

FY2016

MILITARY OCEAN TERMINAL CONCORD
Army Defense Environmental Restoration Program
Installation Action Plan

Printed 06 October 2016

Table of Contents

Statement Of Purpose.....	1
Acronyms.....	2
Acronym Translation Table.....	4
Installation Information.....	5
5-Year / Periodic Review Summary.....	7
Cleanup Program Summary.....	8
Installation Restoration Program.....	10
IRP Summary.....	11
IRP Contamination Assessment.....	12
IRP Previous Studies.....	14
Installation Restoration Program Site Descriptions.....	23
MOTCO-001 Tidal Area Landfill.....	24
MOTCO-001A Tidal Area Landfill Groundwater.....	25
MOTCO-002 R Area.....	26
MOTCO-003 Kiln Site (Litigation Area).....	27
MOTCO-004 Allied Chemical Site A.....	28
MOTCO-005 Allied Chemical Site B.....	29
MOTCO-006 Coke Pile Site	30
MOTCO-011 Wood Hogger Site.....	31
MOTCO-025 K-2 Area.....	33
MOTCO-026 G-1 Area.....	34
MOTCO-028 Litigation Area Monitoring.....	35
MOTCO-031 Former Fertilizer Plant.....	36
MOTCO-031a Former Fertilizer Plant Groundwater.....	37
MOTCO-032 Unit 7 Mosquito Abatement Ditches.....	38
MOTCO-033 Lost Slough.....	39
MOTCO-038 Port Chicago Main Street Dump.....	40
MOTCO-040 Former Copper Smelter.....	41
Installation Restoration Program Site Closeout (No Further Action) Sites Summary.....	42
Installation Restoration Program Schedule.....	45
Installation Restoration Program Milestones.....	45
IRP Schedule Chart.....	48

Table of Contents

Military Munitions Response Program.....	49
MMRP Summary.....	50
MMRP Contamination Assessment.....	51
MMRP Previous Studies.....	52
Military Munitions Response Program Site Descriptions.....	53
MOTCO-007-R-01 Explosive Ordnance Disposal Q Area.....	54
MOTCO-008-R-01 Port Chicago Tidal Area Explosions.....	55
MOTCO-010-R-01 Suisun Bay Impact Area.....	56
Military Munitions Response Program Site Closeout (No Further Action) Sites Summary.....	57
Military Munitions Response Program Schedule.....	58
Military Munitions Response Program Milestones.....	58
MMRP Schedule Chart.....	59

Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multiyear cleanup program for an installation. The plan identifies environmental cleanup requirements at each site or area of concern (AOC), and proposes a comprehensive, installation-wide approach, along with the costs and schedules associated with conducting investigations and taking the necessary remedial actions (RA).

In an effort to coordinate planning information between the restoration manager, the Army Materiel Command (AMC), the US Army Environmental Command (USAEC), Military Ocean Terminal Concord (MOTCO), the executing agencies, regulatory agencies, and the public, an IAP was completed. The IAP is used to track requirements, schedules, and tentative budgets for all major Army installation cleanup programs.

All site-specific funding and schedule information has been prepared according to projected overall Army funding levels and is, therefore, subject to change.

Acronyms

AEDB-R	Army Environmental Database-Restoration
AMC	Army Materiel Command
AOC	Area of Concern
BERA	Baseline Ecological Risk Assessment
Cal/EPA	California Environmental Protection Agency
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CIP	Community Involvement Plan
COC	Contaminant of Concern
COPC	Contaminant of Potential Concern
DET	Detachment
DoD	Department of Defense
DTSC	Department of Toxic Substances Control
EOD	Explosive Ordnance Disposal
ERA	Ecological Risk Assessment
FFA	Federal Facility Agreement
FRA	Final Remedial Action
FS	Feasibility Study
FY	Fiscal Year
IAP	Installation Action Plan
IRA	Interim Remedial Action
IRP	Installation Restoration Program
LTM	Long-Term Management
LUC	Land Use Controls
MC	Munitions Constituents
MEC	Munitions and Explosives of Concern
MMRP	Military Munitions Response Program
MOTCO	Military Ocean Terminal Concord
MRS	Munitions Response Site
NAVWPNSTA	Naval Weapons Station
NPL	National Priorities List
OC	Organochlorine
PA	Preliminary Assessment
PAH	Polycyclic Aromatic Hydrocarbon
PBA	Performance-Based Acquisition
PCB	Polychlorinated Biphenyls
POL	Petroleum, Oil and Lubricants
PP	Proposed Plan
PRP	Potentially Responsible Party
RA	Remedial Action
RA(C)	Remedial Action (Construction)
RAB	Restoration Advisory Board
RACR	Remedial Action Completion Report
RASS	Remedial Action Sub-site
RC	Response Complete
RCRA	Resource Conservation and Recovery Act of 1976

Acronyms

RDX	Cyclotrimethylenetrinitramine
RFA	RCRA Facility Assessment
RI	Remedial Investigation
RIP	Remedy-in-Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
RWQCB	California Regional Water Control Board
SMP	Site Management Plan
STLC	Soluble Threshold Limit Concentration
SWMU	Soild Waste Management Unit
TAPP	Technical Assistance for Public Participation
TNT	Trinitrotoluene
TRC	Technical Review Committee
TRV	Toxicity Reference Value
USACE	US Army Corps of Engineers
USAEC	US Army Environmental Command
USEPA	US Environmental Protection Agency
UXO	Unexploded Ordnance

Acronym Translation Table

CERCLA

Preliminary Assessment(PA)
Site Inspection(SI)
Remedial Investigation/Feasibility Study(RI/FS)
Remedial Design(RD)
Remedial Action (Construction)(RA(C))
Remedial Action (Operation)(RA(O))
Long Term Management(LTM)
Interim Remedial Action(IRA)

RCRA

= RCRA Facility Assessment(RFA)
= Confirmation Sampling(CS)
= RCRA Facility Investigation/Corrective Measures Study(RFI/CMS)
= Design(DES)
= Corrective Measures Implementation (Construction)(CMI(C))
= Corrective Measures Implementation (Operation)(CMI(O))
= Long Term Management(LTM)
= Interim Measure(IM)

Installation Information

Installation Locale

Installation Size (Acreage): 4390

City: Concord

County: Contra Costa

State: California

Other Locale Information

MOTCO is located in Concord, California, in north-central Contra Costa County, approximately 30 miles northeast of San Francisco, California. The facility is bounded on the north by Suisun Bay, on the south by the former Naval Weapons Station (NAVWPNSTA) Concord, on the west by the city of Concord (population 122,067), and on the east by private land and the city of Pittsburg.

Installation Mission

The Army's mission at MOTCO is to process, ship, and receive military general cargo and ordnance in a safe and efficient manner.

Lead Organization

Army Materiel Command (AMC)

Lead Executing Agencies for Installation

MOTCO [US Army Corps of Engineers (USACE) Sacramento is the contracting agency]

Regulator Participation

Federal

US Fish and Wildlife Service, Delta office
US Environmental Protection Agency (USEPA), Region 9
National Marine Fishery Office, SF Bay Office

State

California Regional Water Control Board (RWQCB), San Francisco Bay Region
California Environmental Protection Agency (Cal/EPA), Department of Toxic Substances Control (DTSC) Board

Local

Contra Costa County Department of Health Services

National Priorities List (NPL) Status

A score of 34 was recorded on 16-DEC-94.

Date for RA(C) Completion:

201712

Date for NPL Deletion: TBD

Installation Restoration Advisory Board (RAB)/Technical Review Committee (TRC)/Technical Assistance for Public Participation (TAPP) Status

RAB established 200901

Installation Information

Installation Program Summaries

IRP

Primary Contaminants of Concern: Metals, Pesticides, Petroleum, Oil and Lubricants (POL), Polychlorinated Biphenyls (PCB), Polycyclic Aromatic Hydrocarbons (PAH)

Affected Media of Concern: Groundwater, Sediment, Soil

MMRP

Primary Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)

Affected Media of Concern: Groundwater, Sediment, Soil

5-Year / Periodic Review Summary

5-Year / Periodic Review Summary

Status	Start Date	End Date	End FY
Complete	200604	200910	2010
Underway	201501	201609	2016

Last Completed 5-Year / Periodic Review Details

Associated ROD/DD Name	Sites
Final RA Plan for Hazardous Substances	MOTCO-003, MOTCO-004, MOTCO-005, MOTCO-006, MOTCO-025, MOTCO-026, MOTCO-028
Title Area Landfill Site 1	MOTCO-001

Results The remedy is protective of human health under current land use conditions. Contaminants left in place to avoid impacts to sensitive habitat that supports threatened and endangered species continue to pose low-level risks to ecological receptors.

Actions Survey vegetation impacted by a 2007 wildfire; resume monitoring at former monitoring locations; reassess exposures for the California Black Rail; assess ecological risk in RASS sub-areas; and evaluate TRVs used in baseline ERA, (see narrative).

Plans 15 actions are recommended (see narrative) for immediate, action, to be completed in 2009, 2010, and 2013.

Recommendations and Implementation Plans:

MOTCO-003, -004, -005, -006, -025, -026, -028:

1. Continue to maintain the current access controls at the Litigation Area. Stringently monitor for signs of trespassing.
2. Control upgradient contaminant sources.
3. Prepare a record of decision (ROD) amendment for sites 32 and 33.
4. Monitor vegetation recovery impacted by the 2007 wildfire, assess potential impact to sensitive habitat and threatened and endangered species, and determine the potential for erosion of contaminated soil.
5. Include Sites 32 and 33 in the monitoring program again once the remedy has been implemented to ensure protectiveness of remedy.
6. Resume monitoring in RA sub-sites (RASS) 3 and 4 until long-term protectiveness is ensured for unrestricted and unlimited use.
7. Divide RASS 2 into remediated and unremediated spatial units.
8. Continue monitoring with revised plan.
9. Continue to reassess exposure risks for black rails at five-year intervals using more realistic exposure assumptions.
10. Continue vegetation landscape monitoring.
11. Conduct a baseline ecological risk assessment (BERA) to assess risks from exposure within individual spatial units as well as site-wide risks to determine whether risks need to be addressed on smaller spatial scales.
12. Evaluate toxicity reference values (TRV) used for the BERA to determine which TRVs are not based on direct population level effects and identify appropriate TRVs to determine how BERA risk estimates were impacted. Recalculate risks.
13. Conduct another site inspection to determine whether the area of distressed vegetation still exists.
14. Resume monitoring of contaminant of concern (COC concentrations in Units 9 and 13. Continue monitoring until long-term protectiveness is ensured for unrestricted and unlimited use.

MOTCO-001:

1. Complete the explanation of significant differences, redesign work, construction, landfill cap land use controls (LUC), and RI/FS to characterize groundwater at Site 1.

Cleanup Program Summary

Installation Historic Activity

The facility at MOTCO, located at the former NAVWPNSTA Seal Beach Detachment (DET) Concord, California, is operated by the 834th Transportation Battalion which manages military material trans-shipments on the west coast in support of the global Warfighter. The installation is an ocean shipping terminal for the trans-shipment of general cargo and munitions between sea, rail, and highway routes. Past disposal activities of solvents, fuels, and other chemicals, and MC created extensive pollution in both the groundwater and the soil.

The Tidal Area of the former NAVWPNSTA Seal Beach DET Concord was transferred to the Army as MOTCO in October 2008. As part of the land transfer, the Army agreed to continue and finalize the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) process that the Navy started.

The region that encompasses the former NAVWPNSTA Seal DET Concord was originally identified as Bay Point. The area was primarily farms and ranches from the mid-1800s until 1908 when a chemical industry moved into the area now occupied by the eastern part of the base. Rail lines were laid through the area in the latter part of the 19th century and Union Pacific Railroad and the Burlington Northern Santa Fe Corporation still operate main routes there. The deep water bayfront attracted industries that could benefit from sea-going access. There were major wheat shipping operations, a copper smelter at Seal Bluff at the end of the 19th century, a shipyard in 1917-1920s, and a lumber company from 1907 until 1932. In response to the Depression, the town changed its name to Port Chicago in 1932 in an effort to attract industry.

With the need for a munitions loading point on the west coast, the Navy chose several hundred waterfront acres overlying the shipyard-smelter-lumber company area because of its remote location and the availability of three major rail lines. Construction of the waterfront handling facilities began in January 1942, and the facility was commissioned as the Naval Magazine Port Chicago in April 1942. The Inland Area used for munitions storage and maintenance, located in the Diablo Creek Valley, was subsequently acquired and linked to the Tidal Area by the Clayton-Bay Point Railroad over a Navy-constructed bridge spanning three main rail lines that passed through Port Chicago. In 1963, the base was officially renamed NAVWPNSTA Concord. In April 1998, the base became the Weapons Support Facility Seal Beach, DET Concord.

On July 17, 1944 a munitions ship docked at the Navy pier on the Tidal Area waterfront exploded destroying itself and an adjacent cargo ship, the pier, and severely damaging the nearby Navy garrison and the town of Port Chicago. 320 Navy, Coast Guard, and civilian workers were killed. Many residents in Port Chicago were injured. As a result, the Navy started actions to expand the buffer zone around munitions activities eventually acquiring all land within a 2-mile radius of the loading piers. The towns of Port Chicago and Nichols were purchased and demolished between 1968 and 1972 as part of this expansion. The former town sites are now within the Tidal Area.

The piers and most other facilities in the Tidal Area are within the original property of the Naval Magazine, Port Chicago. The Navy's purchase of the several parcels of land, to create the buffer zone around the Tidal Area, include eight parcels covering 307 acres, later found to be contaminated by the previous chemical industry occupants. Subsequent litigation with the prior owners resulted in settlements, and the parcels became known as the Litigation Area. Some of the cleanup work has been completed by the remaining adjacent chemical operation, the state and the Navy.

Installation Program Cleanup Progress

IRP

- Prior Year Progress:** MOTCO-001 (landfill) and MOTCO-002, 009,011,032 and 033 are construction complete and are in LTM. LTM continues for litigation sites. A proposed plan (PP) and ROD were completed for MOTCO-031. The signed ROD was finalized in June 2015. Caps were put in place for MOTCO-032 and MOTCO-033, and continuing RA actions are underway. An RI/FS is underway at MOTCO-031A. RI/FS began in spring 2016 for MOTCO-038 and 040.
- Future Plan of Action:** Actions for fiscal year (FY)16 and 17 include continue LTM on MOTCO-001, 002, 003, 004, 005, 006, 009, 011, 025, 026, 026A, 028, 032, and 033. Complete RAs at MOTCO-031. Complete the RI/FS at MOTCO-001A,031A, 038 and 040. The June 2016 site management plan (SMP) details all work to be completed for all sites at MOTCO as per the Federal Facility Agreement (FFA). The RA for MOTCO-031 has been delayed until fall 2016.

