January 2, 2009

LETTER OF TRANSMITTAL 036-09597-08

Sandy Reese MACTEC Administrative Records BRAC, Bldg. #4463 Gigling Road Monterey, CA 93940

Re: Soil Management Plan

The following items are enclosed via Fed Ex

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FORA ESCA RP, Soil Management Plan, Seaside MRA dated Sept. 2008	1

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Comments:

Please attach this document to the Final Addendum to Final OE-15SEA.1-4 Site-Specific Work Plan dated Jan 24, 2008

Sincerely,

At the request of Chris G. Spill, P.G. (7372) Senior Associate Geologist

FORA ESCA Remediation Program Team



Fort Ord Reuse Authority





Westcliffe Engineers, Inc.

FORA ESCA REMEDIATION PROGRAM

FINAL

Soil Management Plan

Seaside Munitions Response Area

Former Fort Ord Monterey County, California

September 2008

Prepared for:

FORT ORD REUSE AUTHORITY

100 12th Street, Building 2880 Marina, California 93933



Prepared Under:

Environmental Services Cooperative Agreement No. W9128F-07-2-01621 and FORA Remediation Services Agreement (3/30/07)

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Prepared by:



@LFR

	Soil Management Plan Seaside MRA Former Fort Ord Mont erey County, California	
	\sum	Sept. 2008
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ACRONYMS AND ABBREVIATIONS

$\mu g/m^3$	micrograms per cubic meter
ACM	asbestos-containing material
AOC	Administrative Order on Consent
Army	United States Department of the Army
BADT	best available and appropriate detection technology
BRA	Basewide Range Assessment
Cal-EPA	California Environmental Protection Agency
COC	chemicals of concern
CRUP	Covenant Restricting the Use of Property
DTSC	Department of Toxic Substances Control
EPA	United States Environmental Protection Agency
ESCA	Environmental Services Cooperative Agreement
ESCA RP	Environmental Services Cooperative Agreement Remediation Program
FORA	Fort Ord Reuse Authority
HA	historical area
HTW	hazardous and toxic waste
LBP	lead-based paint
LFR	LFR Inc.
MD	munitions debris
MEC	Munitions and Explosives of Concern
MRA	Munitions Response Area
MRS	Munitions Response Site
OSHA	Occupational Safety and Health Administration
PWP	Programmatic Work Plan
RAWS	remote automated weather station
SCAs	Special Case Areas
SMP	Soil Management Plan
SOP	standard operating procedure
SSHP	Site Safety and Health Plan
SSWP	Site-Specific Work Plan
SWPPP	Stormwater Pollution Prevention Plan

UXO unexploded ordnance

WestcliffeWestcliffe Engineers, Inc.WESTONWeston Solutions, Inc.

1.0 INTRODUCTION

This Soil Management Plan (SMP) describes the soil handling and management procedures that will be used during the execution of the field activities associated with the munitions response at the Seaside Munitions Response Area (MRA) at the former Fort Ord in Monterey County, California ("the Seaside MRA"). As contractors to the Fort Ord Reuse Authority (FORA), the munitions response activities will be performed by LFR Inc. (LFR), Weston Solutions, Inc. (WESTON), Westcliffe Engineers, Inc. (Westcliffe; collectively referred to as "the Environmental Services Cooperative Agreement Remediation Program (ESCA RP) Team"), and their subcontractors. The work required to complete the munitions response at the Seaside MRA was described in detail in the report titled "Final Addendum to Final OE-15SEA.1-4 Site-Specific Work Plan, Phase II Seaside Munitions Response Area (MRA) Removal Action" ("the Final SSWP Addendum"), prepared by the ESCA RP Team and dated January 24, 2008 (ESCA RP Team 2008a). The work described in the Final SSWP Addendum, and referenced herein, is referred to as the Phase II Seaside MRA Removal Action. This SMP is prepared in support of the munitions response field activities and is not prepared in response to agency order of directive. This SMP will remain in effect until the completion of munitions response activities at the Seaside MRA.

The SMP identifies the specific procedures and protocols that must be followed to ensure that, when soil disturbance activities are required, they are conducted in a manner that is protective of human health and the environment (i.e., minimizing dust generation). In addition, this SMP outlines the proper notification and handling procedures to be followed in the event that unanticipated chemical contamination in soil (as defined in Section 4.2) is encountered during the Phase II Seaside MRA Removal Action. Handling methods for Munitions and Explosives of Concern (MEC), radiological materials, chemical and biological agents, and other issues, such as the disposal of investigation- and remediation-derived waste and Occupational Safety and Health Administration (OSHA) worker safety requirements, are not addressed in this document. Additionally, the removal of building materials, including lead-based paint (LBP), asbestos-containing material (ACM; including Transite™ [asbestos cement pipe]), concrete, and debris, and soil surrounding existing buildings that has been affected by LBP, will be handled according to the procedures presented in Appendix C of the Final SSWP Addendum.

1.1 Site Location

The former Fort Ord is located 80 miles south of San Francisco and occupies approximately 28,000 acres adjacent to Monterey Bay and the cities of Marina, Seaside, Sand City, Del Rey Oaks, and Monterey. State Highway 1 crosses the western portion of the former Fort Ord, separating the beachfront from most of the installation. Laguna Seca Recreational Area and Toro Regional Park border the former Fort Ord to the south and southeast, respectively, as do several small communities such as Toro Park Estates and San Benancio.

