Requirements: <i>3 days</i>		Project #: <i>W005-AB-003</i>		Sampler (print): <i>Jessica Harris</i>		Date: <i>8/16/07</i>		Time: <i>1630</i>													
Sample I.D. No. <i>HW-8/16</i>	Comp. <input checked="" type="checkbox"/>	Grab	NUMBER OF CONTAINERS <i>2</i>		Hold	TCLP Metals	TCLP Volatiles	TCLP Semi. Vol.	RCAH Metals	Mercury	PCBs	Pesticides/Herbicides	% Solids	Flask	PH	GN	Sulfides (soluble)	Time	Date	Received by: (Signature)	Time	Date	Received by: (Signature)
ADDITIONAL REQUIREMENTS <i>Waste Characterization</i>																							
Program <input type="checkbox"/> NPDES <input type="checkbox"/> AFCEE <input type="checkbox"/> RCRA <input type="checkbox"/> USAGE <input type="checkbox"/> Other																							
Relinquished by: (Signature) <i>Jessica Harris</i>		Date <i>8/17/07</i>		Time <i>0900</i>		Received by: (Signature)		Date		Time		Relinquished by: (Signature)		Date		Time		Cooler Temp in °C		Remarks:			
Relinquished by: (Signature) <i>Jessica Harris</i>		Date <i>8/17/07</i>		Time <i>0900</i>		Received for Laboratory by: (Signature)		Date		Time		Relinquished by: (Signature)		Date		Time		Cooler Temp in °C		Remarks:			

\*Homogenize all composite samples prior to analysis

Aug 29 2007 13:36

HOLIDAY INN EXPRESS

7403865152

p. 2



### ASBESTOS WASTE PROFILE SHEET

Requested Disposal Facility: COUNTY ENVIRONMENTAL LANDFILL  
OF MASSACHUSETTS, CAREY OHIO  
an Allied Waste Company

Waste Profile # \_\_\_\_\_

Date: 8-28-07

#### I. GENERATOR INFORMATION

Generator Name: <u>85th REGIONAL READINESS COMMAND</u>			
Generator Site Address: <u>1/2 MILE EAST OF INTERSECTION OF PATTON PIKE AND POLE LANE ROAD ON PATTON</u>			
City: <u>MARION</u>	County: <u>MARION</u>	State: <u>OHIO</u>	Zip: <u>43302</u>
Generator Mailing Address (if different): <u>506 ROEDER CIRCLE</u>			
City: <u>FORT SNELLING</u>	County: <u>HENNINGEN</u>	State: <u>MN.</u>	Zip: <u>55111</u>
Generator Contact Name: <u>MARTIN PAULSEN</u>			
Phone Number: <u>(612) 713-3505</u>		Fax Number: <u>(612) 713-3516</u>	

#### II. CONTRACTOR/OPERATOR INFORMATION (IF APPLICABLE)

Contractor Company Name and Address: <u>KEMRON ENVIRONMENTAL</u> <u>1259-A ELSWORTH IND BLVD</u> <u>ADAMSVILLE GA 30218</u>		Contact Name, Phone Number, and Fax Number Contact: <u>GARY ROGERS</u> Phone Number: <u>404 601 6916</u> <u>404 435 3962</u> Fax Number: <u>404 636 7162</u>	
--	--	---	--

#### III. TRANSPORTATION INFORMATION

Method of Shipment:  BULK  DRUM  BAGGED  OTHER: ROLL OFF BOX

Frequency:  ONE TIME  DAILY  WEEKLY  MONTHLY  
 QUARTERLY  SEMI-ANNUALLY  OTHER:

Project Term: 3 MONTHS Total Volume: 40 (cubic yards)

Transporter Name and Address: <u>ALLIED WASTE</u> <u>11604 COUNTY ROAD #4</u> <u>CAREY OHIO 42316</u>		Contact Name, Phone Number, and Fax Number Contact: <u>GLENN TAYLOR</u> Phone Number: <u>(937) 593-3506</u> Fax Number: <u>419 396-3426</u>	
--	--	--	--

#### IV. PHYSICAL CHARACTERISTICS OF WASTE:

Waste Description:

This Asbestos Waste is:  FRIABLE  NON-FRIABLE

This Asbestos Waste is from:  RENOVATION  DEMOLITION  REMEDIATION (SOIL)

Special Handling Instructions: INHALATION HAZARD

Asbestos content (if available): \_\_\_\_\_ ppm TRANSITE PANELS

#### V. GENERATOR CERTIFICATION

I hereby certify that to the best of my knowledge and belief, the information contained herein is a true and accurate description of the waste material being offered for disposal. I further certify that by utilizing this profile, neither myself nor any other employee of the company will deliver for disposal or attempt to deliver for disposal my waste which is classified as toxic waste, hazardous waste or infectious waste, or any other waste material this facility is prohibited from accepting by law. Our company hereby agrees to fully indemnify this disposal facility against any damages resulting from this certification being inaccurate or untrue. I further certify that the company has not altered the form or content of this profile sheet as provided by Allied Waste Industries, Inc.