Cleanup Program Summary

MMRP

Prior Year Progress: An RI is underway for all three munitions response sites (MRS). Fieldwork began in July 2012 and was completed in October 2014. RI completion is planned.

Future Plan of Action: In order to characterize the MMRP sites, an RI/FS was started in 2012. A more detailed cleanup exit strategy will be developed pending the results of the final RI/FS. Per Section 22 of the FFA, the USEPA invoked informal dispute resolution on the draft final MMRP RI on Dec. 30, 2015. The Army and the regulatory agencies have met on a number of occasions to resolve the dispute and are close to resolution. The date of the final RI is to be established based on the informal dispute resolution.

MILITARY OCEAN TERMINAL CONCORD
Army Defense Environmental Restoration Program
Installation Restoration Program

IRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 50/33

Installation Site Types with Future and/or Underway Phases

3	Contaminated Ground Water (MOTCO-001A, MOTCO-031a, MOTCO-040)
7	Contaminated Sediments (MOTCO-004, MOTCO-005, MOTCO-025, MOTCO-026, MOTCO-028, MOTCO-032, MOTCO-033)
2	Contaminated Soil Piles (MOTCO-003, MOTCO-031)
2	Landfill (MOTCO-001, MOTCO-038)
1	Spill Site Area (MOTCO-011)
2	Surface Disposal Area (MOTCO-002, MOTCO-006)

Most Widespread Contaminants of Concern

Metals, Pesticides, Petroleum, Oil and Lubricants (POL), Polychlorinated Biphenyls (PCB), Polycyclic Aromatic Hydrocarbons (PAH)

Media of Concern

Groundwater, Sediment, Soil

Completed Remedial Actions (Interim Remedial Actions/ Final Remedial Actions (IRA/FRA))

Site ID	Site Name	Action	Remedy	FY
MOTCO-014	Kinne Boulevard Wells	IRA	REMOVAL	1995
MOTCO-256	Building 174 Electric Substation	IRA	WASTE REMOVAL - SOILS	1997
MOTCO-003	Kiln Site (Litigation Area)	FRA	REMOVAL	1999
MOTCO-004	Allied Chemical Site A	FRA	REMOVAL	1999
MOTCO-005	Allied Chemical Site B	FRA	REMOVAL	1999
MOTCO-006	Coke Pile Site	FRA	REMOVAL	1999
MOTCO-025	K-2 Area	FRA	REMOVAL	1999
MOTCO-026	G-1 Area	FRA	REMOVAL	1999
MOTCO-028	Litigation Area Monitoring	FRA	REMOVAL	1999
MOTCO-259	Buildings A-3A and E-111	FRA	WASTE REMOVAL - SOILS	2001
MOTCO-035	A16 and E108	FRA	REMOVAL	2007
MOTCO-037	TT-21 A, B and C	FRA	REMOVAL	2008
MOTCO-030	Taylor Blvd Bridge Disposal Site	FRA	REMOVAL	2010
PBA@MOTCO	PBA@MOTCO IR Sites	FRA	CAPPING	2012
MOTCO-001	Tidal Area Landfill	FRA	CAPPING	2013
MOTCO-011	Wood Hogger Site	FRA	REMOVAL	2013
MOTCO-032	Unit 7 Mosquito Abatement Ditches	FRA	CAPPING	2016
MOTCO-033	Lost Slough	FRA	CAPPING	2016

Duration of IRP

Date of IRP Inception: 198203

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 202009/202009

Date of IRP completion including Long Term Management (LTM): 204609

IRP Contamination Assessment

Contamination Assessment Overview

Environmental investigations and cleanup began on NAVWPNSTA Seal Beach DET Concord in the 1980s and continue today. Initially led by the Navy (and now taken over by the Army), the environmental team carrying out these activities at MOTCO includes representatives from the Army, the USEPA, the Cal/EPA, and other federal, state, and local natural resource trustees. Cleanup activities at all Installation Restoration Program (IRP) sites follow the basic CERCLA process. MOTCO is divided into two geographically separated areas: the Litigation Area and the Tidal Area.

In 1980 the Navy initiated a series of investigations to address the contaminant issues of the Litigation Area. From 1981 to 1983, an initial assessment study was conducted under the Navy Assessment and Control of Installation Pollutants Program. The study was based on interviews, archival reports, SIs, and sample analysis. The study found evidence of metal contamination on six sites in the Litigation Area. In 1983 the Navy identified six sites (3, 4, 5, 6, 25, 26), requiring an RI under CERCLA. The RI report identified six metals: arsenic, cadmium, copper, lead, selenium, and zinc. During the RI an additional site, 28, was identified as requiring an investigation. In the FS, the sites were grouped into four RASS based on technical feasibility, environmental considerations, land use considerations, and public health considerations. The FS recommended remedial alternatives and soil cleanup criteria for each RASS.

In 1989 the Navy issued an FRA plan and signed a ROD for remediation of the sites at the Litigation Area that were contaminated with metals. Active remediation (removal and disposal of contaminated soil) was conducted between 1992 and 1996. A monitoring plan was put in place to monitor the effect and mobility of chemicals left in place.

From 1996 to 2000 the Navy performed five years of post-remediation monitoring. A five-year periodic review assessment was completed in 2000 and the 2006 five-year assessment was completed in 2010. Two sites were identified as not protective of the environment (MOTCO-32 and MOTCO-33). The next five-year review started in 2015 and will be finalized in 2016.

The following list provides an overview of the current status of the IR, MRS, and RCRA compliance sites at MOTCO. Contaminants are identified as chemicals of potential concern (COPC). After the ROD is signed, the COPCs will be considered COCs.

MOTCO-001:

COCs: Metals, VOCs, SVOCs, PAHs, PCBs, and MEC.

Current Status: RA completed in 2012. LTM is underway and includes annual monitoring and five-year review reports. MOTCO-001 is subject to land use restrictions, maintenance for the landfill cover, and annual monitoring by the Army.

MOTCO-001A:

COPC: Metals, VOCs, SVOCs, PAHs, and PCBs.

Current Status: The RI phase is underway.

MOTCO-002, 009, and 011:

COCs: Mercury, arsenic, PAHs, and PCBs.

Current Status: The remediation was completed in 2013. LTM is underway, including annual monitoring and five-year review reports. These sites are subject to land use restrictions and annual monitoring by the Army.

MOTCO-003, 004, 005, 006, 025, and 028:

COCs: None.

Current Status: The remediation has been completed. LTM is underway, including annual monitoring and five-year review reports. These sites are subject to the annual LTM by the Army to evaluate effectiveness of the remedy.

MOTCO-030:

COCs: None.

Current status: The remediation has been completed. No further action is planned.

MOTCO-031:

COCs: Metals, primarily arsenic.

Current Status: The RD/RA phase is underway.

MOTCO-031A:

COPs: Metals, primarily arsenic.

Current Status: The FS phase is underway. The public will be notified when the comment period is announced. The FS requires

IRP Contamination Assessment

Contamination Assessment Overview

additional rounds of groundwater data before it can be finalized.

MOTCO-032 and 033:

COCs: Arsenic, cadmium, copper, lead, mercury, selenium, and zinc.

Current Status: The RA phase is underway.

MOTCO-039:

COCs: None.

Current Status: No further action is required. The November 2012 SI concluded that this site does not pose unacceptable levels of risk to human health or the environment.

MOTCO-038 and 040.

COPCs: Metals, SVOCs, PAHs.

Current Status: Planning for the RI phase is underway. The RI field investigation is scheduled for September 2016.

Cleanup Exit Strategy

The cleanup strategy for the IRP sites at MOTCO is to follow the CERCLA/Resource Conservation and Recovery Act of 1976 (RCRA) steps and maintain compliance with the FFA. The SMP for MOTCO-001A, MOTCO-031, MOTCO-032, MOTCO-033 and MOTCO-026A all have RIP/RC dates of 2016.

IRP Previous Studies

Year	Title	Author	Date
1976	Environmental Engineering Survey, Naval Weapons Station, Concord, California	Resources Engineering & Management	MAR-1976
1977	Soil Survey of Contra Costa County, California	U.S. Department of Agriculture, Soil Conservation Service	SEP-1977
1983	Initial Assessment Study, Naval Weapons Station, Concord, California	Ecology and Environment, Inc.	JUL-1983
1985	Final Draft Report Assessment of Damage to Natural Resources at Naval Weapons Station, Concord, California	Environmental Laboratory, Department of the Army	AUG-1985
	Salt Marsh Harvest Mouse and Small Mammal Trapping at Concord Naval Weapons Station	Harvey and Stanley Associates, Inc.	DEC-1985
1986	Final Report, Remedial Investigation of Contaminant Mobility at Naval Weapons Station, Concord, California	Environmental Laboratory, Department of the Army	JAN-1986
1987	Final Report, Suitability of Sites for Hazardous Waste Disposal, Concord Naval Weapons Station, Concord, California	Department of the Army, Geotechnical Laboratory	SEP-1987
1988	Final Report, Remedial Investigation of Contaminant Mobility at Naval Weapons Station, Concord, California	Environmental Laboratory, Department of the Army	JUN-1988
	Natural Resources Management Plan, Naval Weapons Station, Concord, California	Natural Resources Management Staff	JUN-1988
	Final Report Feasibility Study of Contamination Remediation at Naval Weapon Station Concord, California	Environmental Laboratory, Department of the Army	JUL-1988
	Endangered Species Formal Consultation on Remediation of Heavy Metals Contamination at Naval Weapons Station, Contra Costa County, California	U.S. Department of Interior, Fish and Wildlife Service	AUG-1988
1989	Monitoring Plan for Contamination Remediation at Naval Weapons Station, Concord, California	Environmental Laboratory, Department of the Army	APR-1989
1992	RCRA Facility Assessment, Concord Naval Weapons Station	California Environmental Protection Agency, DTSC	JUN-1992
	Final Cultural Resources Survey Report, RASSs 1, 2, and 3, Naval Weapons Station, Concord, California	PRC Environmental Management, Inc. and William Self Associates	JUL-1992
	Draft Site Investigation Report, Tidal Area Sites, Naval Weapons Station, Concord, California	IT Corporation	JUL-1992
	Drawings of RASSs 1, 2, and 3, Remedial Action, Naval Weapons Station, Concord, California	Naval Facilities Engineering Command, Western Division, San Bruno	AUG-1992
	Federal Facility Site Remediation Agreement for Concord Naval Weapons Station	Toxic Legal Office, DTSC	SEP-1992
1993	Cultural Resources Overview, Naval Weapons Station Concord, Contra Costa County, California	William Self Associates	AUG-1993

IRP Previous Studies

Year	Title	Author	Date
1993	Final Technical Memorandum: Results of Field Investigation Activities, Litigation Sites, Naval Weapons Station, Concord, California	IT Corporation	SEP-1993
	Final Technical Memorandum: Results of Field Investigation Activities, Litigation Sites, Naval Weapons Station, Concord, California	IT Corporation	SEP-1993
1994	Endangered, Threatened and Candidate Species, U.S. Navy and Marine Corps Lands: A Base Specific Handbook	The Nature Conservancy	JAN-1994
	Endangered, Threatened and Candidate Species, U.S. Navy and Marine Corps Lands: A Base Specific Handbook	The Nature Conservancy	JAN-1994
	National Priorities List for Uncontrolled Hazardous Waste Sites	USEPA	MAR-1994
	Long-Term Installation Plan, Naval Weapons Station Concord, Concord, California	PRC Environmental Management, Inc.	JUN-1994
	Remediation Summary Report, RASS 4 Remedial Action, Naval Weapons Station, Concord, California	PRC Environmental Management, Inc.	AUG-1994
	Qualitative Ecological Assessment Review of Background Documents, Litigation Area Sites, Naval Weapons Station, Concord, California	PRC Environmental Management, Inc.	AUG-1994
1995	Final Work Plan, Qualitative Ecological Assessment, Litigation Area, Naval Weapons Station, Concord, California	PRC Environmental Management, Inc.	MAY-1995
	Modifications to the Field Sampling Plan for the Qualitative Ecological Assessment, Litigation Area, Naval Weapons Station Concord	PRC Environmental Management, Inc.	SEP-1995
1996	After Remediation (Year 1) Draft Remedial Action Monitoring Report, Litigation Area, Naval Weapons Station Concord	PRC Environmental Management, Inc.	MAY-1996
1997	Technical Memorandum Tidal Influence Study and Post-Remediation Groundwater Monitoring, Litigation Area, Naval Weapons Station Concord	Tetra Tech EM Inc.	JUL-1997
	After Remediation (Year 2) Remedial Action Monitoring Report, Litigation Area	PRC Environmental Management, Inc. and Uribe & Associates	JUL-1997
	Quality Assurance Project Plan, Remedial Action Monitoring Report, Litigation Area	PRC Environmental Management, Inc.	JUL-1997
	Final Report RCRA Facility Assessment, Confirmation Study, Naval Weapons Station Concord, California	PRC Environmental Management, Inc.	AUG-1997
1998	After Remediation (Year 3) Draft Remedial Action Monitoring Report, Litigation Area, Naval Weapons Station Concord	Tetra Tech EM Inc. and Uribe & Associates	FEB-1998
	California Black Rail Surveys at the Weapons Station Facility Seal Beach Detachment Concord, Otter Sluice: Summer 1998	H.T. Harvey and Associates	AUG-1998
	Final Qualitative Ecological Assessment Report, Litigation Area, Naval Weapons Station Concord,	PRC Environmental Management, Inc.	SEP-1998