The Seaside MRA is located in the southwestern portion of the former Fort Ord, bordered by the City of Seaside to the west and the former impact area to the east. The Seaside MRA runs

along General Jim Moore Boulevard south of Eucalyptus Road and is wholly contained within the jurisdictional boundaries of the City of Seaside. Figure 1 displays where the Seaside MRA is located in the former Fort Ord and shows the proximity of the MRA to the City of Seaside.

The areas covered under this SMP are the U.S. Army Corps of Engineers (USACE) reuse parcels E24, E34, E23.1, and E23.2, which are roughly coincident with the following Munitions Response Sites (MRSs): MRS-15SEA.1, MRS-15SEA.2, MRS-15SEA.3, and MRS-15SEA.4, respectively. The MRS-15SEA.1–4 nomenclature will be used in this document to refer to the four MRSs within the Seaside MRA. Refer to Figure 2 for MRS locations.

1.2 Regulatory History

On March 31, 2007, the United States Department of the Army (Army) and FORA entered into an Environmental Services Cooperative Agreement (ESCA) thereby allowing the Army to transfer approximately 3,340 acres of property and the responsibility of removing MEC to FORA as an Economic Development Conveyance. In accordance with the ESCA, FORA is responsible for addressing response actions for the property except for specified responsibilities retained by the Army (Army-retained responsibilities are discussed in greater detail in Section 1.4). To accomplish this effort, FORA entered into an agreement with the ESCA RP Team to assist in the completion of the MEC remediation activities in accordance with the ESCA and an Administrative Order on Consent (AOC) between FORA, the U.S. Environmental Protection Agency (EPA), and the California Environmental Protection Agency (Cal-EPA) Department of Toxic Substances Control (DTSC).

FORA, through the ESCA RP Team, will complete the Army's munitions response actions, in a program hereinafter identified as the FORA ESCA RP. The Phase II Seaside MRA Removal Action as defined in the Final SSWP Addendum will be completed under the FORA ESCA RP.

1.3 **Project Overview**

The Final SSWP Addendum was prepared as a supplement to the Fort Ord, Monterey County, Military Munitions Response Program, Programmatic Work Plan (PWP) prepared by Parsons in 2001 and updated in 2004 (Parsons 2004). The PWP was submitted as a Primary Document by the Army and describes the overall procedures, methods, and resources to be used while performing military munitions response actions. Subsequent investigations and removal actions performed within the MRAs were subject to the provisions of the PWP as well as Site-Specific Work Plans (SSWPs) issued as addenda to the PWP for each MRA.

The Final SSWP Addendum addresses areas within the Seaside MRA where the Army did not complete the planned removal actions as listed in their Notice of Intent to perform removal actions on approximately 35 acres of the MRA referred to as Special Case Areas (SCAs). The Phase II Seaside MRA Removal Action will include completion of MEC removals in the SCAs, filling data gaps to support a Remedial Investigation/Feasibility Study, and performing a visual surface inspection for MEC along the proposed new roadway alignments for General Jim Moore Boulevard and Eucalyptus Road (ESCA RP Team 2008a). The project will involve a variety of operations, including vegetation removal, removal of asphalt roads/culverts/wood-reinforced berms, surface soil scrapes, soil excavation, soil transport, sifting operations, and removal of structures and latrines.

The PWP together with the Final SSWP Addendum serve as the guiding documents for work related to MEC investigation and removal to be completed during the Phase II Seaside MRA Removal Action. Additional documents that serve to guide activities conducted during the project and are not included as parts of the PWP or Final SSWP Addendum include:

- Final Stormwater Pollution Prevention Plan (SWPPP), prepared by LFR, dated May 2008 (LFR 2008)
- Final City of Seaside Community Safety Plan, prepared by the ESCA RP Team, dated March 6, 2008 (ESCA RP Team 2008c)
- Final Standard Operating Procedure for Mechanical Soil Sifting, prepared by the ESCA RP Team, dated April 22, 2008 ("Final SOP for Mechanical Soil Sifting"; ESCA RP Team 2008d)

This SMP will serve as another supplemental document to the PWP and Final SSWP Addendum. Procedures for the management of wastes generated during the investigation and clearing of MEC were presented in Section 13.0, Investigation-Derived Waste Plan, of the Final SSWP Addendum (ESCA RP Team 2008a). Protocols for the characterization and removal of lead-affected soil as related to structure demolition are presented in Appendix C of the Final SSWP Addendum (ESCA RP Team 2008a).

1.4 Army-Retained Conditions

The ESCA and the AOC identify certain Army-retained conditions for which the Army assumes responsibility. If these conditions are encountered during field operations, FORA is required to notify the Army of their presence in accordance with the guidelines set forth in the ESCA and the Army assumes responsibility. Included in the Army-retained conditions are:

- Radiological material
- Chemical or biological warfare agents
- Natural resource injuries or damages occurring as a result of contamination releases that have occurred due to Army ownership or activities on the Seaside MRA except to the extent such injuries are a direct result of FORA's activities on the Seaside MRA
- Unknown uninsured conditions, which include the management and cleanup of non-MEC-related hazardous and toxic wastes above insurance parameters
- Perchlorate contamination in soil or groundwater

1.5 Plan Purpose and Organization

As part of the Phase II Seaside MRA Removal Action, significant quantities of soil within the MRA will require movement and handling as part of the activities required to investigate and remove MEC. The purpose of this SMP is to identify the specific procedures and protocols that must be followed to ensure that, when soil disturbance activities are required, they are conducted in a manner that is protective of human health and the environment (i.e., minimizing dust generation). In addition, this SMP outlines the proper notification and handling procedures to be followed in the event that unanticipated chemical contamination in soil (as defined in Section 4.2) is encountered during the Phase II Seaside MRA Removal Action. Section 1.0 of this plan addresses introductory information; Section 2.0 summarizes site conditions; Section 3.0 summarizes planned MEC removal activities; and Section 4.0 outlines the protocol for managing soil in association with the MEC removal activities.