Donald E Casey Construction Representative 85th Regional Readiness Command  
 AUTHORIZED REPRESENTATIVE NAME AND TITLE (Printed) COMPANY NAME

Donald E Casey 8/29/07  
 AUTHORIZED REPRESENTATIVE SIGNATURE DATE

#### VI. ALLIED WASTE DECISION

Approved  Rejected Expiration: 12/31/07

Conditions: \_\_\_\_\_

X MARK O'BRIEN C.E.M X [Signature] X 8-29-07  
 Name Title Signature Date



COMMERCIAL TIRE SERVICE • BRAKES • BATTERIES  
 CUSTOMERS | PO Box 406010  
 REMIT TO: | ATLANTA, GA 30384-6010

2007 LOOSE LOOSE  
 License:  
 Mileage:  
 Lug Torque  
 Tire Infl P/R NA NA

\*\*\*\* I N V O I C E \*\*\*\*

Cert#  
 NATL TIRE&BAT #263  
 MARION OHIO STORE  
 1622 MARION MT GILEAD RD  
 740 389-4266  
 Customer: 20099880  
 KEMRON ENVIRONMENTAL SERVICES  
 1359 A HILLSWORTH INDUSTRIAL BLVD  
 ATLANTA GA 30318  
 Home# 404-636-0928 Work#  
 Addl Repairs may be authorized by

Invoice# 14398937 - RI  
 Order Num 76941759 - WI  
 Page - 1  
 Opening Salesperson 12929266  
 Date/Time In..... 09/20/07 12:31:36  
 Date/Time Out..... 09/20/07 12:34:24  
 Ship To:

VIN# PO#:

Item Number	Item Description	Qty	Price Each	Extended
TDC	Tire Disposal Charge	20	3.00	60.00
AMX	Am. Express Card			63.90-
	CARD NUMBER 1004 APPR 526589			

IF YOU HAVE A QUESTION OR CONCERN PLEASE TALK TO  
 OUR STORE MANAGER, JOHN D. ALLEN  
 AT (740) 389-4266

PLEASE READ CAREFULLY, CHECK ONE OF THE STATEMENTS  
 BELOW AND SIGN:  
 I UNDERSTAND THAT, UNDER STATE LAW, I AM ENTITLED TO A  
 WRITTEN ESTIMATE IF MY FINAL BILL WILL EXCEED \$100.  
 I REQUEST A WRITTEN ESTIMATE.  
 I DO NOT REQUEST A WRITTEN ESTIMATE AS LONG AS THE  
 REPAIR COSTS DO NOT EXCEED \$ \_\_\_\_\_.  
 THE SHOP MAY NOT EXCEED THIS AMOUNT WITHOUT MY  
 WRITTEN OR ORAL APPROVAL.  
 I DO NOT REQUEST A WRITTEN ESTIMATE  
 SIGNED \_\_\_\_\_ DATE \_\_\_/\_\_\_/\_\_\_

Special Credit:

Total Charges..	60.00
Total Credits..	.00
Sub-Total.....	60.00
New Tire Fees**	.00
Shop Fees(*)	.00
All Taxes.....	3.90
Payments.....	63.90-
Net Amount.....	.00

I AUTHORIZE SERVICE TO BE PERFORMED, INCLUDING SUBLET WORK PER THE TERMS  
 AND CONDITIONS ON THE REVERSE "CUSTOMER COPY" OF THIS FORM. TIRE KINGDOM  
 USES BOTH FLAT RATE AND HOURLY RATE TO CALCULATE CHARGES.  
 I DO \_\_\_\_\_ DO NOT \_\_\_\_\_ WANT MY PARTS RETURNED

PLEASE PAY ABOVE AMOUNT.  
 THANK YOU! Closer:12929266

PROPOSED METHOD OF PAYMENT, CASH \_\_\_\_\_ CHECK \_\_\_\_\_ CREDIT CARD \_\_\_\_\_  
 CHARGES REPRESENT COST/PROFIT TO THE VEHICLE REPAIR FACILITY. MISC. SHOP SUPPLY OR WASTE DISPOSAL  
 PLEASE SEE REVERSE SIDE FOR WARRANTY, TERMS, CONDITIONS AND OTHER IMPORTANT INFORMATION

CUSTOMER COPY

**APPENDIX D**  
**CORRESPONDENCE**



State of Ohio Environmental Protection Agency

## STREET ADDRESS:

Lazarus Government Center  
50 W. Town St., Suite 700  
Columbus, Ohio 43215

TELE: (614) 644-3020 FAX: (614) 644-3184  
www.epa.state.oh.us

## MAILING ADDRESS:

P.O. Box 1049  
Columbus, OH 43216-1049

May 23, 2007

US Army Reserve, 88<sup>th</sup> RRC  
Attn: David Moore  
506 Roeder Circle  
Ft. Snelling, MN 55111

RE: Pre-Activity Notification (SWIMS ID# 073097)  
Project: Marion USARC LTA Removal Action

Dear Mr. Moore:

On April 10 2007, the Director of the Ohio EPA, pursuant to Ohio Revised Code (ORC) Section 6111.021 issued the Ohio General Permit for filling Category 1 and Category 2 Isolated Wetlands. The permit is available on the Ohio EPA web site at: <http://www.epa.state.oh.us/dsw/401/IWP.html>

The Isolated Wetland Permit Application that you submitted with additional information received on May 15, 2007 was found to be complete and you may proceed with the above referenced project. Please note that you are required to abide by all of the provisions of the general permit, specifically the permit conditions listed in Part III and the mitigation requirements listed in Part IV. The mitigation proposal for isolated wetland impacts includes the restoration of 0.537 acres of wetlands on-site. Please notify the agency in writing once the wetland mitigation has been completed.

Per ORC Section 6111.022 (E) and Part V of the General Permit, the proposed filling of the isolated wetland must be completed within two years of the date of this permit. If you do not complete the filling within this two year period, you must submit a new pre-activity notice (PAN) to Ohio EPA.