IRP Previous Studies

1998	Title	Author	Date
	California		
	Final Qualitative Ecological Assessment Report, Litigation Area, Naval Weapons Station Concord, California	PRC Environmental Management, Inc.	SEP-1998
	Final Work Plan/Field Sampling Plan, Remedial Action Monitoring, Litigation Area, Naval Weapons Station, Seal Beach Detachment Concord	Tetra Tech EM Inc.	DEC-1998
	Final Report Toxicity Evaluation of Sediments from the Litigation Area, Naval Weapons Station, Seal Beach Detachment, Concord, Using the Sediment-Water Interface Test with Topsmelt (<i>Atherinops affinis</i>) Embryos	Pacific Eco-Risk Labs	DEC-1998
	Small Mammal Surveys, Litigation Area, Naval Weapons Station, Seal Beach Detachment, Concord, California	Garcia and Associates	DEC-1998
1999			
	After Remediation (Year 4) Remedial Action Monitoring Report, Litigation Area	Tetra Tech EM Inc.	JAN-1999
	Results of 1999 California Black Rail Surveys and Evaluation of Five-Year Population Trends at the Naval Weapons Station Seal Beach Detachment, Concord, CA	H.T. Harvey and Associates	NOV-1999
	1999 Small Mammal Survey Report, Naval Weapons Station Seal Beach Detachment, Concord, California	ECORP Consulting, Inc.	DEC-1999
2000			
	Draft Final Appendix A, Field Sampling Plan, Work Plan, Five-Year Periodic Review Assessment for Litigation Area, Naval Weapons Station Seal Beach Detachment Concord, Concord, California	Tetra Tech EM Inc.	FEB-2000
	Draft Appendix B, Quality Assurance Project Plan, Work Plan for Five-Year Periodic Review Assessment Litigation Area, Naval Weapons Station Seal Beach Detachment, Concord, California	Tetra Tech EM Inc.	SEP-2000
	Draft Final Work Plan Five-Year Periodic Review Assessment for Litigation Area, Naval Weapons Station Seal Beach Detachment Concord, Concord, California	Tetra Tech EM Inc.	SEP-2000
	Draft Final Appendix A, Field Sampling Plan, Work Plan, Five-Year Periodic Review Assessment for Litigation Area, Naval Weapons Station Seal Beach Detachment Concord, Concord, California	Tetra Tech EM Inc.	NOV-2000
2001			
	Draft Five-Year Periodic Review Assessment, Litigation Area, Naval Weapons Station Seal Beach Detachment, Concord, California	Tetra Tech EM Inc.	JUN-2001
2002			
	Integrated Natural Resources Management Plan and Environmental Assessment, Naval Weapons Station, Seal Beach Detachment Concord, Concord, California	Tetra Tech, Inc.	MAR-2002
	Draft Final Periodic Five-Year Review Assessment for Litigation Area, Naval Weapons Station Seal Beach Detachment, Concord, California	Tetra Tech EM Inc.	OCT-2002
	Draft Final Community Summary Report, Five-Year Periodic Review Assessment, Litigation Area, Naval	Tetra Tech EM Inc.	OCT-2002

IRP Previous Studies

	Title	Author	Date
2002	Weapons Station Seal Beach Detachment, Concord, California		
2003	Final Investigation Summary Report, Port, Chicago Main Street Gas Station Site, Naval Weapons Station Seal Beach Detachment Concord, Contra Costa County, California	Tetra Tech EM Inc.	MAY-2003
	Final Five-Year Periodic Review Assessment, Litigation Area, Naval Weapons Station Seal Beach, Detachment, Concord, Concord, California (CD only)	Tetra Tech EM Inc.	JUN-2003
	Final Sampling and Analysis Plan (Field Sampling Plan/Quality Assurance Project Plan) Data Gaps Evaluation, Litigation Area, Naval Weapons Station Seal Beach Detachment Concord, Concord, California	Tetra Tech EM Inc.	JUL-2003
	Draft Final Community Relations Plan, Naval Weapons Station Seal Beach Detachment Concord, Concord, California	Tetra Tech EM Inc.	AUG-2003
2004	Final Letter Report of the Second Quarter (November 2003) Groundwater Monitoring for Port Chicago Main Street Gas Station Site, Naval Weapons Station, Seal Beach Detachment Concord, Concord, California	Tetra Tech EM Inc.	FEB-2004
	Draft Supplemental Feasibility Study, Litigation Area, Naval Weapons Station Seal Beach Detachment Concord, Concord, California	Tetra Tech EM Inc.	MAR-2004
	Final Monitoring Plan for the Litigation Area, Naval Weapons Station Seal Beach Detachment Concord, Concord, California	Tetra Tech EM Inc.	OCT-2004
2005	Final Data Gaps Technical Evaluation Report for the Litigation Area, Naval Weapons Station Seal Beach, Detachment Concord, Concord, California	Tetra Tech EM Inc.	MAR-2005
	Final Sampling and Analysis Plan (Field Sampling Plan/Quality Assurance Project Plan) for Treatability Study at the Litigation Area, Naval Weapons Station Seal Beach Detachment Concord, Concord, California	Tetra Tech EM Inc.	MAR-2005
	Draft Evaluation of Methodologies for Deriving Risk-Based, Site-Specific Preliminary Remediation Goals for Litigation Area Sediment, Naval Weapons Station Seal Beach, Detachment Concord, Concord, California	Tetra Tech EM Inc.	MAY-2005
2006	Final Treatability Study and Supplemental Feasibility Study Data Gaps Technical Memorandum at the Litigation Area, Naval Weapons Station Seal Beach Detachment Concord, Concord, California	SulTech	FEB-2006
	Final Year 1 Revised Post-Remediation Monitoring Program, Technical Memorandum, Litigation Area, Naval Weapons Station Seal Beach Detachment Concord, Concord, California	SulTech	AUG-2006
2007	Final Year 2 Revised Post-Remediation Monitoring Program, Technical Memorandum, Litigation Area, Naval Weapons Station Seal Beach Detachment	Tetra Tech EM Inc.	AUG-2007

IRP Previous Studies

2007	Title	Author	Date
	Concord, Concord, California		
	Final Qualitative Ecological Assessment Report, Litigation Area, Naval Weapons Station Concord, California	PRC Environmental Management, Inc.	SEP-2007
	Revised Draft Final Supplemental Feasibility Study Report for Litigation Area Sites 32 (Unit 7 Mosquito Abatement Ditches), 33 (Units 10 and 11, Lost Slough), and 34 (Nichols Creek Erosional Areas), Naval Weapons Station Seal Beach Detachment Concord, Concord, California	Tetra Tech EM Inc.	NOV-2007
2008	Final Supplemental Feasibility Study Report for Litigation Area Sites 32 (Unit 7 Mosquito Abatement Ditches), 33 (Units 10 and 11, Lost Slough), and 34 (Nichols Creek Erosional Areas), Naval Weapons Station Seal Beach Detachment Concord, Concord, California	Tetra Tech EM Inc.	JAN-2008
	Final Technical Memorandum for Year 3 of the Revised Post-Remediation Monitoring Plan for the Litigation Area, Naval Weapons Station Seal Beach Detachment Concord, Concord, California	Tetra Tech EM Inc.	AUG-2008
	Draft Feasibility Study Report for Tidal Areas 2, 9, and 11	Tetra Tech EM Inc.	OCT-2008
2009	Final GW Monitoring Summary & Closure Report for UST Site A-16, Naval Weapons Station Seal Beach Detachment Concord, Concord, CA	TtEMI	FEB-2009
	Final Accident Prevention Plan Revised Post-remediation Monitoring for the Litigation Area, Military Ocean Terminal Concord, Concord, CA	Tetra Tech EM Inc.	FEB-2009
	Final Proposed Plan for Litigation Area Sites 32 and 33	TtEMI	APR-2009
	Draft Year 4 Rev Post-remediation Monitoring Program Tech Memo, Litigation Area	TtEMI	JUN-2009
	RI Report for IRP Site 31, MOTCO, Concord, CA	Tetra Tech EM Inc.	JUN-2009
	Draft SAP (FSP/QAPP) Pre-remedial Design Field Investigation Sites 32 & 33 Litigation Area	TtEMI	JUL-2009
	Draft Amended ROD Litigation Area Sites 32 & 33	TtEMI	AUG-2009
	Draft Addendum 02 SAP (FSP/QAPP) RI IR Site 31	TtEMI	AUG-2009
	Final SAP (FSP/QAPP) Pre-remedial Design Field Investigation Sites 32 & 33 Litigation Area	TtEMI	OCT-2009
	Final Addendum 02 SAP (FSP/QAPP) RI IR Site 31	TtEMI	OCT-2009
	Final Year 4 Rev Post-remediation Monitoring Program Tech Memo, Litigation Area	TtEMI	OCT-2009
	Final FS for IR Sites 2, 9, and 11	TtEMI	DEC-2009
2010	Draft Proposed Plan for IR Sites 2, 9, and 11	TtEMI	JAN-2010
	Draft UST WP (Multiple UST Sites)	ITSI	FEB-2010

IRP Previous Studies

2010

Title	Author	Date
Pre-RD Field Investigation Technical Memorandum	TtEMI	FEB-2010
FINAL SUPPLEMENTAL FEASIBILITY STUDY REPORT FOR LITIGATION AREA SITES 32 AND 33	TT	MAR-2010
FINAL LITIGATION AREA 2ND 5-YEAR REVIEW	Tetra Tech	JUL-2010
8/17/2010 DRAFT GEOTECHNICAL INVESTIGATION WORK PLAN	AIS	AUG-2010
FINAL SITE 1 GEOTECHNICAL WP	AIS	SEP-2010
FINAL SITE 1 GEOTECHNICAL UXO SUPPORT WP	AIS	SEP-2010
FINAL LITIGATION AREA LTM UXO SUPPORT WP (SOIL COLLECTION)	Tetra Tech	OCT-2010
FINAL SITE 1 LANDFILL FIRST 5-YR REVIEW	Tetra Tech	NOV-2010
FINAL CLOSURE PLAN FOR SITE 30	Soft Souce	NOV-2010
FINAL CLOSURE/POST CLOSURE MAINTENANCE PLAN SITE 1 TIDAL AREA LANDFILL	AIS	DEC-2010

2011

FINAL LITIGATION AREA YEAR 5 MONITORTING TECH MEMO, MOTCO-003, 004, 005, 006, 025, 026, 02	Tetra Tech	FEB-2011
DRAFT FINAL SUPPLEMENTAL FEASIBILITY STUDY ADDENDUM LITIGATION AREA SITES 32 AND 33	TT	FEB-2011
FINAL SITE 1 GROUNDWATER SAP AMENDMENT	AIS	MAR-2011
FINAL SITE 26A - G1 AREA RI WP & APP	TT	MAR-2011
FINAL PROPOSED PLAN FOR SITES 2, 9, AND 11	Tetra Tech	APR-2011
FINAL SITE 26A - G1 AREA SI	Tetra Tech	APR-2011
FINAL SITE 2, 9, 11 HISTORICAL RADIOLOGICAL ASSESSMENT	Tetra Tech	JUL-2011
FINAL LITIGATION AREA SITES 32, 33 SFS AMENDMENT/ADDENDUM	TT	JUL-2011
FINAL TREATABILITY STUDY WORK PLAN FOR ASSESSING CAP MATERIAL FOR SITES 32 AND 33	TT	JUL-2011
FINAL RECORD OF DECISION FOR MOTCO TIDAL AREA SITES 2, 9, 11	Tetra Tech	AUG-2011
FINAL SITE 1 LANDFILL ESD	AIS	AUG-2011
FINAL LITIGATION AREA SITE 32 AND 33 PP	AIS	AUG-2011
FINAL SITE 35 UST SITES A-16 AND E-108 WELL DESTRUCTION REPORT	Tetra Tech	AUG-2011
FINAL LITIGATION AREA LTM SAP ADDENDUM, MOTCO-003, 004, 005, 006, 025, 026, 02	Tetra Tech	SEP-2011
UXO WORK PLAN LITIGATION AREA LONG TERM MONITORING AT UNITS 9 AND 13	Tetra Tech	SEP-2011
FINAL SITE 36 PORT CHICAGO HWY SUMMARY REPORT	IT/	SEP-2011
SITE INSPECTION REPORT SITES 38, 39, AND 40	TT	NOV-2011

2012

DF Record of Decision for MOTCO Tidal Area, Sites 2, 9, 11	Tetra Tech	JAN-2012
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IRP Previous Studies

2012

Title	Author	Date
SITE 1 LANDFILL CONSTRUCTION UXO SUPPORT WP	Tetra Tech	FEB-2012
FINAL YEAR 6 REVISED POST-REMEDATION MONITORING PROGRAM TECHNICAL MEMORANDUM LITIGATION AREA, MOTCO-003, 004, 005, 006, 025, 026, 028	Tetra Tech	FEB-2012
Draft Remedial Design, Remedial Action for Site 11, Rhodes Road Fill and Area	Insight	FEB-2012
Draft Community Involvement Plan	Tetra Tech	FEB-2012
FINAL EXPLOSIVE SAFETY SUBMITTAL SITE 1 AMENDMENT DDESB APPROVAL	AIS	MAR-2012
PETROLEUM HYDROCARBON INVESTIGATION REPORT MOTCO SITE 26A	TT	MAR-2012
30% DESIGN SUBMITTAL REMEDIAL DESIGN REPORT FOR IN SITU CAP AT SITES 32 AND 33	Tetra Tech	MAR-2012
DRAFT FINAL REMEDIAL DESIGN FOR MOTCO SITE 11	Insight inc	MAY-2012
DRAFT SITE INSPECTION REPORT MOTCO SITES 38, 39, 40	Tetra Tech	MAY-2012
FINAL RECORD OF DECISION FOR MOTCO TIDAL AREA SITES 2, 9, 11	Tetra Tech	JUN-2012
DRAFT FINAL AMENDED RECORD OF DECISION FOR MOTCO SITES 32 AND 33 LITIGATION AREA	Tetra Tech	JUN-2012
DRAFT UXO WP REMEDIAL ACTION FOR MOTCO SITE 11	Cabrera	JUN-2012
DRAFT REMEDIAL INVESTIGATION SITE 1 GW	AIS	JUN-2012
FINAL MOTCO COMMUNITY INVOLVEMENT PLAN	TT	JUL-2012
90 PERCENT REMEDIAL DESIGN REPORT FOR IN SITU CAP AT SITES 32 AND 33 LITIGATION AREA	Tetra Tech	JUL-2012
TRANSMITTAL OF FINAL REMEDIAL DESIGN ADDENDUM TIDAL AREA SITE 11	Tetra Tech	OCT-2012
PROPOSED PLAN SITE 31 MOTCO	Tetra Tech	OCT-2012
SUMMARY REPORT MOTCO SITE 37 GROUNDWATER MONITORING	TT	OCT-2012
SITE INSPECTION REPORT SITES 38, 39, AND 40	Tetra Tech	NOV-2012
PETROLEUM HYDROCARBON INVESTIGATION REPORT MOTCO SITE 26A	Tetra Tech	NOV-2012
SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING PLAN & QA PROJECT PLAN) FOR GW	Tetra Tech	DEC-2012