2.0 SUMMARY OF SITE CONDITIONS

This section provides information on the MRA with respect to MEC investigation and removal history and history and conditions of hazardous and toxic waste (HTW) in soil and groundwater.

2.1 MEC Investigation and Removal History

Numerous investigations and removal actions were performed by the Army in the Seaside MRA. These actions resulted in the removal of all detected MEC to the depth of detection, with the exception of 35 acres identified by the Army as SCAs and a narrow area west of General Jim Moore Boulevard, which was outside the western boundaries of MRS-15SEA.1 and MRS-15SEA.2 (ESCA RP Team 2008b). Figure 3 shows the location of the MEC and munitions debris (MD) previously identified and removed from the MRA. Figure 4 shows the SCAs across the Seaside MRA. The maps in Appendix A present more detailed locations of each of the SCAs on each MRS. Because the Army's investigation activities did not include the narrow area west of General Jim Moore Boulevard, the status of MEC in this area represents a data gap that will be addressed during the Phase II Seaside MRA Removal Action.

The Army identified SCAs either because the areas were inaccessible due to surface obstructions or because surface and near-surface features interfered with the signal for the digital geophysical instrumentation, making it difficult to distinguish individual anomalies (ESCA RP Team 2008b). The SCAs are shown on Figure 4 and include:

- Existing Site Fence Area
- Original Fence Line
- Asphalt and Concrete
- Scrape Areas
- Backhoe Excavations
- Excavations Requiring Heavy Equipment
- Berms and Retaining Walls
- Structures and Latrines
- Range 46 Weather Station
- Debris Piles
- Miscellaneous Surface Features

Section 2 – Summary of Site Conditions

2.2 Basewide Range Assessment

A Basewide Range Assessment (BRA) was conducted by the Army to evaluate the potential presence of chemicals of concern (COCs) at known or suspected small arms ranges, multi-use ranges, and military munitions training areas within the former Fort Ord (Shaw/MACTEC 2006). The areas were identified as historical areas (HAs). The objectives of the BRA investigation activities were to identify the HAs that could be eliminated from further consideration for potential remediation related to COCs, and to identify areas that require additional investigation for potential chemical contamination or that should be considered for remediation/habitat mapping related to COCs.

According to the BRA, the following HAs were identified within the Seaside MRA: HA-18D, HA-19D, HA-20D, HA-21D, HA-22D, HA-23D, HA-46D, HA-48D, HA-50D, HA-59D, HA-112, HA-113, HA-114, and HA-115. The primary COC identified during the BRA for the Seaside MRA was lead in soil (Shaw/MACTEC 2006).

The findings of the BRA investigation activities with respect to HTW for each MRS are summarized in Appendix B. Based on the BRA, no further action has been recommended for HAs within this MRA (Army 2007). The Seaside MRA is also part of the Installation Restoration Program Site 39 at the former Fort Ord. Previous soil remediation activities were conducted as part of the Site 39 program, which has an existing Record of Decision. In accordance with the Basewide Record of Decision, approximately 39,800 cubic yards of lead-contaminated soil were excavated and removed from HAs within the Seaside MRA.

2.3 Groundwater Contamination

A portion of the former Fort Ord lies within a "Special Groundwater Protection Zone," as defined by Monterey County Ordinance 04011. Use of groundwater is prohibited on portions of the property, as described in the Covenant Restricting the Use of Property (CRUP). Provided the restrictions of the CRUP are adhered to, no actual or potential hazard exists on the surface of the property from groundwater contamination or from possible soil-gas volatilization resulting from groundwater contamination underlying the property (ESCA RP Team 2008b). Remediation of contaminated groundwater is an Army-retained condition.

2.4 Underground and Aboveground Storage Tanks

No existing or previously existing underground storage tanks or aboveground storage tanks have been identified within the Seaside MRA (Army 2007).

3.0 SUMMARY OF PHASE II SEASIDE MRA REMOVAL ACTION

As described in the Final SSWP Addendum, field operations to be conducted as part of the Phase II Seaside MRA Removal Action include work within the SCAs and the roadway corridor. The project will involve a variety of operations, including removal of vegetation, removal of asphalt roads/culverts/wood-reinforced berms, surface soil scrapes, soil excavation, soil transport, sifting operations, and removal of structures and latrines. Many of these field operations will involve the handling and movement of soil and/or have the potential to expose previously uncharacterized chemical contamination in soil. The locations of SCAs and the roadway corridor are shown on Figure 4 and in the more detailed maps provided in Appendix A of this SMP.