If you have any questions, please contact me at 614-644-2012

Sincerely,

Jeff Boyles  
401 Reviewer  
Division of Surface Water

cc: Kemron, Attn: Mary Lou Rochotte 156 Starlite Drive, Marietta, OH 45750

Ted Strickland, Governor  
Lee Fisher, Lieutenant Governor  
Chris Korleski, Director

Ohio EPA is an Equal Opportunity Employer



State of Ohio Environmental Protection Agency

Southwest District

401 East Fifth Street  
Dayton, Ohio 45402-2911

TELE: (937)285-6357 FAX: (937)285-6248  
www.epa.state.oh.us

Ted Strickland, Governor  
Lee Fisher, Lieutenant Governor  
Chris Korleski, Director

June 26, 2007

Mary Lou Rochette  
Project Manager  
Kemron Environmental Services, Inc.  
156 Starlite Drive  
Marietta, Ohio 45750

**RE: Ohio EPA Review of Draft Final Removal Action Work Plan, U.S. Army Reserve Local Training Area (LTA), Marion, Ohio**

Dear Ms. Rochette:

Ohio EPA has completed our review of the *Draft Final Removal Action Work Plan, U.S. Army Reserve Local Training Area (LTA), Marion, Ohio*, which was received on April 25, 2007. Our comments are listed below:

**General Comments:**

1. As stated in previous correspondence and conference calls, Ohio EPA's risk goal is a cumulative hazard index of 1 and cumulative carcinogenic risk of 1E-5 based on the intended use of the site. The Army Reserves has stated that they want to remediate the site consistent with a commercial/industrial use, even though the site will only be used for Army Reserve training. Therefore, the Army Reserves proposed remediation goals for the three chemicals of concern (arsenic, lead, and benzo (a) pyrene) based on this future reuse. However, instead of using a cumulative 1E-5 goal to determine the remediation goals, the Army instead based their cleanup goals on a cumulative 1E-4 goal based on commercial industrial use.

Ohio EPA will not concur in the Action Memo or the Removal Action if the cleanup standards established for the Marion LTA area are based on a cumulative risk goal of 1E-4 for this reuse. This goal is not only inconsistent with Ohio EPA's risk goal for remediation of sites, but it also is inconsistent with those goals established for the former RVS property immediately adjacent to the Marion AREES LTA-15 and LTA-16.

If the Army Reserves wants Ohio EPA concurrence on these two documents, they have the following options:

- a. The Army Reserves can revise the removal action goals to be consistent with cumulative 1E-5 goal for commercial/industrial use. Based on the limits of excavation, it appears that the Army Reserves proposed action will meet this goal for the three AREES. For LTA-01, as levels above the standard of 19 mg/kg are co-located with areas that will be removed to meet Pb cleanup standards except KMW02-B (6-8 feet). For LTA 15/16, all detections of as above the standard of 19 are co-located with Pb areas that will be removed. Since remediation standards are based on exposure units and not single sampling locations, it appears that the Army Reserve can easily meet the Ohio EPA's remediation goal of 1E-5 for commercial/industrial use for As, Pb, and benzo(a) pyrene.
  - b. The Army Reserves could change the removal action goal to be consistent with Reserves proposed training at the site (including ensuring that a cumulative 1E-5 risk goal is met for this use), and restrict the site to Reservist training only. The removal action goals for the Reservist would allow higher levels of soil contamination to remain on site, since the only exposure factor that differs would be exposure duration (6 years for the Reservist versus 25 years for commercial/industrial exposure). However, if the Marion LTA was determined to be excess federal property and proposed for transfer, the Army Reserves would need to evaluate if additional response actions are necessary before the property can be transferred to private use.
2. In the Final Engineering Evaluation/Cost Analysis for the Marion LTA site, the Army Reserves stated that the waste present at each AREE was located in within 3 feet of the surface. The selected removal action included the removal of waste material from the three AREES (LTA-1, LTA-15, and LTA-16) and does not discuss residual waste material remaining on-site. The work plan lists a planned depth of excavation for each area, and states that the excavation may be continued if waste or visual soil contamination is found at the limit of planned excavation. However, it does not state what will happen if waste remains at the site once the excavation is terminated. Will the area be restricted from digging? Will it be assessed further for a proposed final action? Please clarify.
  3. Asbestos issue. If asbestos fibers are detected in the confirmation sampling, this waste material either must be removed or contained (with the associated

restriction against digging within these areas). The work plan needs to be modified accordingly.

4. Confirmation sampling after the removal action is completed. According to the Action Memorandum, there are three contaminants of concern listed at LTA-1, LTA-15, and LTA-16: arsenic, lead, and benzo(a) pyrene. Confirmation samples should be analyzed for each COC to demonstrate removal cleanup levels have been met. The RA WP only lists confirmation sampling for lead and benzo (a) pyrene. Please add arsenic to the parameter list.

**Specific Comments:**

1. Page 22, fourth complete paragraph, second sentence. The text states that any identified potential roost trees for the Indiana Bat will be removed prior to April 15. The work plan was not submitted to Ohio EPA until April 25. Were roost trees removed before the work plan was submitted, or will the Army delay the removal action until after September 15 (when these trees can be safely removed?) Please discuss.
2. Page 29, second complete paragraph. The text states that truck tires will be dry cleaned. Please clarify what is meant by "dry cleaning."
3. Page 34, eighth complete paragraph. The text states that two methods may be used to remove visible surface debris – dry brushing or powered vehicle washing equipment. Since powered vehicle washing requires containment of decontamination fluids (e.g. construction of a temporary sump and a decontamination area), the Army should include construction details for the sump in this work plan. Please include this information in the revised work plan for Ohio EPA review.
4. Page 35, first complete paragraph. Transportation routes of trucks entering and leaving the site need to be identified and provided for public review. The public may have specific concerns regarding the transportation of waste and contaminated soil from the Marion LTA. The Army should be able to present their proposed route and be ready to address citizen concerns during the meeting on June 25. Delaying submittal of this information will not allow these issues to be addressed, and my cause concerns with the community and RAB members.
5. Page 36, Current and Potential Future Land Use. Since use of the property will be restricted, the Army needs to detail how the restrictions will be monitored,