2013

DRAFT ENGINEERING EVALUATION/COST ANALYSIS LAND USE CONTROLS - MOTCO MILITARY MUNITIONS RESPONSE PROGRAM	USACE	JAN-2013
REVISED FINAL WORK PLAN - MILITARY MUNITIONS RESPONSE PROGRAM REMEDIAL INVESTIGATION/ FEASIBILITY STUDY AT MOTCO	Parsons	JAN-2013
DRAFT LAND USE CONTROL REMEDIAL DESIGN INSTALLATION RESTORATION SITES 2, 9, 11	Insight	JAN-2013
DRAFT RECORD OF DECISION SITE 31 SOIL	TT	MAR-2013
DRAFT FINAL SAMPLING AND ANALYSIS PLAN SITE 31A	Tetra Tech	APR-2013

IRP Previous Studies

2013	Title	Author	Date
	REMEDIAL ACTION REPORT MECURY REMEDIAL ACTION FOR MITIGATION OF ECOLOGICAL RISK SITE 11, WOOD HOGGER SITE	Insight	MAY-2013
	FINAL LAND USE CONTROL REMEDIAL DESIGN INSTALLATION RESTORATION SITES 2, 9, AND 11	Tetra Tech	JUL-2013
	FINAL SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING PLAN AND QA PROJECT PLAN) FOR GROUNDWATER CHARACTERIZATION AT INSTALLATION RESTORATION SITE 31A	Tetra Tech	JUL-2013
	DRAFT REMEDIAL INVESTIGATION SITE 1 TIDAL AREA LANDFILL	AIS	SEP-2013
	REMEDIAL ACTION REPORT MECURY REMEDIAL ACTION FOR MITIGATION OF ECOLOGICAL RISK SITE 11, WOOD HOGGER SITE	Insight	SEP-2013
	REMEDIAL ACTION REPORT AND LAND USE CONTROL REMEDIAL DESIGN MOTCO-001 TIDAL AREA LANDFILL, SITE 1	AIS	OCT-2013
	YEAR 8 REVISED POST-REMEDATION MONITORING PROGRAM TECHNICAL MEMORANDUM MOTCO-003, 004, 005, 006,	Tetra Tech	OCT-2013
	RECORD OF DECISION SITE 31 SOIL	Tetra Tech	OCT-2013
2014	YEAR 8 REVISED POST-REMEDATION MONITORING PROGRAM TECHNICAL MEMORANDUM MOTCO-003, 004, 005, 006,	Tetra Tech	FEB-2014
	FINAL RECORD OF DECISION FOR SITE 31	Tetra Tech	MAY-2014
	REMEDIAL ACTION REPORT AND LAND USE CONTROL REMEDIAL DESIGN MOTCO-001 TIDAL AREA LANDFILL, SITE 1	Insight	AUG-2014
	FINAL RECORD OF DECISION FOR SITE 31 SOIL	Tetra Tech	AUG-2014
	FINAL REMOVAL ACTION COMPLETION REPORT FOR SITE 1 LANDFILL	AIS	AUG-2014
	2014 ANNUAL LAND USE CONTROL INSPECTION REPORT IR SITES 2, 9, AND 11	Tetra Tech	NOV-2014
	REMEDIAL INVESTIGATION REPORT SITE 1 GROUNDWATER	AIS	DEC-2014
2015	YEAR 9 REVISED POST-REMEDATION MONITORING PROGRAM TECHNICAL MEMORANDUM MOTCO-003, 004, 005, 006,	Tetra Tech	JAN-2015
	RECORD OF DECISION SITE 31 SOIL	Tetra Tech	JAN-2015
	REVISED FINAL RECORD OF DECISION SITE 31 SOIL	Tetra Tech	APR-2015
	2015 GROUNDWATER MONITORING REPORT AND SITE CLOSURE EVALUATION FOR SITE 26A MILITARY OCEAN TERMINAL CONCORD	Tetra Tech	JUN-2015
	2015 ANNUAL LAND USE CONTROL INSPECTION REPORT IR SITES 2, 9, AND 11	Tetra Tech	JUN-2015
	REVISED DRAFT FINAL RI FOR SITE 1A GROUNDWATER	USACE	JUL-2015
	Draft Final Military Munitions Response Program (MMRP) Remedial Investigation Report Military Ocean	Parsons	DEC-2015

IRP Previous Studies

2015

Title

Author

Date

Terminal Concord		
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MILITARY OCEAN TERMINAL CONCORD
Installation Restoration Program
Site Descriptions

Site ID: MOTCO-001
Site Name: Tidal Area Landfill

STATUS

Regulatory Driver: CERCLA
RRSE: HIGH
 Contaminants of Concern: Metals
 Media of Concern: Soil

Phases	Start	End
PA.....	199201.....	199301
SI.....	199401.....	199501
RI/FS.....	199801.....	200805
RD.....	200806.....	200809
RA(C).....	200806.....	201210
LTM.....	201301.....	204609
RIP Date:	N/A	
RC Date:	201210	

SITE DESCRIPTION

The Tidal Area Landfill served as the primary disposal area for the Navy and surrounding communities from 1944 to 1979. The landfill is approximately 13 acres and contains an estimated 135,000 cubic yards of waste and soil cover. Munitions and explosives of concern (MEC) were found in the landfill in June 2006. Through the CERCLA process, the Navy and regulatory agencies agreed the landfill should be covered. Construction of the cover began in April 2006. During excavation, MEC were unearthed, and the Navy stopped work and revised the cover design to eliminate the need for excavation. The Navy prepared an ESD to the ROD that describes the design changes (larger footprint and higher landfill), provides the reasons for the changes, and presents revised drawings. The Army has redesigned the landfill cap and took over direct management of the landfill closure. The draft final ESD became available to the public in September 2011. The final ESD was signed in December 2012. The cap construction was completed in June 2012. The post-closure maintenance plan was approved in March 2012. An approved RA (construction) [RA(C)] completion report was completed in December 2015. LTM continues as part of the Post-Closure plan.

CLEANUP/EXIT STRATEGY

Post-closure maintenance (LTM) began in July 2012. The 2016 five-year review has been completed and the site remedy was determined to be protective of human health and the environment. The Army will monitor the land use restrictions, maintenance needs for the landfill cover, and controls annually. LTM activities include quarterly groundwater monitoring, biannual inspection of the cap, and annual soil gas sampling. The annual monitoring reports will be incorporated into the five-year review reports, to evaluate the effectiveness of the remedy and status of the LUCs, and to determine if the property complies with LUCs.

Site ID: MOTCO-001A
Site Name: Tidal Area Landfill Groundwater

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Metals

Media of Concern: Groundwater

Phases	Start	End
PA.....	199201.....	199301
SI.....	199401.....	199501
RI/FS.....	201012.....	201709

RIP Date: N/A

RC Date: 201709

SITE DESCRIPTION

This site encompasses the groundwater portion of site MOTCO-001. The tidal area landfill served as the primary disposal area for the Navy and surrounding communities from 1944 to 1979. The landfill is approximately 13 acres and contains an estimated 135,000 cubic yards of waste and soil cover. A performance-based acquisition (PBA) contract was awarded to complete the final RI report on the groundwater. The work plan has been prepared and submitted to regulatory review. The revised draft final groundwater RI report was submitted for agency review in July 2015. The final RI is anticipated by December 2016. The costs associated with LTM for groundwater will be covered under site MOTCO-001.

CLEANUP/EXIT STRATEGY

An RI/FS is scheduled for completion in December 2016 with anticipated post-closure maintenance LTM Remedial Action Completion Report (RACR) is being prepared that summarizes the actions in the RI and conclusions for closure of Site 1A groundwater under CERCLA.

Site ID: MOTCO-002
Site Name: R Area

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Metals

Media of Concern: Groundwater, Sediment, Soil, Surface Water

Phases	Start	End
PA.....	198301.....	198309
SI.....	199301.....	199309
RI/FS.....	199603.....	201109
LTM.....	201202.....	204609

RIP Date: N/A

RC Date: 201201

SITE DESCRIPTION

R Area (MOTCO-002), Froid and Taylor Roads (MOTCO-009), and Wood Hogger Site (MOTCO-011) (formerly known as Sites 2, 9, and 11) are collectively called the Tidal Area Sites and include both wetland and upland areas. In 1939, prior to Navy ownership, a meandering, east-west-trending slough flowed across the wetlands and marshlands of what is now MOTCO-002. A man-made sluice was constructed to channel water from MOTCO-002 to Suisun Bay. During construction of NAVWPNSTA Seal Beach DET Concord, the sluice, now known as Otter Slough, was backfilled and rerouted around MOTCO-002 and -011. From the mid-1940s to the mid-1970s, various types of disposal and incineration occurred at these sites. MOTCO-002 was formerly used as a disposal area for materials used to repackage munitions, including wood packing crates, munitions containers, steel banding, paint waste, and wood debris. From the late-1940s until about 1976, the area adjacent on the eastern side of Baker Road was used for disposal of materials generated during segregation of conventional munitions returned from Pacific operations. Segregation waste, including metal munitions casings and cans, and miscellaneous debris were observed during the RI on the ground surface and submerged beneath the water along Baker Road.

Based on the history of the site, groundwater, surface water, soil, and sediment samples were collected. The following chemicals were identified as COCs: metals, organochlorine (OC) pesticides, and PCB. R Area is surrounded by levees or developed land and consists of a large pond fringed with brackish and salt marsh habitat. Portions of the levee bordering the west side of the site (Baker Road) have settled and eroded so that standing water is now present year-round throughout most of R Area. The site is flooded during high tide. With the exception of personnel conducting environmental studies and possibly people maintaining an aboveground water line that crosses the property, the site is no longer used. The final PP was completed in March 2011 and the final ROD was signed in October 2011.

The Army agreed to USEPA's request to address potentially unacceptable risks to human health for unrestricted (residential) exposure to soil or sediment by proceeding to an FS to evaluate RA by LUCs or other potentially applicable actions. MOTCO-002 does not pose an unacceptable ecological risk to the environment or animal receptors. As a result, no action is required to address ecological risk.

The preferred remedial action documented in the June 2012 ROD included LUCs at Sites 2 and 9 and removal of mercury-contaminated soils followed by LUCs at Site 11. Excavation and offsite disposal of approximately 3,000 cubic yards of mercury-contaminated soil and sediment at Site 11 was completed in January 2013. The LUCs for Sites 2, 9, and 11 are limited to prohibiting residential development. The Army will monitor the land use restrictions annually. The annual monitoring reports will be incorporated into the five-year review reports, which evaluate the status of the LUCs and LUC compliance.

CLEANUP/EXIT STRATEGY

The Army will monitor the land use restrictions annually (LTM has been ongoing for two years). The annual monitoring reports will be incorporated into the five-year review reports, which evaluate the status of the LUCs and LUC compliance at Sites 2, 9, and 11. To synchronize these sites with other five-year review sites, MOTCO 002, 009, and 011 are included in the 2016 five-year review.

Site ID: MOTCO-003
Site Name: Kiln Site (Litigation Area)

STATUS

Regulatory Driver: CERCLA

RRSE:

Contaminants of Concern: Metals

Media of Concern: Soil

Phases	Start	End
PA.....	198301.....	198309
SI.....	198501.....	198612
RI/FS.....	198901.....	199903
RA(C).....	199509.....	199905
RA(O).....	199904.....	199905
LTM.....	201202.....	204609
RIP Date:	199905	
RC Date:	199905	

SITE DESCRIPTION

The Kiln Site is part of the Litigation Area. In the late-1960s and early-1970s, the Navy purchased several parcels of land to use as buffer zone for munitions loading operations. Eight of those parcels (307 acres) were subsequently found to contain metals contamination from waste disposal activities of the prior owners and historic spills from neighboring chemical companies. As a result, the Navy filed a lawsuit against the former property owners and reached a settlement that outlined cleanup responsibilities of the Navy and its neighbors. These parcels are now referred to as the Litigation Area. The Litigation Area consists primarily of tidal marshes with surrounding upland grassland and riparian areas, and supports significant populations of sensitive species, including the federal and state-listed endangered salt marsh harvest mouse and California black rail.

In 1991 the Navy and property owners entered into a consent decree. The parties agreed to clean up the properties to the soluble threshold limit concentration (STLC). Active remediation of the Litigation Area was conducted between 1992 and 1996. The Navy completed an RI of the Litigation Area and identified seven sites (3, 4, 5, 6, 25, 26, and 28) that required RA to address metals contamination in the soil. The Navy grouped these sites into one of four RASS and prepared an FS to evaluate RA alternatives. The Navy excavated and disposed of contaminated soil from Sites 3, 4, 5, 6, 25, 26, and 28 between 1992 and 1996. As part of the RD, the Navy implemented a monitoring plan to evaluate the effects and mobility of chemicals left in soil. From 1996 to 1999 the Navy performed the first four years of post-remediation monitoring, and divided the Litigation Area into 16 monitoring units.

A five-year periodic review assessment was completed in 2000 and the 2006 five-year assessment was completed in 2010. The next five-year assessment started in 2015 and will be finalized in 2016. Sites 3, 4, 5, 6, 25, 26, and 28 are currently in the fifteenth year of post-remediation monitoring (five years post-remediation monitoring and 10 years of revised post-remediation monitoring).

CLEANUP/EXIT STRATEGY

The site continues to be under LTM as part of the litigation area sites' monitoring program (MOTCO-028). Technical memorandums are prepared each year summarizing annual monitoring results.

Site ID: MOTCO-004
Site Name: Allied Chemical Site A

STATUS

Regulatory Driver: CERCLA

RRSE:

Contaminants of Concern: Metals

Media of Concern: Soil

Phases	Start	End
PA.....	198301.....	198309
SI.....	198501.....	198501
RI/FS.....	198901.....	198901
RA(C).....	199509.....	199904
RA(O).....	199901.....	199905
LTM.....	201202.....	204609
RIP Date:	199904	
RC Date:	199906	

SITE DESCRIPTION

The Allied Chemical Site A is part of the Litigation Area. In the late-1960s and early-1970s, the Navy purchased several parcels of land to use as buffer zone for munitions loading operations. Eight of those parcels (307 acres) were subsequently found to contain metals contamination from waste disposal activities of the prior owners and historic spills from neighboring chemical companies. As a result, the Navy filed a lawsuit against the former property owners and reached a settlement that outlined cleanup responsibilities of the Navy and its neighbors. These parcels are now referred to as the Litigation Area. The Litigation Area consists primarily of tidal marshes with surrounding upland grassland and riparian areas, and supports significant populations of sensitive species, including the federal and state-listed endangered salt marsh harvest mouse and California black rail.