Field operations to be completed are briefly described in Sections 3.1 and 3.2 below. The activities are divided into two groups: 1) activities that are likely to generate soil that will require transport to the on-site sifting plant, and have the potential to expose previously uncharacterized chemical contamination in soil; and 2) activities that are not likely to generate soil that will require transport to the on-site sifting plant, but have the potential to expose previously uncharacterized chemical contamination in soil; and 2) activities that are not likely to generate soil that will require transport to the on-site sifting plant, but have the potential to expose previously uncharacterized chemical contamination in soil.

3.1 Activities Expected to Generate Soil for Sifting

Field operations included in this section involve the removal and transportation of soil to the on-site sifting plant. Soil that requires sifting will be removed and transported to the soil sifting plant stockpile area to facilitate soil sifting operations. The stockpile area is shown on Figure 5. The soil sifting operations consist of placing the stockpiled soil into an on-site sifting machine, which will mechanically screen the soil to segregate any MEC, MD, and non-MEC-related scrap from the soil. The soil sifting procedures and safety precautions are described in greater detail in the Final SOP for Mechanical Soil Sifting, prepared by the ESCA RP Team and dated April 22, 2008 (ESCA RP Team 2008d).

3.1.1 Special Case Areas

SCAs were identified by the Army for a variety of reasons, such as dense metallic clutter that prevented digital detection instruments from being able to distinguish individual geophysical anomalies or interference due to nearby metal structure or features. SCAs include: historical and current fencing; asphalt/concrete range pads, roads, and walkways; areas under existing structures (i.e., field latrines and range-related structures); berms and culverts; and areas requiring excavation by heavy equipment, including scrape areas. The removal action technical approach for each type of SCA was described in the Final SSWP Addendum. Some of the removal action technical approaches are expected to generate soil that will be transported to the on-site sifting plant, while other areas are only expected to potentially expose previously uncharacterized chemical contamination in soil. Each of these SCAs is described below. The locations of the SCAs are shown on Figure 4 and the more detailed maps provided in Appendix A of this SMP.

3.1.1.1 Original Fence Line Removal

An approximately 25-foot-wide area around the old site fence line will be scraped to remove magnetic interference. Detectable MEC will be removed from the original fence line SCA to the depth of detection using best available and appropriate detection technology (BADT). The spoils from the scraping operation will be segregated by MRS and stockpiled in a designated area of the Seaside MRA prior to sifting.

3.1.1.2 Berm Removal

The Seaside MRA contains several earthen berms, some of which are reinforced with wooden retaining walls. The retaining walls will be removed and the berms will be deconstructed. Heavy equipment will be used to remove soil from the berm until a surveyor determines that the level of the berm matches the existing terrain or that the native soil levels have been reached. Once this determination has been made, detectable MEC will be removed from the scraped surface to the depth of detection using BADT. The berm excavation will be conducted under the oversight of a qualified unexploded ordnance (UXO) technician. The soil from the berms will be segregated by MRS and stockpiled in a designated area of the Seaside MRA prior to sifting.

3.1.1.3 Scrape Areas

Several SCA locations require scraping with heavy equipment. These scrape areas include portions of the MRA that contain dense metallic clutter that prevented digital detection instruments from being able to distinguish individual geophysical anomalies for investigation. These scrape areas are shown on the maps provided in Appendix A. These locations will be scraped with heavy equipment to remove the approximately upper 6 inches of surface soil containing the dense metallic clutter, and detectable MEC will be removed from the newly exposed areas to the depth of detection using BADT. The spoils from the scraping operation will be segregated by MRS and stockpiled in a designated area of the Seaside MRA prior to sifting.

3.1.2 Roadway Corridor

The roadway corridor is identified as 50 feet outside the limits of grading for the new alignment of General Jim Moore Boulevard and Eucalyptus Road. MEC removal has been completed within the roadway corridor with the exception of the SCAs and areas west of the current General Jim Moore Boulevard paved area. SCAs within the roadway corridor will be addressed as described in Section 3.1.1. Soil in the remaining portions of the roadway corridor is not expected to be transported to the sifting plant because the area has already been cleared of MEC through previous removal activity by the Army.

The ESCA RP Team will expand the Army's 100 percent digital geophysical survey for MRS-15SEA.1-4 by geophysically mapping and investigating anomalies in the hillside west of General Jim Moore Boulevard within the new roadway corridor. This investigation is being conducted to fill a data gap to support completion of the remedial investigation.

In addition, the following actions will be taken to facilitate the MEC investigation and removal action activities within the roadway corridor:

- vegetation removal
- scraping approximately 6 inches of surface soil
- stockpiling scraped soil in windrows along the edges of the roadway corridor for future use as fill material within the roadway corridor
- visual surface inspection for MEC as quality assurance within the roadway corridor

3.2 Activities Not Expected to Generate Soil for Sifting

As described in the Final SSWP Addendum, additional activities are required to complete the Phase II Seaside MRA Removal Action. The soil generated from these activities is not expected to be transported to the on-site soil sifting plant; however, if dense metallic clutter is encountered during these activities, soil may need to be removed and transported to the sifting plant. As described above, no further action has been recommended for chemical contamination in soil within the Seaside MRA; however, because the activities described below will involve soil disturbance, a potential exists that unexpected chemical contamination in soil may be encountered.