Mary Lou Rochette  
Project Manager  
Kemron Environmental Services, Inc.  
June 26, 2007  
Page 4

maintained, and enforced. This includes any reporting of violations of land use controls. Since this work plan covers the removal action and not the final remedy, LUCS necessary here are only those needed until the final remedy can be implemented. However, final LUCS must be addressed in the Decision Document for the Marion LTA facility, or Ohio EPA will not concur that all response actions necessary at the Marion LTA have been completed.

6. Appendix A, Page 1, second complete paragraph. Unfiltered samples for metals analysis are required to demonstrate that the ground water has not been impacted by the excavation and removal of waste. Please clarify that unfiltered samples for metals will be collected.

Please incorporate the above comments into the draft final Removal Action Work Plan and submit the revised document for agency review.

If you have any questions, please contact me at (937) 285-6489.

Sincerely,



Bonnie B. Buthker  
Federal Facilities Section  
Division of Emergency and Remedial Response

CC: Paul Jayko, DERR/NWDO  
Archie Lunsey, DERR/NWDO  
Lisa Gulbranson, 88<sup>th</sup> RRC  
Rich Mendoza, USAEC ROM  
Don Millard, Marion RAB  
Jim McQuire, Marion RAB

BBB/plh



DEPARTMENT OF THE ARMY  
HEADQUARTERS, 88TH REGIONAL READINESS COMMAND  
506 ROEDER CIRCLE  
FORT SNELLING, MINNESOTA 55111-4009

REPLY TO  
ATTENTION OF

ARRC-CMN-EN

31 July 2007

MEMORANDUM FOR DONALD E. CASEY, US Army Corps of Engineers, Louisville District, 600 Dr. Martin Luther King, Jr. Place, Louisville, KY 40202-2232.

SUBJECT: Delegation of Signature Authority

1. You, in your capacity as the official of the US Army Corps of Engineers, Louisville District, who is responsible by contract for executing the environmental cleanup on the Marion (Ohio) Local Training Area (LTA) on behalf of the 88th Regional Readiness Command, are hereby delegated signature authority to sign any and all documents that may be required to effect that cleanup, including, but not limited to, any documents that may be required to process any hazardous wastes that are generated during site remediation at the Marion LTA. Those documents may include, but are not limited to, any permits, licenses, or manifests that are required by the Comprehensive Environmental Response, Compensation and Liability Act or the Resource Conservation and Recovery Act.

2. This delegation of authority is made for a period of one year beginning on 1 August 2007. However, this delegated authority may be cancelled or withdrawn at any time. Also, upon change of the Environmental Division Chief, all delegations are subject to review by the new Division Chief, who may choose to cancel or change some delegations. The POC at this headquarters for this action is Ms. Lisa Gulbranson (tel. 612.713.3752) or Mr. Martin Pansch (tel. 612.713.3505).

FOR THE COMMANDER:

A handwritten signature in black ink, appearing to read "Martin Pansch", is written over a horizontal line.

MARTIN PANSCH  
Acting Chief, Environmental Division  
88th Regional Readiness Command

CE:

Commander, US Army Environmental Command, ATTN: SFIM-AFC-CD-E/Rich Mendoza, 1  
Rock Island Arsenal, Rock Island, IL 61299

Commander, US Army Corps of Engineers, Omaha District, ATTN: Ms. Heidi Novomy, 106  
South 15th Street, Omaha, NE 68102-1618



DEPARTMENT OF THE ARMY  
HEADQUARTERS, 88<sup>TH</sup> REGIONAL READINESS COMMAND  
506 ROEDER CIRCLE  
FORT SNELLING, MINNESOTA 55111-4009

October 29, 2007

Deputy Chief of Staff Engineer

Ms. Rebecca Rutherford  
Chief, North Regulatory Section  
US Army Corps of Engineers  
Attn: CELRH-OR-F  
502 8<sup>th</sup> Street  
Huntington, WV 25701-2070

RE: Notice of Completion of Non-Time-Critical Removal Action, U.S. Army Reserve Local Training Area (LTA), Marion, Ohio

Dear Ms. Rutherford:

On 11 June 2007, the US Army Reserve 88<sup>th</sup> Regional Readiness Command (RRC) submitted the substantive elements of the USACE Form 4345, providing coverage under the Nationwide Permit for potential installation of temporary culverts during a Non-Time-Critical Removal Action (NTCRA). The NTCRA was executed under the authority of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) at the 88<sup>th</sup> RRC's Local Training Area located in Marion, Ohio.

The Army's contractor was able to complete the NTCRA without installation of any temporary culverts. The contractor has demobilized from the site as of 20 October 2007.

This letter is being provided to the USACE as notification that the culvert installations as described in and covered under the previously submitted Form 4345 were not implemented, and that coverage under the Form 4345 submittal is concluded due to completion of this CERCLA NTCRA project.

Please contact Ms. Lisa Gulbranson of the 88<sup>th</sup> RRC at (612) 713-3752 with questions.

Sincerely,

A handwritten signature in black ink, appearing to read "David Moore", is written over a circular stamp.