In 1991, the Navy and property owners entered into a consent decree. The parties agreed to clean up the properties to the STLC. Active remediation of the Litigation Area was conducted between 1992 and 1996. The Navy completed an RI of the Litigation Area and identified seven sites (3, 4, 5, 6, 25, 26, and 28) that required RA to address metals contamination in soil. The Navy grouped these sites into one of four RASS and prepared an FS to evaluate RA alternatives. The Navy excavated and disposed of contaminated soil from Sites 3, 4, 5, 6, 25, 26, and 28 between 1992 and 1996. As part of the RD, the Navy implemented a monitoring plan to evaluate the effects and mobility of chemicals left in soil. From 1996 to 1999, the Navy performed the first four years of post-remediation monitoring, and divided the Litigation Area into 16 monitoring units.

A five-year periodic review assessment was completed in 2000 and the 2006 five-year assessment was completed in 2010. The next five-year assessment started in 2015 and will be finalized in 2016. Sites 3, 4, 5, 6, 25, 26, and 28 are currently in the fifteenth year of post-remediation monitoring (five years post-remediation monitoring and 10 years of revised post-remediation monitoring).

Site 4 (RASS 1) occupies several acres adjacent to the former Allied Chemical Corp. facility. The soils were found to be contaminated with high levels of arsenic, copper, cadmium, iron and lead.

CLEANUP/EXIT STRATEGY

The site continues to be under LTM as part of the litigation area sites' monitoring program (MOTCO-028). Technical memorandums are prepared each year summarizing annual monitoring results.

Site ID: MOTCO-005
Site Name: Allied Chemical Site B

STATUS

Regulatory Driver: CERCLA

RRSE:

Contaminants of Concern: Metals

Media of Concern: Soil

Phases	Start	End
PA.....	198301.....	198309
SI.....	198501.....	198501
RI/FS.....	198901.....	198901
RA(C).....	199509.....	199902
RA(O).....	199901.....	199902
LTM.....	201202.....	204609
RIP Date:	199902	
RC Date:	199905	

SITE DESCRIPTION

The Allied Chemical Site B is part of the Litigation Area. In the late-1960s and early-1970s, the Navy purchased several parcels of land to use as buffer zone for munitions loading operations. Eight of those parcels (307 acres) were subsequently found to contain metals contamination from waste disposal activities of the prior owners and historic spills from neighboring chemical companies. As a result, the Navy filed a lawsuit against the former property owners and reached a settlement that outlined cleanup responsibilities of the Navy and its neighbors. These parcels are now referred to as the Litigation Area. The Litigation Area consists primarily of tidal marshes with surrounding upland grassland and riparian areas, and supports significant populations of sensitive species, including the federal and state-listed endangered salt marsh harvest mouse and California black rail.

In 1991 the Navy and property owners entered into a consent decree. The parties agreed to clean up the properties to the STLC. Active remediation of the Litigation Area was conducted between 1992 and 1996. The Navy completed an RI of the Litigation Area and identified seven sites (3, 4, 5, 6, 25, 26, and 28) that required RA to address metals contamination in soil. The Navy grouped these sites into one of four RASS and prepared an FS to evaluate RA alternatives. The Navy excavated and disposed of contaminated soil from Sites 3, 4, 5, 6, 25, 26, and 28 between 1992 and 1996. As part of the RD, the Navy implemented a monitoring plan to evaluate the effects and mobility of chemicals left in soil. From 1996 to 1999 the Navy performed the first four years of post-remediation monitoring, and divided the Litigation Area into 16 monitoring units.

A five-year periodic review assessment was completed in 2000 and the 2006 five-year assessment was completed in 2010. The next five-year assessment started in 2015 and will be finalized in 2016. Sites 3, 4, 5, 6, 25, 26, and 28 are currently in the fifteenth year of post-remediation monitoring (five years post-remediation monitoring and 10 years of revised post-remediation monitoring).

Site 5 (RASS 1) occupies several acres adjacent to the former Allied Chemical Corp. facility. The soils were found to be contaminated with high levels of arsenic, copper, cadmium, iron and lead.

CLEANUP/EXIT STRATEGY

The site continues to be under LTM as part of the litigation area sites' monitoring program (MOTCO-028). Technical memorandums are prepared each year summarizing annual monitoring results.

Site ID: MOTCO-006
Site Name: Coke Pile Site

STATUS

Regulatory Driver: CERCLA

RRSE:

Contaminants of Concern: Metals

Media of Concern: Soil

Phases	Start	End
PA.....	198301.....	198309
SI.....	198501.....	198501
RI/FS.....	198901.....	198901
RA(C).....	199509.....	199901
RA(O).....	199901.....	199902
LTM.....	201202.....	204609
RIP Date:	199901	
RC Date:	199902	

SITE DESCRIPTION

The Coke Pile Site is part of the Litigation Area. In the late-1960s and early-1970s, the Navy purchased several parcels of land to use as buffer zone for munitions loading operations. Eight of those parcels (307 acres) were subsequently found to contain metals contamination from waste disposal activities of the prior owners and historic spills from neighboring chemical companies. As a result, the Navy filed a lawsuit against the former property owners and reached a settlement that outlined cleanup responsibilities of the Navy and its neighbors. These parcels are now referred to as the Litigation Area. The Litigation Area consists primarily of tidal marshes with surrounding upland grassland and riparian areas, and supports significant populations of sensitive species, including the federal and state-listed endangered salt marsh harvest mouse and California black rail.

In 1991 the Navy and property owners entered into a consent decree. The parties agreed to clean up the properties to the STLC. Active remediation of the Litigation Area was conducted between 1992 and 1996. The Navy completed an RI of the Litigation Area and identified seven sites (3, 4, 5, 6, 25, 26, and 28) that required RA to address metals contamination in soil. The Navy grouped these sites into one of four RASS and prepared an FS to evaluate RA alternatives. The Navy excavated and disposed of contaminated soil from Sites 3, 4, 5, 6, 25, 26, and 28 between 1992 and 1996. As part of the RD, the Navy implemented a monitoring plan to evaluate the effects and mobility of chemicals left in soil. From 1996 to 1999 the Navy performed the first four years of post-remediation monitoring, and divided the Litigation Area into 16 monitoring units.

A five-year periodic review assessment was completed in 2000 and the 2006 five-year assessment was completed in 2010. The next five-year assessment started in 2015 and will be finalized in 2016. Sites 3, 4, 5, 6, 25, 26, and 28 are currently in the fifteenth year of post-remediation monitoring (five years post-remediation monitoring and 10 years of revised post-remediation monitoring).

Site 6 (RASS 4) occupies 5 acres west of the former Allied Chemical Corp. facility. The soil was found to be contaminated with high levels of arsenic, copper, cadmium, iron and lead.

CLEANUP/EXIT STRATEGY

The site continues to be under LTM as part of the litigation area sites' monitoring program (MOTCO-028). Technical memorandums are prepared each year summarizing annual monitoring results.

Site ID: MOTCO-011

Site Name: Wood Hogger Site

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Metals

Media of Concern: Soil

Phases	Start	End
PA.....	198301.....	198309
SI.....	198401.....	198506
RI/FS.....	199801.....	201107
RA(C).....	201203.....	201309
LTM.....	201310.....	202009

RIP Date: N/A

RC Date: 201309

SITE DESCRIPTION

The R Area (MOTCO-002), Froid and Taylor Roads (MOTCO-009), and Wood Hogger Site (MOTCO-011), (formerly known as Sites 2, 9, and 11) are collectively called the Tidal Area Sites and include both wetland and upland areas. From the mid-1940s to the mid-1970s, various types of disposal and incineration occurred at these sites. Site MOTCO-011 is bordered by Froid Road to the North, an unnamed dirt road and asphalt road to the east, and by Otter Slough to the south and west. The center of the site is a rectangular area that was formerly developed as a storage yard for scrap metal, wood, and portable wood hoppers. The former storage area has been cleared; however, some existing buildings remain and portions of the area are paved. Other portions of the site consist of compacted ground that supports only a sparse cover of vegetation. With the exception of the occasional visits by security personnel and personnel conducting environmental studies, the site is no longer in use. The northern, southern, and eastern portions of the site are partially inundated and tidally influenced.

From the early-1950s to the early-1970s an incinerator was used to burn wood at the southwestern corner of the site. The concrete foundation of the incinerator remains on the site. Between 1969 and 1973, dunnage and other wood scrap from the Tidal Area operations were chipped using wood hogger equipment designed to shred wood. Some of the wood scraps chipped at the sites came from ordnance crates returned from Vietnam and were suspected to contain pentachlorophenol. The storage yard was identified as solid waste management unit (SWMU) 37 during the RFA conducted by DTSC in 1992. Locations adjacent to this SWMU were investigated as part of the RI to assess it as a potential source of site chemicals. Based on the history of the site, groundwater, surface water, soil, and sediment samples were collected. The following chemicals were identified as COCs: metals, OC pesticides, and PCBs.

During the 1990s the Navy completed an SI; collected soil, groundwater, and surface water for analysis as part of the RI and submitted an RI report and ecological risk assessment (ERA) for the sites formerly known as 2, 9 and 11. In 2003, the Navy and the regulatory agencies agreed additional samples should be collected to complete the RI report. The Navy collected additional samples and issued the updated revised draft final RI report in January 2008 and the final RI report was submitted in August 2008. The Army and the regulatory agencies agreed that Sites 2 and 9, should close under the up-coming ROD and Site 11 should proceed to an RD/RA to address risk to humans from contaminated soil. The Army agreed to USEPA's request to address potentially unacceptable risks to human health for unrestricted (residential) exposure to soil or sediment by producing in the FS an evaluation of RAs by LUCs or other potentially applicable means. MOTCO-011 does not pose unacceptable risk to humans under industrial exposure scenario assumptions. Soil and sediment at Site 11 contaminated with mercury poses unacceptable risk to benthic invertebrates and upper trophic level receptors. As a result, Site 11 was recommended for RA to address the unacceptable risk.

The preferred RA documented in the June 2012 final ROD included LUCs at Sites 2 and 9 and removal of mercury-contaminated soils followed by LUCs at Site 11. Excavation and offsite disposal of approximately 3,000 cubic yards of mercury-contaminated soil and sediment at Site 11 was completed in January 2013. The LUCs for Sites 2, 9, and 11 are limited to prohibiting residential development. The Army will monitor the land use restrictions annually. The annual monitoring reports will be incorporated into the five-year review reports, which evaluate the status of the LUCs and LUC compliance.

Site ID: MOTCO-011
Site Name: Wood Hogger Site

CLEANUP/EXIT STRATEGY

The Army will monitor the land use restrictions annually (LTM has been ongoing for two years). The annual monitoring reports will be incorporated into the five-year review reports, which evaluate the status of the LUCs and LUC compliance at Sites 2, 9, and 11. To synchronize these sites with other five-year review sites, MOTCO 002, 009, and 011 are included in the 2016 five-year review.

STATUS

Regulatory Driver: CERCLA

RRSE:

Contaminants of Concern: Metals

Media of Concern: Soil

Phases	Start	End
PA.....	198301.....	198309
SI.....	198501.....	198501
RI/FS.....	198909.....	198909
RA(C).....	199509.....	199902
RA(O).....	199901.....	199902
LTM.....	201202.....	204609
RIP Date:	199902	
RC Date:	199902	

SITE DESCRIPTION

The K-2 Area is part of the Litigation Area. In the late-1960s and early-1970s, the Navy purchased several parcels of land to use as buffer zone for munitions loading operations. Eight of those parcels (307 acres) were subsequently found to contain metals contamination from waste disposal activities of the prior owners and historic spills from neighboring chemical companies. As a result, the Navy filed a lawsuit against the former property owners and reached a settlement that outlined cleanup responsibilities of the Navy and its neighbors. These parcels are now referred to as the Litigation Area. The Litigation Area consists primarily of tidal marshes with surrounding upland grassland and riparian areas, and supports significant populations of sensitive species, including the federal and state-listed endangered salt marsh harvest mouse and California black rail.

In 1991, the Navy and property owners entered into a consent decree. The parties agreed to clean up the properties to the STLC. Active remediation of the Litigation Area was conducted between 1992 and 1996. The Navy completed an RI of the Litigation Area and identified seven sites (3, 4, 5, 6, 25, 26, and 28) that required RA to address metals contamination in soil. The Navy grouped these sites into one of four RASS and prepared an FS to evaluate RA alternatives. The Navy excavated and disposed of contaminated soil from Sites 3, 4, 5, 6, 25, 26, and 28 between 1992 and 1996. As part of the RD, the Navy implemented a monitoring plan to evaluate the effects and mobility of chemicals left in soil. From 1996 to 1999, the Navy performed the first four years of post-remediation monitoring, and divided the Litigation Area into 16 monitoring units.

Site 25 (RASS 3) lies along Nichols Creek. Chemical companies at one time dumped waste into Nichols Creek, resulting in the contamination at the site. The soil was found to be contaminated with high levels of arsenic, copper, cadmium, iron and lead.

A five-year periodic review assessment was completed in 2000 and the 2006 five-year assessment was completed in 2010. The next five-year assessment started in 2015 and will be finalized in 2016. Sites 3, 4, 5, 6, 25, 26, and 28 are currently in the fifteenth year of post-remediation monitoring (five years post-remediation monitoring and 10 years of revised post-remediation monitoring).

CLEANUP/EXIT STRATEGY

The site continues to be under LTM as part of the litigation area sites' monitoring program (MOTCO-028).

STATUS

Regulatory Driver: CERCLA

RRSE:

Contaminants of Concern: Metals

Media of Concern: Soil

Phases	Start	End
PA.....	198301.....	198309
SI.....	198501.....	198501
RI/FS.....	198901.....	198901
RA(C).....	199509.....	199902
RA(O).....	199901.....	199902
LTM.....	201202.....	204609
RIP Date:	199902	
RC Date:	199902	

SITE DESCRIPTION

In the late-1960s and early-1970s, the Navy purchased several parcels of land to use as buffer zone for munitions loading operations. Eight of those parcels (307 acres) were subsequently found to contain metals contamination from waste disposal activities of the prior owners and historic spills from neighboring chemical companies. Those parcels are now referred to as the Litigation Areas.