3.2.1 Existing Site Fence Area

The fence and gates along General Jim Moore Boulevard/Eucalyptus Road will be removed, and areas 25 feet inside the western and northern site boundaries and detectable MEC within the immediate areas around the range gates will be removed to the depth of detection using BADT.

3.2.2 Asphalt and Concrete Removal

Asphalt range roads extend from General Jim Moore Boulevard and Eucalyptus Road into Seaside MRA. There are additional asphalt-covered areas, including parking and staging areas. There are also several range structures (e.g., range towers, break areas) on top of the asphalt and culverts in the subsurface near the asphalt roads. The structures will be removed and the culverts excavated with heavy equipment. The asphalt roads and pads will also be removed and detectable MEC will be removed from the newly exposed area to the depth of detection using BADT.

3.2.3 Backhoe Excavations

There are approximately 350 SCA locations that require backhoe excavations. These include areas where backhoe excavations were started by the Army but not completed due to budgetary constraints and areas containing buried cable/wire, grounding rods, range markers, reinforced concrete, and wood. These areas requiring backhoe excavations are shown on the maps provided in Appendix A. Backhoe excavations will be performed at these locations, and

Section 3 – Summary of Phase II Seaside MRA Removal Action

detectable MEC will be removed from the newly exposed areas to the depth of detection using BADT. If field observations indicate that surface or near-surface metallic debris or clutter in the soil is interfering with the signal for the digital geophysical instrumentation, making it difficult to distinguish individual geophysical anomalies, the soil will be removed from the excavation and sent to the on-site sifting plant.

3.2.4 Heavy Equipment Excavations

Approximately 40 SCA locations require excavation with heavy equipment. These include concrete bunkers, fighting positions, flag poles, target boxes, tie downs, utility poles, and wooden stairs. These areas requiring excavations with heavy equipment are shown on the maps provided in Appendix A. These locations will be excavated with heavy equipment, and detectable MEC will be removed from the newly exposed areas to the depth of detection using BADT. If field observations indicate that surface or near-surface metallic debris or clutter in the soil is interfering with the signal for the digital geophysical instrumentation, making it difficult to distinguish individual geophysical anomalies, the soil will be removed from the excavation and sent to the on-site sifting plant.

3.2.5 Structures and Latrines Removal

There are several structures and latrines in the Seaside MRA. The surface beneath the structures, and latrines was inaccessible to the Army and the immediate areas around these buildings could not be surveyed because of interference. As described in the Final SSWP Addendum, the structures and latrines will be demolished in accordance with Appendix C of the Final SSWP Addendum. In addition, the latrine pits will be investigated in accordance with the latrine clearance standard operating procedure in Appendix G of the PWP. Detectable MEC will be removed from the newly uncovered areas around the structures and latrines to the depth of detection using BADT. Soils within the vicinity of these structures will be sampled for lead in soil and handled and disposed of, if necessary, in accordance with the procedures outlined in Appendix C of the Final SSWP Addendum.

3.2.6 Range 46 Remote Automated Weather Station

A remote automated weather station (RAWS) was situated on Range 46 during previous Seaside work and has since been removed by the Army. The ground surface underneath this RAWS was inaccessible to the Army, and the immediate areas around the RAWS could not be surveyed because of interference. Detectable MEC will be removed from this SCA to the depth of detection using BADT.

3.2.7 Debris Piles and Miscellaneous Surface Features

Numerous locations where debris was piled or miscellaneous surface features existed were inaccessible to the geophysical operations. The debris piles and miscellaneous surface features will be removed, and detectable MEC will be removed from the newly exposed locations to the depth of detection using BADT.

4.0 SOIL MANAGEMENT PROTOCOLS

The following sections present the management protocols for handling, moving, stockpiling, and reusing soil during the Phase II Seaside MRA Removal Action. Contingency protocols to be followed when unknown or suspected chemical contamination or underground structures are identified are also presented. This SMP identifies the specific procedures and protocols that must be followed to ensure that soil disturbance activities are conducted in a manner that is protective of human health and the environment and that does not interfere with investigation and removal action activities at the Seaside MRA. Discovery of unanticipated or suspected chemical contamination will be responded to as described in Section 4.2.

4.1 Soil Reuse

As described in Section 3.0, soil generated from the Phase II Seaside MRA Removal Action will be transported to an on-site sifting plant where it will be mechanically screened to segregate MEC, MD, and non-MEC-related scrap from the soil. The soil sifting procedures and safety precautions are described in greater detail in the Final SOP for Mechanical Soil Sifting (ESCA RP Team 2008d). Soil will be transported from the area in which it was generated to the soil sifting stockpile area via off-road haul trucks along corridors within the Seaside MRA. The stockpile area is shown on Figure 5. Soil that has not been screened will not be transported on any roads outside of the boundaries of the MRA. Following clearance of the soil through the course of soil sifting activities, it is anticipated that the sifted soil will be acceptable for reuse at the Seaside MRA within the SCAs within the footprint of the roadway corridor or as backfill in other portions of the roadway corridor, if needed. The sifted soil will not, under any circumstance, be reused as backfill in areas currently designated for future residential development within the Seaside MRA without prior regulatory approval.

If other opportunities for soil reuse become available within the boundaries of the former Fort Ord property during the Phase II Seaside MRA Removal Action, the feasibility of each soil reuse option will be evaluated with respect to applicable regulatory requirements and soil reuse guidelines. Any feasible soil reuse option outside of the Seaside MRA will be discussed with the EPA, the DTSC, and the Army for approval prior to reuse.