DAVID MOORE

Chief, Environmental Division  
88<sup>th</sup> Regional Readiness Command

cc: Rich Mendoza – USAEC ROM  
Heidi Novotny – USACE, COTR  
Danny Walsh – USAEC Contractor Representative  
Lisa Gulbranson – 88<sup>th</sup> RRC  
Paul Jayko – Ohio EPA, Northwest District Office  
Mary Lou Rochotte – KEMRON Project Manager  
Tracy Bergquist – KEMRON GFPR Program Manager  
Lou Ehrhard – KEMRON GFPR Assistant Program Manager



DEPARTMENT OF THE ARMY  
HEADQUARTERS, 88TH REGIONAL READINESS COMMAND  
506 ROEDER CIRCLE  
FORT SNELLING, MINNESOTA 55111-4009

October 29, 2007

Deputy Chief of Staff Engineer

Mr. Paul Jayko  
Ohio Environmental Protection Agency, DERR  
347 N. Dunbridge Road  
Bowling Green, OH 43402

RE: Submission of Notice of Termination for U.S. Army Reserve Local Training Area (LTA),  
Marion, Ohio

Dear Mr. Jayko:

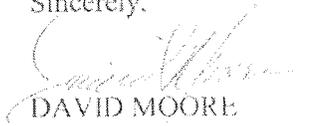
Enclosed, please find the completed Notice of Termination (NOT) for the CERCLA Non-Time-Critical Removal Action (NTCRA) conducted at the U.S. Army Reserve Local Training Area (LTA), Marion, Ohio. The NOT is being submitted in conformance to the substantive requirements of the storm water program. The Notice of Intent was submitted to Ohio EPA in June 2007, with correspondence dated 11 June 2007.

As you are aware, the NTCRA has been completed and the Army's contractor demobilized from the site as of 20 October 2007. Seeding has been conducted in all NTCRA work areas. Vegetation has been established in LTA-01 and LTA-15. These two specific areas had silt fence installed and maintained per the project Storm Water Pollution Prevention Plan and Final Removal Action Work Plan to protect site streams. Though vegetation has been established within LTA-01, silt fencing is being left in place in this work area as a protective measure due to the immediate proximity to site streams LTA-OD1 and LTA-OD2. This silt fencing will be removed by the Army's contractor in spring 2008. Silt fencing in the vicinity of LTA-15 has been removed as part of site demobilization. Work area LTA-16 is not hydraulically connected to site streams. Wetland seed has been applied, and shrub and tree planting will occur per the wetland mitigation plan. The shrub and tree planting is scheduled to occur by early November 2007.

This NOT is being submitted within thirty (30) days of final stabilization as specified by the storm water regulations and standards to conform to ARARs for the Marion LTA CERCLA NTCRA.

Please contact Ms. Lisa Gulbranson of the 88<sup>th</sup> RRC at (612) 713-3752 with questions.

Sincerely,



DAVID MOORE

Chief, Environmental Division

88<sup>th</sup> Regional Readiness Command

cc w/Enclosure: Bonnie Buthker – Ohio EPA, DERR-OFFO, Southwest District Office  
Lynette Hablitzel – Ohio EPA, DSW, Northwest District Office  
Danny Walsh – USAEC Contractor Representative  
Lisa Gulbranson – 88<sup>th</sup> RRC

cc w/o Enclosure: Rich Mendoza – USAEC ROM  
Heidi Novotny – USACE, COTR  
Mary Lou Rochotte – KEMRON Project Manager  
Tracy Bergquist – KEMRON GFPR Program Manager  
Lou Ehrhard – KEMRON GFPR Deputy Program Manager



Notice of Termination (NOT) of Coverage Under Ohio  
Environmental Protection Agency General Permit

(Read accompanying instructions carefully before completing this form)

Submission of this NOT constitutes notice that the party identified in Section II of this form is no longer authorized to discharge into state waters under the NPDES general permit program. NOTE: All necessary information must be provided on this form. Do not use correction fluid on this form. Forms transmitted by fax will not be accepted. There is no fee associated with submitting this form.

I. Permit Information:

NPDES general permit number: OH C000002 Facility General Permit Number: \_\_\_\_\_

II. Owner/Applicant Information/Mailing Address:

Company Name: US Army Reserve, 88th Regional Readiness Command  
 Contact Person: David Moore Phone: (612) 713-3051  
 Mailing Address: 506 Roeder Circle  
 City: Ft. Snelling State: MN Zip Code: 55111

II. Facility/Site Location Information:

Facility Name: Marion Local Training Area  
 Facility Contact Person: Mary Lou Rochotte Phone: (740) 373-4308  
 Facility Address/Location: 3007 Harding Highway East  
 City: Marion State: Ohio Zip Code: 43302  
 County: Marion Township: Claridon Section: 17, 18, 19

IV. Reason for Termination:

\_\_\_\_\_ Transfer of Ownership \_\_\_\_\_ Cease to Discharge \_\_\_\_\_ Facility Closed  Project Completed  
 \_\_\_\_\_ Obtained Individual Permit

Standard Certification:

*I certify under penalty of law that all discharges authorized by the NPDES general permit have been eliminated or that I am no longer the operator of the facility. I understand that by submitting this NOT, I am no longer authorized to discharge under this general permit and that discharging pollutants to waters of the state without a NPDES permit is unlawful under ORC 6111.*

Name (typed): \_\_\_\_\_  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Industrial Storm Water and Coal Mining Activity Certification Only:

*I certify under penalty of law that all discharges associated with the identified facility that are authorized by the above referenced NPDES general permit have been eliminated, that I am no longer the operator of the facility, or in the case of a coal mine that the SMCRA bond has been released by ODNR-Division of Reclamation. I understand that, by submitting this NOT, I am no longer authorized to discharge storm water associated with industrial activity under this general permit, and that all discharging pollutants in storm water associated with industrial activity to waters of the state is unlawful under ORC 6111 where the discharge is not authorized by a NPDES permit.*