In 1991 the Navy and property owners entered into a consent decree. The parties agreed to clean up the properties to the STLCL. Active remediation of the Litigation Area was conducted between 1992 and 1996. The Navy completed an RI of the Litigation Area and identified seven sites (3, 4, 5, 6, 25, 26, and 28) that required RA to address metals contamination in soil. The Navy grouped these sites into one of four RASS and prepared an FS to evaluate RA alternatives. The Navy excavated and disposed of contaminated soil from Sites 3, 4, 5, 6, 25, 26, and 28 between 1992 and 1996.

The RD included a monitoring plan to monitor the effect and mobility of chemicals left in place. From 1995 to 1999, the Navy performed five years of post-remediation monitoring. A five-year periodic review assessment was conducted in 2000. Sites 3, 4, 5, 6, 25, 26, and 28 are currently in the eighth year of post-remediation monitoring.

Site 26 (RASS 3), a 6-acre site, was previously owned by Getty Oil. The soils were found to be contaminated with high levels of zinc and lead at the bottom of a sump.

A five-year periodic review assessment was completed in 2000 and the 2006 five-year assessment was completed in 2010. The next five-year assessment started in 2015 and will be finalized in 2016. Sites 3, 4, 5, 6, 25, 26, and 28 are currently in the fifteenth year of post-remediation monitoring (five years post-remediation monitoring and 10 years of revised post-remediation monitoring).

CLEANUP/EXIT STRATEGY

The site continues to be under LTM as part of the litigation area sites' monitoring program (MOTCO-028).

Site ID: MOTCO-028

Site Name: Litigation Area Monitoring

STATUS

Regulatory Driver: CERCLA

RRSE:

Contaminants of Concern: Metals

Media of Concern: Soil

Phases	Start	End
PA.....	198301.....	198309
SI.....	198501.....	198501
RI/FS.....	198901.....	198901
RA(C).....	199509.....	199902
RA(O).....	199901.....	199902
LTM.....	199912.....	204609

RIP Date: 199902

RC Date: 199902

SITE DESCRIPTION

In the late-1960s and early-1970s, the Navy purchased several parcels of land to use as buffer zone for munitions loading operations. Eight of those parcels (307 acres) were subsequently found to contain metals contamination from waste disposal activities of the prior owners and historic spills from neighboring chemical companies. As a result, the Navy filed a lawsuit against the former property owners and reached a settlement that outlined cleanup responsibilities of the Navy and its neighbors. These parcels are now referred to as the Litigation Area. The Litigation Area consists primarily of tidal marshes with surrounding upland grassland and riparian areas, and supports significant populations of sensitive species, including the federal and state-listed endangered salt marsh harvest mouse and California black rail.

In 1991, the Navy and property owners entered into a consent decree. The parties agreed to clean up the properties to the STLC. Active remediation of the Litigation Area was conducted between 1992 and 1996. The Navy completed an RI of the Litigation Area and identified seven sites (3, 4, 5, 6, 25, 26, and 28) that required RA to address metals contamination in soil. The Navy grouped these sites into one of four RASS and prepared an FS to evaluate RA alternatives. The Navy excavated and disposed of contaminated soil from Sites 3, 4, 5, 6, 25, 26, and 28 between 1992 and 1996. As part of the RD, the Navy implemented a monitoring plan to evaluate the effects and mobility of chemicals left in soil. From 1996 to 1999, the Navy performed the first four years of post-remediation monitoring, and divided the Litigation Area into 16 monitoring units.

Site 28 (RASS 3, also known as Site 34 in the supplemental FS) occupies several acres adjacent to the former Chemical Pigment Corp. and the former ESI Chemical Corp. facilities. The soil was found to be contaminated with high levels of arsenic, copper, cadmium, selenium, zinc, and lead. This site is where LTM costs are captured for Sites 3, 4, 5, 6, 25, 26, and 28. The sites are under a single monitoring agreement as part of a ROD with the regulators. The five-year review costs for the next five-year review is in the cost-to-complete estimate.

A five-year periodic review assessment was completed in 2000 and the 2006 five-year assessment was completed in 2010. The next five-year assessment started in 2015 and will be finalized in 2016. Sites 3, 4, 5, 6, 25, 26, and 28 are currently in the fifteenth year of post-remediation monitoring (five years post-remediation monitoring and 10 years of revised post-remediation monitoring).

CLEANUP/EXIT STRATEGY

This site is in year eight of LTM as mandated by the ROD. The estimate for this site includes the monitoring program for this site and sites MOTCO-003, MOTCO-004, MOTCO-005, MOTCO-006, MOTCO-025, and MOTCO-026. The five-year review of the litigation area site is underway. Technical memorandums are prepared each year summarizing annual monitoring results.

Site ID: MOTCO-031
Site Name: Former Fertilizer Plant

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Metals

Media of Concern: Soil

Phases	Start	End
PA.....	198301.....	198309
SI.....	199808.....	200207
RI/FS.....	200204.....	201203
RD.....	201203.....	201212
RA(C).....	201209.....	201712

RIP Date: N/A

RC Date: 201712

SITE DESCRIPTION

Site 31, a 17-acre site located near the Litigation Area site in the northeast portion of the installation, was used as a fertilizer plant from 1955 to 1976. The Navy acquired the property in 1983 to maintain a safety buffer around the munitions operations. The Navy first became aware of the contamination at the site when the Contra Costa water district installed a pump station on the site in 1998. Soil samples collected showed high levels of arsenic, selenium, lead and mercury. In 2002, 2,100 cubic yards of soil were excavated for disposal.

To assess the potential risk to ecological and human receptors, the Army completed an RI and an FS in December 2011. A contract for the RA(C) was awarded in September 2012. The performance work statement will take the site through closure in FY17. The signed ROD was finalized in June 2015. Groundwater investigations are handled under MOTCO-031A.

CLEANUP/EXIT STRATEGY

Per the ROD, the selected remedy for Site 31 is excavation and off-site disposal of an estimated 32,000 cubic yards of contaminated soil. Site 31 is currently in the RD phase of the CERCLA process, and remediation is scheduled for late 2016 early 2017 timeframe.

Site ID: MOTCO-031a

Site Name: Former Fertilizer Plant Groundwater

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Metals

Media of Concern: Groundwater

Phases	Start	End
PA.....	199501.....	199509
RI/FS.....	201203.....	201712

RIP Date: N/A

RC Date: 201712

SITE DESCRIPTION

Site is limited to the groundwater aspects of MOTCO-031. The site was created out of MOTCO-031 at the request of the FFA signatory parties after the RI/FS recommended further RI work be completed for groundwater. Site MOTCO-031A has the same background and site boundaries as MOTCO-031.

A contract for the RI/FS was awarded in September 2012. The RI/FS, PP, and ROD are planned for completion in late 2017.

CLEANUP/EXIT STRATEGY

The cleanup strategy includes completing an RI/FS to define the extent of arsenic contamination in groundwater and LTM. The FS is planned for submittal to the regulatory agencies in August 2017; the Army is currently developing a treatability study to provide additional data for the detailed analysis and to support the remedial alternatives in the FS.

Site Name: Unit 7 Mosquito Abatement Ditches

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Metals

Media of Concern: Sediment

Phases	Start	End
PA.....	198301.....	198309
SI.....	198401.....	198512
RI/FS.....	198601.....	201201
RD.....	200905.....	201208
RA(C).....	201103.....	201512
LTM.....	201512.....	204609

RIP Date: N/A

RC Date: 201512

SITE DESCRIPTION

The Unit 7 Mosquito Abatement Ditches are part of the Litigation Area. In the late-1960s and early-1970s, the Navy purchased several parcels of land to use as buffer zone for munitions loading operations. Eight of those parcels (307 acres) were subsequently found to contain metals contamination from waste disposal activities of the prior owners and historic spills from neighboring chemical companies. As a result, the Navy filed a lawsuit against the former property owners and reached a settlement that outlined cleanup responsibilities of the Navy and its neighbors. These parcels are now referred to as the Litigation Area. The Litigation Area consists primarily of tidal marshes with surrounding upland grassland and riparian areas, and supports significant populations of sensitive species, including the federal and state-listed endangered salt marsh harvest mouse and California black rail.

In 1991 the Navy and property owners entered into a consent decree. The parties agreed to clean up the properties to the STLC. Active remediation of the Litigation Area was conducted between 1992 and 1996. The Navy completed an RI of the Litigation Area and identified seven sites (3, 4, 5, 6, 25, 26, and 28) that required RA to address metals contamination in soil. The Navy grouped these sites into one of four RASS and prepared an FS to evaluate RA alternatives. The Navy excavated and disposed of contaminated soil from Sites 3, 4, 5, 6, 25, 26, and 28 between 1992 and 1996. As part of the RD, the Navy implemented a monitoring plan to evaluate the effects and mobility of chemicals left in soil. From 1996 to 1999, the Navy performed the first four years of post-remediation monitoring, and divided the Litigation Area into 16 monitoring units.

The 2010 five-year review identified Site 32 as an area not protective of ecological receptors and the Navy began a supplemental FS to assess the possible RAs for the site. The Army and regulatory agencies have agreed to supplemental FS. A submitted PP and signed ROD to complete a capping action was completed in January 2013. The RA(C) fieldwork was completed in November 2015.

CLEANUP/EXIT STRATEGY

Our cleanup strategy for this site includes capping of contaminated sediment. The RA for Sites 32 and 33 is scheduled for completion in late 2016; the Army is currently preparing the RACR. These sites are subject to five-year review and annual LTM by the Army. Sites 32 and 33 were evaluated in the 2016 five-year review and are expected to be protective of human health and the environment when it is completed.

Site ID: MOTCO-033
Site Name: Lost Slough

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Metals

Media of Concern: Sediment

Phases	Start	End
PA.....	198301.....	198309
SI.....	198401.....	198503
RI/FS.....	198606.....	201201
RD.....	200905.....	201208
RA(C).....	201101.....	201512
LTM.....	201512.....	204609

RIP Date: N/A

RC Date: 201512

SITE DESCRIPTION

Unit 10 of the Lost Slough is part of the Litigation Area. In the late-1960s and early-1970s, the Navy purchased several parcels of land to use as buffer zone for munitions loading operations. Eight of those parcels (307 acres) were subsequently found to contain metals contamination from waste disposal activities of the prior owners and historic spills from neighboring chemical companies. As a result, the Navy filed a lawsuit against the former property owners and reached a settlement that outlined cleanup responsibilities of the Navy and its neighbors. These parcels are now referred to as the Litigation Area. The Litigation Area consists primarily of tidal marshes with surrounding upland grassland and riparian areas, and supports significant populations of sensitive species, including the federal and state-listed endangered salt marsh harvest mouse and California black rail.

In 1991 the Navy and property owners entered into a consent decree. The parties agreed to clean up the properties to the STLC. Active remediation of the litigation area was conducted between 1992 and 1996. The Navy completed an RI of the Litigation Area and identified seven sites (3, 4, 5, 6, 25, 26, and 28) that required RA to address metals contamination in soil. The Navy grouped these sites into one of four RASS and prepared an FS to evaluate RA alternatives. The Navy excavated and disposed of contaminated soil from Sites 3, 4, 5, 6, 25, 26, and 28 between 1992 and 1996. As part of the RD, the Navy implemented a monitoring plan to evaluate the effects and mobility of chemicals left in soil. From 1996 to 1999, the Navy performed the first four years of post-remediation monitoring, and divided the Litigation Area into 16 monitoring units.

The 2010 five-year review identified Site 33 as an area not protective of ecological receptors and the Navy began a supplemental FS to assess the possible RAs for the site. The Army and regulatory agencies have agreed to supplemental FS. A submitted PP and signed ROD for the sediment capping of the contaminated portion of the slough was completed in January 2013. The RA(C) fieldwork was completed in November 2015.

CLEANUP/EXIT STRATEGY

Our cleanup strategy for this site includes capping of contaminated sediment. The RA for Sites 32 and 33 is scheduled for completion in late 2016; the Army is currently preparing the RACR. These sites are subject to five-year review and annual LTM by the Army. Sites 32 and 33 were evaluated in the 2016 five-year review and are expected to be protective of human health and the environment when it is completed.

Site ID: MOTCO-038
Site Name: Port Chicago Main Street Dump

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Other (Railroad waste and demolition debris.)

Media of Concern: Soil

Phases	Start	End
PA.....	200801.....	200801
SI.....	201006.....	201209
RI/FS.....	201406.....	201903

RIP Date: N/A

RC Date: 202009

SITE DESCRIPTION

The former Main Street Dump area is located in the Tidal Area along Main Street in the former civilian community of Port Chicago. The dump site is located in an open, grassy area that is approximately 12 acres in size. Debris includes creosote painted railroad ties, demolition debris, and railroad wastes. An underground fire occurred at the site as the result of a brush fire. The Army has completed an SI and has recommended that an RI/FS be conducted to evaluate the risk and the agencies have concurred.

The RI/FS will generate a more complete understanding of the nature and extent of contamination associated with wastes present at Site 38. With the advantage of more detailed site information, a more complete human health risk assessment and a more complete ecological risk assessment can be performed to determine if remedial action is appropriate for the contaminated wastes, soils, and groundwater at Site 38.

CLEANUP/EXIT STRATEGY

The Army will be conducting the RI field investigation the fall of 2016. Draft RI reports for Sites 38 and 40 are scheduled for submittal to the regulatory agencies by the end of May 2017.

Site ID: MOTCO-040
Site Name: Former Copper Smelter

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals

Media of Concern: Sediment, Soil

Phases	Start	End
PA.....	200801.....	200801
SI.....	201006.....	201206
RI/FS.....	201506.....	201903

RIP Date: N/A

RC Date: 202009

SITE DESCRIPTION

The Former Copper Smelter is was part of a 19th century ship building operation located on Seal Bluff. The potential concern is heavy metal contamination of soil and sediment. The SI work plan was submitted to the regulatory team and fieldwork began in October 2011, and the final SI report was completed in June 2012. Data from the SI indicates heavy metals are present at levels that will require a RI/FS.

The RI/FS will generate a more complete understanding of the nature and extent of contamination associated with wastes present at Site 40. With the advantage of more detailed site information, a more complete human health risk assessment and a more complete ecological risk assessment can be performed to determine if remedial action is appropriate for the contaminated wastes, soils, and groundwater at Site 40.