Soil disturbed as part of the MRA removal activities described in Section 3.2 that does not require sifting and is not suspected to contain chemical contamination will be stockpiled next to the excavation area, and the soil will be placed back in the excavation after the BADT clearing is complete.

The ESCA RP site manager will be responsible for ensuring that the source, quantity, and placement location of the reused soil material is documented in the appropriate field logs. This information will be included in future completion reports submitted to the regulatory agencies.

Section 4 – Soil Management Protocols

4.2 Detection of Unanticipated or Suspected Soil Contamination

Based on the BRA, no further action has been recommended for HAs within the Seaside MRA (Army 2007). Based on regulatory agency concurrence with this determination, we do not anticipate encountering residual chemical contamination in the soil. However, the potential exists that as yet undiscovered chemical contamination may be encountered during the MEC removal and associated soil handling activities associated with the Phase II Seaside MRA Removal Action, including activities associated with soil stockpiling and sifting.

Unanticipated chemical contamination conditions (i.e., "suspected" soil contamination) may include, but are not limited to:

- oily, shiny, or saturated soil or free product
- soil with strong chemical odor
- discovery of objects of environmental concern such as underground storage tanks and associated piping, buried drums, etc.
- discovery of suspected debris of environmental concern (i.e., buried refuse, asbestoscontaining pipes, and TransiteTM)
- other conditions that vary materially from those documented during previous investigations

The field personnel involved in soil handling activities will be briefed on the recognition of these types of conditions in the field and will be instructed to be on the alert for these conditions during soil handling activities.

If "suspected" soil contamination is encountered during the Phase II Seaside MRA Removal Action, the following procedures will be followed:

- 1. All MEC field activities that may potentially disturb the "suspected" contamination will be immediately stopped.
- 2. If there is no immediate danger to personnel, an appropriate exclusion zone will be designated with a marker and/or a barricade will be erected around the suspect area to prevent further soil disturbance in this area.
- 3. If an emergency situation requiring medical attention, containment assistance, or other emergency assistance arises, the emergency procedures specified in the Site Safety and Health Plan (SSHP) provided as Section 6.0 of the Final SSWP Addendum will be followed.
- 4. The site manager for the contractor or subcontractor will immediately notify the ESCA RP Team representatives listed in Table 1.
- 5. An environmental professional on the ESCA RP Team will be mobilized to visually assess the suspect area. If it is determined by the environmental professional that soil contamination by chemical compounds is possible, based on field observations, an initial screening-level round of soil samples may be collected to confirm if COCs are present.

If it is determined that soil contamination may exist, the ESCA RP Team representative will notify FORA, the Army, and the appropriate regulatory agencies within 24 hours by contacting the representatives listed in Table 2. Information provided to the Army will include the location of the discovery (including GPS location) and approximate depth of discovery; the site conditions at the time of discovery, and a description of changes to the site conditions since the discovery. To the extent feasible and if it is safe to leave the area open, the suspected soil contamination will not be disturbed until the Army has determined whether soil samples are necessary.

6. Equipment and clothing coming in contact with the potential contamination shall be decontaminated in accordance with the PWP and Final SSWP Addendum.

4.3 Measures to Assess Nature of Suspected Soil Contamination

As discussed in Section 1.4, unanticipated soil contamination may be an Army-retained condition for which the Army assumes responsibility. If the unanticipated soil contamination encountered during field operations is determined to be an Army-retained condition, FORA is required to notify the Army of its presence in accordance with the guidelines set forth in the ESCA, and the Army will assume responsibility for evaluating the nature of the suspected soil contamination.

If the unanticipated soil contamination encountered during field operations is determined to be an unknown insured condition, FORA will assume responsibility for evaluating the nature of the suspected soil contamination. If sampling is determined to be necessary, the ESCA RP Team will develop a sampling and analysis approach to evaluate the nature of the suspected soil contamination to the extent that such activities are covered by environmental insurance. The sampling and analysis approach will be discussed with FORA and the Army, and submitted to the appropriate regulatory agencies for review and approval prior to implementation.

4.4 Measures to Minimize Dust from Soil Movement and Handling

As discussed in the SWPPP (LFR 2008) and the Final SOP for Mechanical Soil Sifting (ESCA RP Team 2008d), soil handling activities can result in exposure to dust. Dust control measures will be implemented during the investigation and removal action activities at the Seaside MRA. In general, the most effective dust control measure is to water all active areas at least twice per day or as necessary to prevent visible dust emissions from migrating off site. Also, tarpaulins or other effective covers may be used for trucks transporting soils on the Seaside MRA.

A Dust Monitoring Plan was presented in the Final SOP for Mechanical Soil Sifting (ESCA RP Team 2008d). As indicated in the plan, personnel will implement dust controls during site operations, which will consist of spraying water on haul routes, work areas, and stockpiled soil introduced to the screening plant, as needed to minimize fugitive dust. In addition, heavy equipment speeds will be monitored to minimize dust emissions.

Three dust monitoring stations will be in constant operation during working hours. One dust monitor will be placed in the soil sifting operations work area to monitor dust levels for worker safety purposes. A second dust monitor will be placed near the western perimeter of the Seaside MRA to monitor dust levels potentially leaving the area. A third dust monitor will be placed along an off-road haul route located between the soil sifting plant and the SCA or roadway corridor work area. An example of the dust monitor locations is presented on Figure 5.