Name (typed): \_\_\_\_\_  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Storm Water Construction Activity Certification Only:

*I certify under penalty of law that all elements of the storm water pollution prevention plan have been completed, the disturbed soil at the identified facility have been finally stabilized and temporary erosion and sediment control measures have been removed or will be removed at an appropriate time, or that all storm water discharges associated with construction activity from the identified facility that are authorized by the above referenced NPDES general permit have otherwise been eliminated. I understand that, by submitting this NOT, I am no longer authorized to discharge storm water associated with construction activity by the general permit, and that discharging pollutants in storm water associated with construction activity to waters of the state is unlawful under ORC 6111 where the discharge is not authorized by a NPDES permit.*

Name (typed): \_\_\_\_\_  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Gary Rogers**

---

**From:** Damico,William@epamail.epa.gov  
**Sent:** Friday, July 06, 2007 11:40 AM  
**To:** Gary Rogers  
**Subject:** Re: Marion Army Depot, re; CERCLA status for Wyandot Landfill,

County Environmental of Wyandot is acceptable to receive waste regulated by the CERCLA off-site rule. The most recent inspection I have information about was performed 06/27/2003.

William Damico  
312-353-8207

"Gary Rogers"  
<grogers@kemron.com>

07/06/2007 09:02 AM

To  
To  
William Damico/R5/USEPA/USEEPA  
CC

bcc

## Mary Lou Rochotte

---

**From:** Paul Jayko [Paul.Jayko@epa.state.oh.us]  
**Sent:** Friday, September 28, 2007 1:49 PM  
**To:** Mary Lou Rochotte  
**Cc:** Archie Lunsey; Bonnie Buthker  
**Subject:** USAR LTA

Mary Lou,

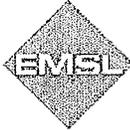
Ohio EPA has reviewed the analytical data provided by Kemron for both the Frac Tank and the Stockpile 15 Collection waters. Based on the results provided, Ohio EPA concurs that it is appropriate to discharge these collected waters to the ground surface, as a non-storm water discharge. The water will be discharged away from streams and wetland areas, after filtering any sediment from the water. The used filter material will be disposed of as non-hazardous waste.

Paul Jayko

**APPENDIX E**

**MANIFESTS AND DISPOSAL RECORDS**  
**(provided on CD due to size)**

**APPENDIX F**  
**AIR MONITORING RESULTS**



EMSL Analytical, Inc.

107 Haddon Ave., Westmont, NJ 08108

Phone: (856) 858-4800 Fax: (856) 858-4960 Email: westmontlab@EMSL.com

Attn: **Jessica Harris**  
**Kemron Environmental**  
**156 Starlite Drive**  
**Marietta, OH 45750**

Fax: (740) 373-4835  
Project: 404-475-8018

Phone: (740) 373-4308

Customer ID: KEMR52  
Customer PO: U0005-AD-0003  
Received: 08/01/07 9:40 AM  
EMSL Order: 040718283  
EMSL Proj:  
Analysis Date: 8/1/2007  
Report Date: 8/1/2007

**Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method, Revision 3,  
Issue 2, 8/15/94**

Sample	Location	Sample Date	Volume	Fibers	Fields	LOD (fib/cc)	Fibers/ mm <sup>2</sup>	Fibers/ cc	Notes
01-7131	LTA-01	7/31/2007	2717.00	<5.5	100	0.001	<7.0	<0.001	
040718283-0001									

No discernable field blank sample(s) submitted with this sample set.

Analyst(s)

Delores Beard (1)

Stephen Siegel, CIH, Laboratory Manager  
or other approved signatory

Limit of detection is 7 fibers/mm<sup>2</sup>. The laboratory is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. This report relates only to the samples reported above. The test results contained within this report meet the requirements of NELAC unless otherwise noted. This report may not be reproduced, except in full, without written approval by EMSL. Unless otherwise noted, the results in this report have not been blank corrected.

Analysis performed by EMSL Westmont (NY State ELAP #10872, AIHA #100194)





EMSL Analytical, Inc.

107 Haddon Ave., Westmont, NJ 08106

Phone: (856) 858-4800 Fax: (856) 858-4960 Email: westmonteslab@EMSL.com

Attn: **Jessica Harris**  
**Kemron Environmental**  
**156 Starlite Drive**  
**Marietta, OH 45750**

Fax: (740) 373-4835 Phone: (740) 373-4308  
Project: **MARION, OH**

Customer ID: KEMR52  
Customer PO:  
Received: 08/03/07 10:00 AM  
EMSL Order: 040718643  
EMSL Proj:  
Analysis Date: 8/3/2007  
Report Date: 8/3/2007

**Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method, Revision 3,  
Issue 2, 8/15/94**

Sample	Location	Sample Date	Volume	Fibers	Fields	LOD (fib/cc)	Fibers/ mm <sup>2</sup>	Fibers/ cc	Notes
LTA-01		8/1/2007	2692.00	<5.5	100	0.001	<7.0	<0.001	
040718643-0001									

No discernable field blank sample(s) submitted with this sample set.

Analyst(s)

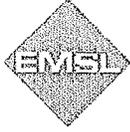
Delores Beard (1)

Stephen Siegel, CIH, Laboratory Manager  
or other approved signatory

Limit of detection is 7 fibers/mm<sup>2</sup>. The laboratory is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. This report relates only to the samples reported above. The test results contained within this report meet the requirements of NELAC unless otherwise noted. This report may not be reproduced, except in full, without written approval by EMSL. Unless otherwise noted, the results in this report have not been blank corrected.