CLEANUP/EXIT STRATEGY

The Army will be conducting the RI field investigation the in fall of 2016. Draft RI reports for Sites 38 and 40 are scheduled for submittal to the regulatory agencies by the end of May 2017.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
MOTCO-007	Legacy Navy site SITE 00007	200009	During the Initial Assessment Study (IAS) in 1983, the Navy determined that the munitions located on the bottom of the berthing docks and in the marsh do not threaten human health or the endangered species in the area. The IAS stated that further investigation under the Navy Assessment and Control of Installation Pollutants (NACIP) is not warranted. It should be noted that this area is currently being evaluated under the Army's munitions response program.
MOTCO-008	Ryer Island	200009	During the IAS in 1983, the Navy determined that the munitions located on the bottom of the berthing docks and in the marsh do not threaten human health or the endangered species in the area. The IAS stated that further investigation under the NACIP is not warranted. It should be noted that this area is currently being evaluated under the Army's munitions response program.
MOTCO-009	Froid and Taylor Roads	201109	LTM and LUCs exist.
MOTCO-010	Legacy Navy site SITE 00010	200009	Sampling conducted for the IAS showed no contamination. The IAS concluded that further investigation under the NACIP is not warranted.
MOTCO-012	Legacy Navy site SITE 00012	200009	From IAS, Because Port Chicago was a small, non-industrial town, it is highly unlikely that any threat to the environments exists from the razing of the town or from any residual materials in the town. As such, further study under the NACIP program is not warranted. Note the Army is currently conducting a site investigation of a disposal area in the former Port Chicago area (Site 38).
MOTCO-014	Kinne Boulevard Wells	200009	From IAS, The water supply wells were determine be unlikely that any threat to the environments exists from the razing of the town or from any residual materials in the town. As such, further study under the NACIP program is not warranted.
MOTCO-015	Legacy Navy site SITE 00015	200009	Sampling conducted for the IAS showed no contamination. The IAS concluded that further investigation under the NACIP is not warranted.
MOTCO-016	Red Rock Disposal Area	200009	Sampling conducted for the IAS showed no contamination. The IAS concluded that further investigation under the NACIP is not warranted.
MOTCO-017	Bldgs. IA-24 and IA-24A	200509	The building were removed and Baseline Environmental Survey was conducted. The BES concluded that further investigation is not warranted.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
MOTCO-018	Legacy Navy site SITE 00018	200009	Sampling conducted for the IAS showed no contamination. The IAS concluded that further investigation under the NACIP is not warranted.
MOTCO-019	Legacy Navy site SITE 00019	200009	Sampling conducted for the IAS showed no contamination. The IAS concluded that further investigation under the NACIP is not warranted.
MOTCO-020	Legacy Navy site SITE 00020	200009	Sampling conducted for the IAS showed no contamination. The IAS concluded that further investigation under the NACIP is not warranted.
MOTCO-021	Legacy Navy site SITE 00021	200009	Sampling conducted for the IAS showed no contamination. The IAS concluded that further investigation under the NACIP is not warranted.
MOTCO-026A	G-1 Area Groundwater	201512	Closure letter from the Water Board issued March 2016
MOTCO-027	Building 1A-20	200410	No Information has been found yet, found the Navy records.
MOTCO-030	Taylor Blvd Bridge Disposal Site	200912	December 2009 Closure Report
MOTCO-034	Nichols Creek and Erosional Areas	200811	The January 2008 Final Supplemental FS for the Litigation Area found that this site is the same as MOTCO-028. As a result, MOTCO-034 was closed.
MOTCO-035	A16 and E108	201010	Closure Letter from the CRWQB (Water Board) issued April 2011.
MOTCO-036	Port Chicago Highway Site	201409	Closure letter from the Water Board issued May 2015.
MOTCO-037	TT-21 A, B and C	201503	Closure letter from the Water Board issued December 2012.
MOTCO-039	Former Dry Cleaning Facility @E103	201312	Closed under the SI. Agency concurrence documented in November 2012 final SI.
MOTCO-231	Southern Boundry Ordnance Disposal	199305	Site located on the Navy BRAC Closure property.
MOTCO-232	Eastern Boundry Ordnance Disposal	200009	Site located on the Navy BRAC Closure property.
MOTCO-241	Pistol Range	200009	Site located on the Navy BRAC Closure property.
MOTCO-242	Aircraft Range	200009	Site located on the Navy BRAC Closure property.
MOTCO-246	Building IA-41	200009	Site located on the Navy BRAC Closure property.
MOTCO-254	UNOCAL Easement Site	200009	Site located on the Navy BRAC Closure property.
MOTCO-255	Building 6LC98	200009	Site located on the Navy BRAC Closure property.
MOTCO-256	Building 174 Electric Substation	200009	Site located on the Navy BRAC Closure property.
MOTCO-257	Q Area Building 350	200009	During the IAS in 1983, the Navy determined that no munitions were associated with the building. The IAS stated that further investigation under the NACIP is not warranted. It should be noted that this area is currently being

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
			evaluated under the Army's munitions response program.
MOTCO-258	Service Station	200009	Site located on the Navy BRAC Closure property.
MOTCO-259	Buildings A-3A and E-111	200703	UST Closure letter issued from both RWQCB and Contra Costa County in August 2004.
PBA@MOTCO	PBA@MOTCO IR Sites	201203	This is not a site.

IRP Schedule

Date of IRP Inception: 198203

Past Phase Completion Milestones

1983

PA (MOTCO-002 - R Area, MOTCO-003 - Kiln Site (Litigation Area), MOTCO-004 - Allied Chemical Site A, MOTCO-005 - Allied Chemical Site B, MOTCO-006 - Coke Pile Site , MOTCO-007 - Legacy Navy site SITE 00007, MOTCO-008 - Ryer Island, MOTCO-009 - Froid and Taylor Roads, MOTCO-010 - Legacy Navy site SITE 00010, MOTCO-011 - Wood Hogger Site, MOTCO-012 - Legacy Navy site SITE 00012, MOTCO-014 - Kinne Boulevard Wells, MOTCO-015 - Legacy Navy site SITE 00015, MOTCO-018 - Legacy Navy site SITE 00018, MOTCO-019 - Legacy Navy site SITE 00019, MOTCO-020 - Legacy Navy site SITE 00020, MOTCO-021 - Legacy Navy site SITE 00021, MOTCO-025 - K-2 Area, MOTCO-026 - G-1 Area, MOTCO-028 - Litigation Area Monitoring, MOTCO-030 - Taylor Blvd Bridge Disposal Site, MOTCO-031 - Former Fertilizer Plant, MOTCO-032 - Unit 7 Mosquito Abatement Ditches, MOTCO-033 - Lost Slough, MOTCO-034 - Nichols Creek and Erosional Areas)

SI (MOTCO-007 - Legacy Navy site SITE 00007, MOTCO-008 - Ryer Island, MOTCO-010 - Legacy Navy site SITE 00010, MOTCO-012 - Legacy Navy site SITE 00012, MOTCO-014 - Kinne Boulevard Wells, MOTCO-015 - Legacy Navy site SITE 00015, MOTCO-018 - Legacy Navy site SITE 00018, MOTCO-019 - Legacy Navy site SITE 00019, MOTCO-020 - Legacy Navy site SITE 00020, MOTCO-021 - Legacy Navy site SITE 00021)

1985

SI (MOTCO-004 - Allied Chemical Site A, MOTCO-005 - Allied Chemical Site B, MOTCO-006 - Coke Pile Site , MOTCO-009 - Froid and Taylor Roads, MOTCO-011 - Wood Hogger Site, MOTCO-025 - K-2 Area, MOTCO-026 - G-1 Area, MOTCO-028 - Litigation Area Monitoring, MOTCO-033 - Lost Slough, MOTCO-034 - Nichols Creek and Erosional Areas)

1986

SI (MOTCO-032 - Unit 7 Mosquito Abatement Ditches)

1987

SI (MOTCO-003 - Kiln Site (Litigation Area))

1989

RI/FS (MOTCO-004 - Allied Chemical Site A, MOTCO-005 - Allied Chemical Site B, MOTCO-006 - Coke Pile Site , MOTCO-025 - K-2 Area, MOTCO-026 - G-1 Area, MOTCO-028 - Litigation Area Monitoring)

1993

ISC (MOTCO-035 - A16 and E108, MOTCO-037 - TT-21 A, B and C)

PA (MOTCO-001 - Tidal Area Landfill, MOTCO-001A - Tidal Area Landfill Groundwater, MOTCO-017 - Bldgs. IA-24 and IA-24A, MOTCO-026A - G-1 Area Groundwater, MOTCO-027 - Building 1A-20, MOTCO-231 - Southern Boundry Ordnance Disposal, MOTCO-232 - Eastern Boundry Ordnance Disposal, MOTCO-241 - Pistol Range, MOTCO-242 - Aircraft Range)

SI (MOTCO-002 - R Area, MOTCO-017 - Bldgs. IA-24 and IA-24A, MOTCO-027 - Building 1A-20, MOTCO-030 - Taylor Blvd Bridge Disposal Site, MOTCO-231 - Southern Boundry Ordnance Disposal, MOTCO-232 - Eastern Boundry Ordnance Disposal, MOTCO-241 - Pistol Range, MOTCO-242 - Aircraft Range)

1995

SI (MOTCO-001 - Tidal Area Landfill, MOTCO-001A - Tidal Area Landfill Groundwater)

INV (MOTCO-035 - A16 and E108, MOTCO-037 - TT-21 A, B and C)

IRA (MOTCO-014 - Kinne Boulevard Wells)

PA (MOTCO-031a - Former Fertilizer Plant Groundwater, PBA@MOTCO - PBA@MOTCO IR Sites)

1996

PA (MOTCO-016 - Red Rock Disposal Area, MOTCO-258 - Service Station)

SI (MOTCO-016 - Red Rock Disposal Area, MOTCO-258 - Service Station)

1997

IRA (MOTCO-256 - Building 174 Electric Substation)

RI/FS (MOTCO-259 - Buildings A-3A and E-111)

RD (MOTCO-259 - Buildings A-3A and E-111)

SI (MOTCO-246 - Building IA-41, MOTCO-254 - UNOCAL Easement Site, MOTCO-255 - Building 6LC98, MOTCO-256 - Building 174 Electric Substation, MOTCO-257 - Q Area Building 350, MOTCO-259 - Buildings

	A-3A and E-111)
PA	(MOTCO-246 - Building IA-41, MOTCO-254 - UNOCAL Easement Site, MOTCO-255 - Building 6LC98, MOTCO-256 - Building 174 Electric Substation, MOTCO-257 - Q Area Building 350, MOTCO-259 - Buildings A-3A and E-111)
1999	
RA(O)	(MOTCO-003 - Kiln Site (Litigation Area), MOTCO-004 - Allied Chemical Site A, MOTCO-005 - Allied Chemical Site B, MOTCO-006 - Coke Pile Site , MOTCO-025 - K-2 Area, MOTCO-026 - G-1 Area, MOTCO-028 - Litigation Area Monitoring)
RI/FS	(MOTCO-003 - Kiln Site (Litigation Area))
RA(C)	(MOTCO-003 - Kiln Site (Litigation Area), MOTCO-004 - Allied Chemical Site A, MOTCO-005 - Allied Chemical Site B, MOTCO-006 - Coke Pile Site , MOTCO-025 - K-2 Area, MOTCO-026 - G-1 Area, MOTCO-028 - Litigation Area Monitoring)
2000	
RI/FS	(MOTCO-007 - Legacy Navy site SITE 00007, MOTCO-008 - Ryer Island, MOTCO-010 - Legacy Navy site SITE 00010, MOTCO-012 - Legacy Navy site SITE 00012, MOTCO-014 - Kinne Boulevard Wells, MOTCO-015 - Legacy Navy site SITE 00015, MOTCO-016 - Red Rock Disposal Area, MOTCO-017 - Bldgs. IA-24 and IA-24A, MOTCO-018 - Legacy Navy site SITE 00018, MOTCO-019 - Legacy Navy site SITE 00019, MOTCO-020 - Legacy Navy site SITE 00020, MOTCO-021 - Legacy Navy site SITE 00021, MOTCO-027 - Building 1A-20, MOTCO-232 - Eastern Boundry Ordnance Disposal, MOTCO-241 - Pistol Range, MOTCO-242 - Aircraft Range, MOTCO-246 - Building IA-41, MOTCO-254 - UNOCAL Easement Site, MOTCO-255 - Building 6LC98, MOTCO-256 - Building 174 Electric Substation, MOTCO-257 - Q Area Building 350, MOTCO-258 - Service Station)
2001	
ISC	(MOTCO-036 - Port Chicago Highway Site)
RA(C)	(MOTCO-259 - Buildings A-3A and E-111)
2002	
SI	(MOTCO-031 - Former Fertilizer Plant)
2005	
CAP	(MOTCO-035 - A16 and E108)
LTM	(MOTCO-017 - Bldgs. IA-24 and IA-24A, MOTCO-027 - Building 1A-20)
RI/FS	(MOTCO-030 - Taylor Blvd Bridge Disposal Site)
DES	(MOTCO-035 - A16 and E108)
2007	
LTM	(MOTCO-259 - Buildings A-3A and E-111)
IMP(C)	(MOTCO-035 - A16 and E108)
2008	
DES	(MOTCO-037 - TT-21 A, B and C)
CAP	(MOTCO-037 - TT-21 A, B and C)
RD	(MOTCO-001 - Tidal Area Landfill)
IMP(C)	(MOTCO-037 - TT-21 A, B and C)
PA	(MOTCO-038 - Port Chicago Main Street Dump, MOTCO-039 - Former Dry Cleaning Facility @E103, MOTCO-040 - Former Copper Smelter)
RI/FS	(MOTCO-001 - Tidal Area Landfill)
2009	
RI/FS	(MOTCO-034 - Nichols Creek and Erosional Areas)
2010	
RA(C)	(MOTCO-030 - Taylor Blvd Bridge Disposal Site)

IRP Schedule

2011

SI (MOTCO-026A - G-1 Area Groundwater, PBA@MOTCO - PBA@MOTCO IR Sites)
 LTM (MOTCO-035 - A16 and E108)
 RI/FS (MOTCO-002 - R Area, MOTCO-009 - Froid and Taylor Roads, MOTCO-011 - Wood Hogger Site)