The dust monitors will continuously monitor the particulate matter in the air and record the concentrations of the particulate matter in a data logger every minute during working hours. The data will be downloaded at the end of each day and maintained in the project files for documentation purposes. In addition, personnel will periodically inspect the dust monitors to determine if dust control measures need to be increased and/or site operations need to be modified. Personnel will also visually monitor the work areas for airborne dust and implement any necessary corrective actions to mitigate dust emission.

The Monterey Bay Unified Air Pollution Control District 24-hour ambient air quality standard is 50 micrograms per cubic meter ($\mu g/m^3$). Every effort will be made to ensure that work activities and dust control measures are implemented such that the dust emissions are minimized and the ambient air quality standard of 50 $\mu g/m^3$ is achieved.

4.5 Stockpile Management

As part of the soil sifting activities, soil that is excavated or scraped from the SCAs or roadway corridor will be transported to a large stockpile to await sifting activities before it can be reused. There are three potential concerns associated with the stockpiling of soils: dust generation, erosion of stockpiled material, and unauthorized persons gaining access to the stockpiles. Mitigation procedures to prevent wind erosion from the stockpiles prior to sifting include spraying them with enough water or another acceptable material to keep the soil slightly damp, but not enough to create runoff from oversaturation. In addition, spraying the stockpiles that will be generated after the soil has been sifted and moved to the storage area with a soil stabilization product will help reduce wind erosion for these stockpiles. To further prevent airborne transport of stockpile material, stockpiles will not be piled excessively high. Erosion control measures for stockpiled soil are described in the Final SWPPP prepared by LFR in May 2008.

Site access safety measures are discussed in Section 4.6.

4.6 Access Control

The potential for trespassers or visitors to gain access to work areas will be controlled through the implementation of the access and perimeter security measures, which include fencing along the entire MRA perimeter and locked access gates.

4.7 Worker Management Measures

Qualifications and training of all project personnel will comply with the measures set forth in Section 11.11 of the Final SSWP Addendum.

4.8 Environmental Health and Safety Guidelines

The health and safety requirements established for the Seaside MRA are described in the SSHP provided as Section 6.0 of the Final SSWP Addendum. The provisions of the SSHP provided in the Final SSWP Addendum are mandatory for all on-site activities undertaken by the ESCA RP Team and its subcontractors. As site conditions change, the document may require modifications. Such modifications will be submitted as SSHP Addenda and will be numbered sequentially. All SSHP Addenda must be reviewed and approved by the Project Health and Safety Officer. All ESCA RP Team personnel and subcontractors must read and understand the SSHP and sign the Plan Acceptance Form (included as part of the SSHP) prior to the start of work at the Seaside MRA.

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5.0 **REFERENCES**

- Environmental Services Cooperative Agreement Remediation Program Team (ESCA RP Team). 2008a. Final Addendum to Final OE-15SEA.1-4 Site-Specific Work Plan, Phase II Seaside Munitions Response Area (MRA) Removal Action. January 24.
- ------. 2008b. Draft Final Summary of Existing Data Report, Former Fort Ord, Monterey County, California. June 25.
- ------. 2008c. Final City of Seaside Community Safety Plan, Phase II Seaside Munitions Response Area (MRA) Removal Action. March 6.
- ------. 2008d. Final Standard Operating Procedure for Mechanical Soil Sifting, Seaside Munitions Response Area. April 22.
- LFR Inc. (LFR). 2008. Final Stormwater Pollution Prevention Plan for General Jim Moore Boulevard Phase IV and Eucalyptus Road Phase I Clearing and Grubbing WDID # 3 27C 351758. May.
- Parsons. 2004. Final Programmatic Work Plan, Former Fort Ord, Monterey, California, Ordnance and Explosives Cleanup, prepared for U.S. Army Corps of Engineers, Sacramento District. May. (Fort Ord Administrative Record No. OE-0297B)
- Shaw Environmental, Inc./MACTEC Engineering and Consulting, Inc. (Shaw/MACTEC). 2006. Draft Final Comprehensive Basewide Range Assessment Report, Former Fort Ord, California, Revision 1C. November 24. (Fort Ord Administrative Record No. BW-2300G)
- United States Department of the Army (Army). 2007. Draft Findings of Suitability for Early Transfer (FOSET), Former Fort Ord, Environmental Services Cooperative Agreement (ESCA) Parcels and Non-ESCA Parcels (Operable Unit Carbon Tetrachloride Plume) (FOSET 5). June 26. (Fort Ord Administrative Record No. FOSET-004)

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Table 1

ESCA RP Team Contact List

If unanticipated contamination is encountered or suspected in the field, the persons indicated in Table 1 must be notified <u>immediately</u>.