Analysis performed by EMSL Westmont (NY State ELAP #10872, AIHA #100194)





EMSL Analytical, Inc.

107 Haddon Ave., Westmont, NJ 08108

Phone: (856) 858-4800 Fax: (856) 858-4960 Email: westmontasblab@EMSL.com

Attn: **Jessica Harris**  
**Kemron Environmental**  
**156 Starlite Drive**  
**Marietta, OH 45750**

Fax: (740) 373-4835 Phone: (740) 373-4308  
Project: **MARION, OH**

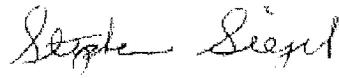
Customer ID: KEMR52  
Customer PO:  
Received: 08/04/07 10:00 AM  
EMSL Order: 040718770  
EMSL Proj:  
Analysis Date: 8/4/2007  
Report Date: 8/4/2007

**Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method, Revision 3,  
Issue 2, 8/15/94**

Sample	Location	Sample Date	Volume	Fibers	Fields	LOD (fib/cc)	Fibers/ mm <sup>2</sup>	Fibers/ cc	Notes
LTA-01		8/2/2007	2565.00	<5.5	100	0.001	<7.0	<0.001	
040718770-0001									

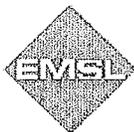
No discernable field blank sample(s) submitted with this sample set.

Analyst(s)  
\_\_\_\_\_  
Delores Beard (1)

  
\_\_\_\_\_  
Stephen Siegel, CIH, Laboratory Manager  
or other approved signatory

Limit of detection is 7 fibers/mm<sup>2</sup>. The laboratory is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. This report relates only to the samples reported above. The test results contained within this report meet the requirements of NELAC unless otherwise noted. This report may not be reproduced, except in full, without written approval by EMSL. Unless otherwise noted, the results in this report have not been blank corrected.  
Analysis performed by EMSL Westmont (NY State ELAP #10872, AIHA #100194)





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**156 Starlite Drive**  
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Fax: (740) 373-4835 Phone: (740) 373-4308  
Project: **40005-AB-003 / MARION ARMY DEPOT**

Customer ID: KEMR52  
Customer PO:  
Received: 08/09/07 9:40 AM  
EMSL Order: 040719231  
EMSL Proj:  
Analysis Date: 8/9/2007  
Report Date: 8/9/2007

**Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method, Revision 3,  
Issue 2, 8/15/94**

Sample	Location	Sample Date	Volume	Fibers	Fields	LOD (fib/cc)	Fibers/ mm <sup>2</sup>	Fibers/ cc	Notes
LTA0187		8/7/2007	1645.00	5.5	100	0.002	7.01	0.002	
040719231-0001									

No discernable field blank sample(s) submitted with this sample set.

Analyst(s)

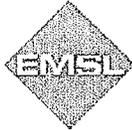
Delores Beard (1)

Stephen Siegel, CIH, Laboratory Manager  
or other approved signatory

Limit of detection is 7 fibers/mm<sup>2</sup>. The laboratory is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. This report relates only to the samples reported above. The test results contained within this report meet the requirements of NELAC unless otherwise noted. This report may not be reproduced, except in full, without written approval by EMSL. Unless otherwise noted, the results in this report have not been blank corrected.

Analysis performed by EMSL Westmont (NY State ELAP #10872, AIHA #100194)





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Project: **MARION, OH**

Customer ID: KEMR52  
Customer PO:  
Received: 08/16/07 9:40 AM  
EMSL Order: 040719942  
EMSL Proj:  
Analysis Date: 8/16/2007  
Report Date: 8/16/2007

**Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method, Revision 3,  
Issue 2, 8/15/94**

Sample	Location	Sample Date	Volume	Fibers	Fields	LOD (fib/cc)	Fibers/ mm <sup>2</sup>	Fibers/ cc	Notes
BLANK 8114	LTA-15	8/14/2007	0.00	0	100		<7.0		Field Blank
040719942-0001									
LTA-15-8114	LTA-15	8/14/2007	2347.00	<5.5	100	0.001	<7.0	<0.001	
040719942-0002									

Analyst(s)

Delores Beard (2)

Stephen Siegel, CIH, Laboratory Manager  
or other approved signatory

Limit of detection is 7 fibers/mm<sup>2</sup>. The laboratory is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. This report relates only to the samples reported above. The test results contained within this report meet the requirements of NELAC unless otherwise noted. This report may not be reproduced, except in full, without written approval by EMSL. Unless otherwise noted, the results in this report have not been blank corrected.

Analysis performed by EMSL Westmont (NY State ELAP #10872, AIHA #100194)





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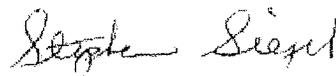
Fax: (740) 373-4835 Phone: (740) 373-4308  
 Project: **MARION, OH**

Customer ID: KEMR52  
 Customer PO:  
 Received: 08/17/07 10:00 AM  
 EMSL Order: 040720081  
 EMSL Proj:  
 Analysis Date: 8/17/2007  
 Report Date: 8/17/2007

**Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method, Revision 3,  
 Issue 2, 8/15/94**

Sample	Location	Sample Date	Volume	Fibers	Fields	LOD (fib/cc)	Fibers/ mm <sup>2</sup>	Fibers/ cc	Notes
BLANK-8115	LTA-15	8/15/2007	0.00	0	100		<7.0		Field Blank
040720081-0001									
LTA-15-8115	LTA-15	8/15/2007	2441.00	<5.5	100	0.001	<7.0	<0.001	
040720081-0002									