2012

IMP(O) (MOTCO-037 - TT-21 A, B and C)
 RI/FS (MOTCO-031 - Former Fertilizer Plant, MOTCO-032 - Unit 7 Mosquito Abatement Ditches, MOTCO-033 - Lost Slough, PBA@MOTCO - PBA@MOTCO IR Sites)
 SI (MOTCO-038 - Port Chicago Main Street Dump, MOTCO-040 - Former Copper Smelter)
 RA(C) (PBA@MOTCO - PBA@MOTCO IR Sites)
 RD (MOTCO-032 - Unit 7 Mosquito Abatement Ditches, MOTCO-033 - Lost Slough, PBA@MOTCO - PBA@MOTCO IR Sites)
 RA(O) (PBA@MOTCO - PBA@MOTCO IR Sites)

2013

RD (MOTCO-031 - Former Fertilizer Plant)
 RI/FS (MOTCO-026A - G-1 Area Groundwater)
 RA(C) (MOTCO-001 - Tidal Area Landfill, MOTCO-011 - Wood Hogger Site)

2014

SI (MOTCO-039 - Former Dry Cleaning Facility @E103)
 INV (MOTCO-036 - Port Chicago Highway Site)

2015

LTM (MOTCO-037 - TT-21 A, B and C)

Projected Phase Completion Milestones

See attached schedule

Projected Record of Decision (ROD)/Decision Document (DD) Approval Dates

Site ID	Site Name	ROD/DD Title	ROD/DD Date
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Final RA(C) Completion Date: 201712

Schedule for Next Five-Year Review: 2016

Estimated Completion Date of IRP at Installation (including LTM phase): 204609

MILITARY OCEAN TERMINAL CONCORD IRP Schedule

[Green Box] = phase underway

SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MOTCO-001	Tidal Area Landfill	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MOTCO-001A	Tidal Area Landfill Groundwater	RI/FS						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MOTCO-002	R Area	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MOTCO-003	Kiln Site (Litigation Area)	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MOTCO-004	Allied Chemical Site A	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MOTCO-005	Allied Chemical Site B	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MOTCO-006	Coke Pile Site	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MOTCO-011	Wood Hogger Site	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MOTCO-025	K-2 Area	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MOTCO-026	G-1 Area	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MOTCO-028	Litigation Area Monitoring	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MOTCO-031	Former Fertilizer Plant	RA(C)						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MOTCO-031a	Former Fertilizer Plant Groundwater	RI/FS						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MOTCO-032	Unit 7 Mosquito Abatement Ditches	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MOTCO-033	Lost Slough	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MOTCO-038	Port Chicago Main Street Dump	RI/FS						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MOTCO-040	Former Copper Smelter	RI/FS						

MILITARY OCEAN TERMINAL CONCORD
Army Defense Environmental Restoration Program
Military Munitions Response Program

MMRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 4/1

Installation Site Types with Future and/or Underway Phases

- 1 Open Burn
(MOTCO-007-R-01)
- 2 Unexploded Munitions/Ordnance
(MOTCO-008-R-01, MOTCO-010-R-01)

Most Widespread Contaminants of Concern

Munitions and explosives of concern (MEC), Munitions constituents (MC)

Media of Concern

Groundwater, Sediment, Soil

Completed Remedial Actions (Interim Remedial Actions/ Final Remedial Actions (IRA/FRA))

Site ID	Site Name	Action	Remedy	FY
N/A				

Duration of MMRP

Date of MMRP Inception 200303

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201712/201712

Date of MMRP completion including Long Term Management (LTM): 201712

MMRP Contamination Assessment

Contamination Assessment Overview

Environmental investigations and cleanup began on NAVWPNSTA Seal Beach DET Concord in 1983 and continue today. Initially led by the Navy (and now taken over by the Army), the environmental team carrying out these activities at MOTCO includes representatives from the Army, the USEPA, the Cal/EPA, and other federal, state, and local natural resource trustees. Cleanup activities at all Military Munitions Response Program (MMRP) sites follow the basic CERCLA process.

The Navy completed a PA in August 2007. The report identified three MMRP sites in the Tidal Area: the Tidal Explosive Ordnance Disposal (EOD) above area Q, the Port Chicago Tidal Area, and the Suisun Bay Impact Area, sites MOTCO-007-R-01, MOTCO-008-R-01, and MOTCO-010-R-01, respectively.

The Navy had used the tidal area as an ammunition transfer facility since 1942, and continued with that use until the Army established MOTCO in the Tidal Area in 2001. In 1944 there was an explosion at the former Pier 1 involving two ships and more than 5,000 tons of ammunition. The ships berthed at the pier were the S.S. Quinault Victory and the A.E. Bryan. There were also 13 boxcars, partially unloaded or awaiting unloading of munitions near the pier. The accident killed 320 people, injured another 390, and caused more than 12 million dollars in property damage. The explosion was felt as far as 40 miles away. Smoldering metal and unexploded ordnance (UXO) from the explosion landed as far as 2 miles from the blast site. The area of potential MEC impact is unknown, but is estimated to be 4,945 acres in the Port Chicago Tidal Area (including three islands offshore) and 4,830 acres in Suisun Bay. An emergency response action was performed immediately after the explosion, and EOD operations have addressed discoveries of MEC items in the marsh and on the islands since then.

MOTCO-007, 008, and 010:

COPCs: MC and MEC.

Current Status: The RI phase is underway. The RI field investigation at MRSs 7, 8, and 10 was completed in October 2014. The draft RI was submitted in April 2015.

Cleanup Exit Strategy

In order to characterize the MMRP sites, an RI/FS was started in 2012. Per Section 22 of the Federal Facility Agreement, the USEPA invoked informal dispute resolution on the draft final MMRP RI on Dec. 30, 2015. The Army and the regulatory agencies have met on a number of occasions to resolve the dispute and are close to resolution. The date of the final RI is to be established based on the informal dispute resolution. A more detailed cleanup exit strategy will be developed pending the results of the final RI/FS.

MMRP Previous Studies

Year	Title	Author	Date
2007	Final Health and Safety Plan, Tidal Area Site 11, MEC Clearance and Data Gaps Sampling, Naval Weapons Station Seal Beach Detachment Concord, Concord, California	Tetra Tech EM Inc.	JUN-2007
	Final Preliminary Assessment Military Munitions Response Program Naval Weapons Station Seal Beach Detachment Concord, Concord, California August 2007	Malcolm Pirnie Inc.	AUG-2007
2008	Final Site Inspection Work Plan for the Tidal Area MMRP Sites 7 (EOD Above Q Area), 8 (Port Chicago Tidal Area), and 10 (Suisun Bay Impact Area), Tidal Area, Naval Weapons Station Seal Beach Detachment Concord, Concord, California	Tetra Tech EM Inc.	AUG-2008
2010	Draft MRP Historical Record Review and SI Report	Malcolm Pirnie, Inc.	JAN-2010
2011	DRAFT WORK PLAN MMRP REMEDIAL INVESTIGATION/ FEASIBILITY STUDY AT MOTCO	Parsons	NOV-2011
2012	DRAFT FINAL WORK PLAN MMRP REMEDIAL INVESTIGATION/ FEASIBILITY STUDY AT MOTCO	Parsons	MAR-2012
2013	FINAL WORK PLAN - MILITARY MUNITIONS RESPONSE PROGRAM REMEDIAL INVESTIGATION/ FEASIBILITY STUDY AT MOTCO	Parsons	JAN-2013
2015	DRAFT MILITARY MUNITIONS RESPONSE PROGRAM REMEDIAL INVESTIGATION REPORT FOR THE MUNITIONS RESPONSE SITES	Parsons	APR-2015

MILITARY OCEAN TERMINAL CONCORD
Military Munitions Response Program
Site Descriptions

Site ID: MOTCO-007-R-01
Site Name: Explosive Ordnance Disposal Q Area

STATUS

Regulatory Driver: CERCLA
MRSPP Score: Evaluation pending
Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)
Media of Concern: Soil

Phases	Start	End
PA.....	200501.....	200707
SI.....	200909.....	201101
RI/FS.....	201103.....	201712
RIP Date:	N/A	
RC Date:	201712	

SITE DESCRIPTION

The EOD Q Area covers 135 acres and was reported to have been used as an open burn/open detonation area beginning in the 1970s. Due to its location, there is also the potential for munitions relating to the 1944 explosion to be found at this site. In order to characterize the site, an Army SI was initiated in 2009 and completed in January 2011. The RI/FS contract was awarded, and the contractor began work in July 2011 and the fieldwork began in September 2012 and was completed in summer 2014. Future cleanup is not anticipated. The draft RI was issued in April 2015. The RI report was disputed by the EPA in Dec 15. The Army and the regulatory agencies have met on a number of occasions to resolve the dispute and are close to resolution. The date of the final RI is to be established based on the informal dispute resolution.

CLEANUP/EXIT STRATEGY

After the current RI/FS phase is completed, no removal work is anticipated to close the site, based on data from the RI work conducted to date.

Site ID: MOTCO-008-R-01
Site Name: Port Chicago Tidal Area Explosions

STATUS

Regulatory Driver: CERCLA
MRSPP Score: Evaluation pending
 Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)
 Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	200501.....	200707
SI.....	200909.....	201101
RI/FS.....	201103.....	201712
RIP Date:	N/A	
RC Date:	201712	

SITE DESCRIPTION

The Port Chicago Tidal Area encompasses terrestrial portions of the Tidal Area and associated islands in Suisun Bay that are within the impact area of the 1944 explosion. Site MOTCO-008 encompasses 5,232 acres. The Port Chicago Tidal Area had been in use as an ammunition transfer facility from 1942 to the present. The RI/FS contract was awarded and fieldwork began in September 2012 and was completed in October 2014. Although future cleanup is anticipated, cost and technologies cannot accurately be determined until the RI/FS is complete. The draft RI was issued in April 2015. The RI report was disputed by the EPA in Dec 15. The Army and the regulatory agencies have met on a number of occasions to resolve the dispute and are close to resolution. The date of the final RI is to be established based on the informal dispute resolution.

CLEANUP/EXIT STRATEGY

Although MEC and MC are believed present in the marshes, due to the sensitive nature of these areas, future intrusive RAs in the near term are not likely. Conversely, future RAs on the developable land areas in MOTCO will be needed to address MEC and potential MC risks. The percentage of the property that the RAs will entail is unknown at this time. However, based on previous information, it is highly probable that subsurface ordnance is present on MOTCO. The volume of subsurface MEC is dependent on the trajectory, angle and orientation of the projectiles at impact. A certain amount of the subsurface MEC has, over the years, migrated to the surface as a result of ground movement. The amount of subsurface ordnance is thought to represent approximately 5 percent of the developable area. It is anticipated that removal work will be limited to developable areas. A more detailed cleanup exit strategy will be developed pending the results of the RI/FS.

Site ID: MOTCO-010-R-01
Site Name: Suisun Bay Impact Area

STATUS

Regulatory Driver: CERCLA
MRSPP Score: Evaluation pending
Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)
Media of Concern: Sediment

Phases	Start	End
PA.....	200501.....	200707
SI.....	200909.....	201101
RI/FS.....	201103.....	201712
RIP Date:	N/A	
RC Date:	201712	

SITE DESCRIPTION

Site MOTCO-010, Suisun Bay Impact Area encompasses 5,018 aquatic acres in Suisun Bay and extends from the former pier to the west, north and east in a 12,000 foot radius. After the 1944 explosion, the US Coast Guard surveyed near the pier and reported the bottom to be heavily littered with metal debris and MEC/MC. The primary MC of concern include cyclotrimethylenetrinitramine (RDX), trinitrotoluene (TNT), and aluminum (from MK47 depth bombs and MK49 depth bombs). In order to characterize the site, an Army SI was initiated in 2009 and completed in January 2011. The RI/FS contract was awarded and the contractor began work in July 2011. The RI fieldwork was completed in October 2014. The draft RI was issued in April 2015. The RI report was disputed by the EPA in December 2015. The Army and the regulatory agencies have met on a number of occasions to resolve the dispute and are close to resolution. The date of the final RI is to be established based on the informal dispute resolution.

In July 2016, the USACE was contracted to complete an HRR.

CLEANUP/EXIT STRATEGY

MRS 10 (MOTCO-010) is difficult to assess since the RI/FS has yet to be conducted and the historical records available are limited. However, several reports from both MOTCO's own dredging operations and USACE shipping channel maintenance dredging have reported MEC discoveries in this MRS. Thus, at a minimum, a procedure similar to low-probability construction support should be utilized during future MOTCO and shipping channel dredging. A more detailed cleanup exit strategy will be developed pending the results of the RI/FS.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
MOTCO-001-R-01	UXO 00001	200409	

MMRP Schedule

Date of MMRP Inception 200303

Past Phase Completion Milestones

2004

PA (MOTCO-001-R-01 - UXO 00001)

RI/FS (MOTCO-001-R-01 - UXO 00001)

SI (MOTCO-001-R-01 - UXO 00001)

2007

PA (MOTCO-007-R-01 - Explosive Ordnance Disposal Q Area, MOTCO-008-R-01 - Port Chicago Tidal Area Explosions, MOTCO-010-R-01 - Suisun Bay Impact Area)

2011

SI (MOTCO-007-R-01 - Explosive Ordnance Disposal Q Area, MOTCO-008-R-01 - Port Chicago Tidal Area Explosions, MOTCO-010-R-01 - Suisun Bay Impact Area)

Projected Phase Completion Milestones

See attached schedule

Projected Record of Decision (ROD)/Decision Document (DD) Approval Dates

To Be Determined

Final RA(C) Completion Date:

Schedule for Next Five-Year Review: 2016

Estimated Completion Date of MMRP at Installation (including LTM phase): 201712

MILITARY OCEAN TERMINAL CONCORD MMRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MOTCO-007-R-01	Explosive Ordnance Disposal Q Area	RI/FS						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MOTCO-008-R-01	Port Chicago Tidal Area Explosions	RI/FS						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MOTCO-010-R-01	Suisun Bay Impact Area	RI/FS						

Community Involvement

Technical Review Committee (TRC): None

Community Involvement Plan (Date Published): 201202

Restoration Advisory Board (RAB): RAB established 200901

RAB Adjournment Date: N/A

RAB Adjournment Reason: None

Additional Community Involvement Information

The first RAB meeting was held in March 2009. The RAB will be meeting six times per year. The Army completed a new CIP in February 2012. The 2012 CIP guides the community involvement for the Tidal Area.

Administrative Record is located at

MOTCO
410 Norman Ave
Concord, CA 94520
Phone number: (925) 246-4024

Information Repository is located at

Concord Public Library
2900 Salvio Street
Concord, CA 94519
Phone number: (925) 646-5455

Current Technical Assistance for Public Participation (TAPP):N/A

TAPP Title: N/A

Potential TAPP: N/A