Analyst(s)  
 \_\_\_\_\_  
 Delores Beard (2)

  
 \_\_\_\_\_  
 Stephen Siegel, CIH, Laboratory Manager  
 or other approved signatory

Limit of detection is 7 fibers/mm<sup>2</sup>. The laboratory is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. This report relates only to the samples reported above. The test results contained within this report meet the requirements of NELAC unless otherwise noted. This report may not be reproduced, except in full, without written approval by EMSL. Unless otherwise noted, the results in this report have not been blank corrected.  
 Analysis performed by EMSL Westmont (NY State ELAP #10872, AIHA #100194)





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Project: **MARION, OH**

Customer ID: KEMR52  
Customer PO:  
Received: 08/20/07 9:35 AM  
EMSL Order: 040720282  
EMSL Proj:  
Analysis Date: 8/20/2007  
Report Date: 8/22/2007

**Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method, Revision 3,  
Issue 2, 8/15/94**

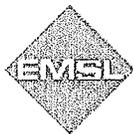
Sample	Location	Sample Date	Volume	Fibers	Fields	LOD (fib/cc)	Fibers/ mm <sup>2</sup>	Fibers/ cc	Notes
BLANK-8116 040720282-0001	LTA-15	8/16/2007	0.00	0	100		<7.0		Field Blank
LTA-15-8116 040720282-0002	LTA-15	8/16/2007	2639.00	<5.5	100	0.001	<7.0	<0.001	

Analyst(s)  
\_\_\_\_\_  
Delores Beard (2)

\_\_\_\_\_  
Stephen Siegel, CIH, Laboratory Manager  
or other approved signatory

Limit of detection is 7 fibers/mm<sup>2</sup>. The laboratory is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. This report relates only to the samples reported above. The test results contained within this report meet the requirements of NELAC unless otherwise noted. This report may not be reproduced, except in full, without written approval by EMSL. Unless otherwise noted, the results in this report have not been blank corrected.  
Analysis performed by EMSL Westmont (NY State ELAP #10872, AIHA #100194)





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 Project: **MARION, OH**

Customer ID: KEMR52  
 Customer PO:  
 Received: 08/21/07 9:40 AM  
 EMSL Order: 040720439  
 EMSL Proj:  
 Analysis Date: 8/21/2007  
 Report Date: 8/21/2007

**Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method, Revision 3, Issue 2, 8/15/94**

Sample	Location	Sample Date	Volume	Fibers	Fields	LOD (fib/cc)	Fibers/mm <sup>2</sup>	Fibers/cc	Notes
BLANK-8/17	LTA-15	8/17/2007	0.00	0	100		<7.0		Field Blank
040720439-0001									
LTA-15-8/17	LTA-15	8/17/2007	2367.00	<5.5	100	0.001	<7.0	<0.001	
040720439-0002									

Analyst(s)

Delores Beard (2)

Stephen Siegel, CIH, Laboratory Manager  
 or other approved signatory

Limit of detection is 7 fibers/mm<sup>2</sup>. The laboratory is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. This report relates only to the samples reported above. The test results contained within this report meet the requirements of NELAC unless otherwise noted. This report may not be reproduced, except in full, without written approval by EMSL. Unless otherwise noted, the results in this report have not been blank corrected.

Analysis performed by EMSL Westmont (NY State ELAP #10872, AIHA #100194)



# AIR QUALITY SERVICES, INC.

4527 Clairton Boulevard  
Pittsburgh, PA 15236  
(412) 881-5630



TABLE I  
RESULTS OF ARSENIC AND LEAD MONITORING  
KEMRON ENVIRONMENTAL SERVICES  
156 STARLITE PARK  
MARIETTA OH 45750  
PROJECT: U0005-AB-003 MARION, OHIO  
SAMPLING INFORMATION PROVIDED BY: KEMRON ENVIRONMENTAL  
SAMPLES RECEIVED: AUGUST 31, 2007 (3:00 PM)

PARAMETER	LTA-16 08-29-07 PUMP 0261999
LABORATORY NUMBER	AQS-95404
SAMPLE ID	ME8-9443
SAMPLING TIME-MINUTES	506
FLOW RATE- LITERS/MINUTE	2.0
SAMPLED VOLUME-M <sup>3</sup>	1.01
<b>ARSENIC</b>	
TOTAL MICROGRAMS	0.08
(UG/M <sup>3</sup> FOR SAMPLED TIME)	0.08
OSHA TWA-PEL - UG/M <sup>3</sup> *	9.5
PERCENT OF OSHA STANDARD*	0.8
<b>LEAD</b>	
TOTAL MICROGRAMS	0.06
(UG/M <sup>3</sup> FOR SAMPLED TIME)	0.06
OSHA TWA-PEL - UG/M <sup>3</sup> *	47.4
PERCENT OF OSHA STANDARD*	<0.5

\* APPLICABLE ONLY IF A PERSONAL SAMPLE.

THE SAMPLES WERE DIGESTED THEN ANALYZED BY ATOMIC ABSORPTION SPECTROSCOPY USING THE HYDRIDE TECHNIQUE AS OUTLINED BY THE NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH METHOD 7900 FOR ARSENIC AND THE GRAPHITE FURNACE TECHNIQUE BASED ON METHOD 7105 FOR LEAD.

  
AIR QUALITY SERVICES, INC.

JOB 8555  
REPORTED: SEPTEMBER 04, 2007 (12:00)

The presented data has been analyzed according to approved protocol and is certified to be complete and accurate.