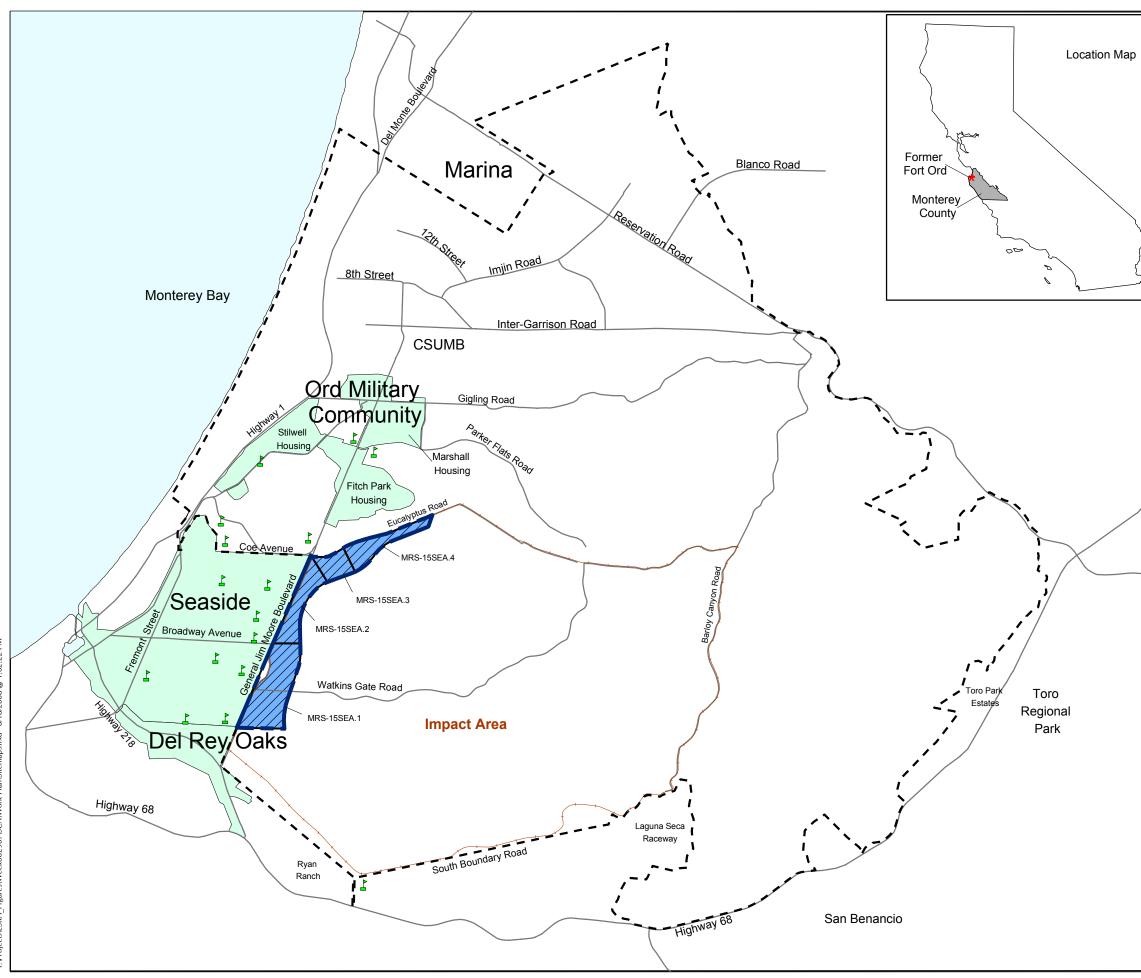
	Contact	Telephone (office/cell)
ESCA R	P Team	
Weston:	Linda Temple (ESCA Remediation Project Manager) and	(831) 384-3221 / (831) 229-1668
	Greg Clark (Site Safety Officer)	(831) 384-3221 / (831) 240-1391
LFR:	Christopher Spill (ESCA Technical Project Manager) or	(831) 384-3221 / (510) 387-3765
	Lucas Goldstein (ESCA Remediation Project Engineer) and	(510) 596-9535 / (510) 541-6897
	Kristie Reimer (ESCA Remediation Program Manager)	(831) 384-3221 / (650) 224-8545

Table 2

Client and Regulatory Agency Contact List

If unanticipated contamination is visually confirmed in the field by an ESCA RP Team representative identified in Table 1, the appropriate persons indicated in Table 2 will be notified <u>within 24 hours</u> by an ESCA RP Team representative.

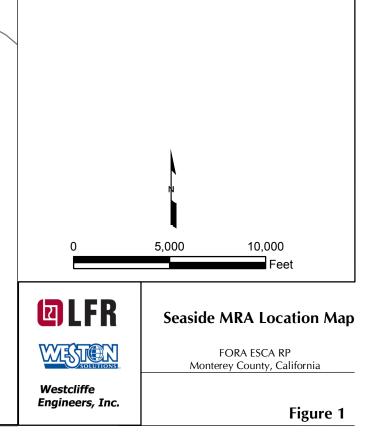
	Contact	Telephone (office/cell)
FORA:	Stan Cook (FORA ESCA Program Manager)	(831) 883-3672
ESCA RP	Feam	
Weston:	Dwight Gemar (ESCA Remediation Project Engineer)	(707) 562-3352 / (925) 899-4674
LFR:	Chuck Pardini (ESCA Program Quality Manager)	(650) 469-7224 / (510) 813-1053
Army:	Gail Youngblood (Environmental Coordinator)	(831) 242-7918
U.S. EPA:	Judy Huang (Remediation Project Manager)	(415-972-3681
DTSC:	Roman Racca (Project Manager)	(916) 255-6407
Monterey County Department of Environmental Health, if needed		(831) 755-4500
Other agence	vies as applicable	
e.g., National Response Center (800) 424-8802		(800) 424-8802

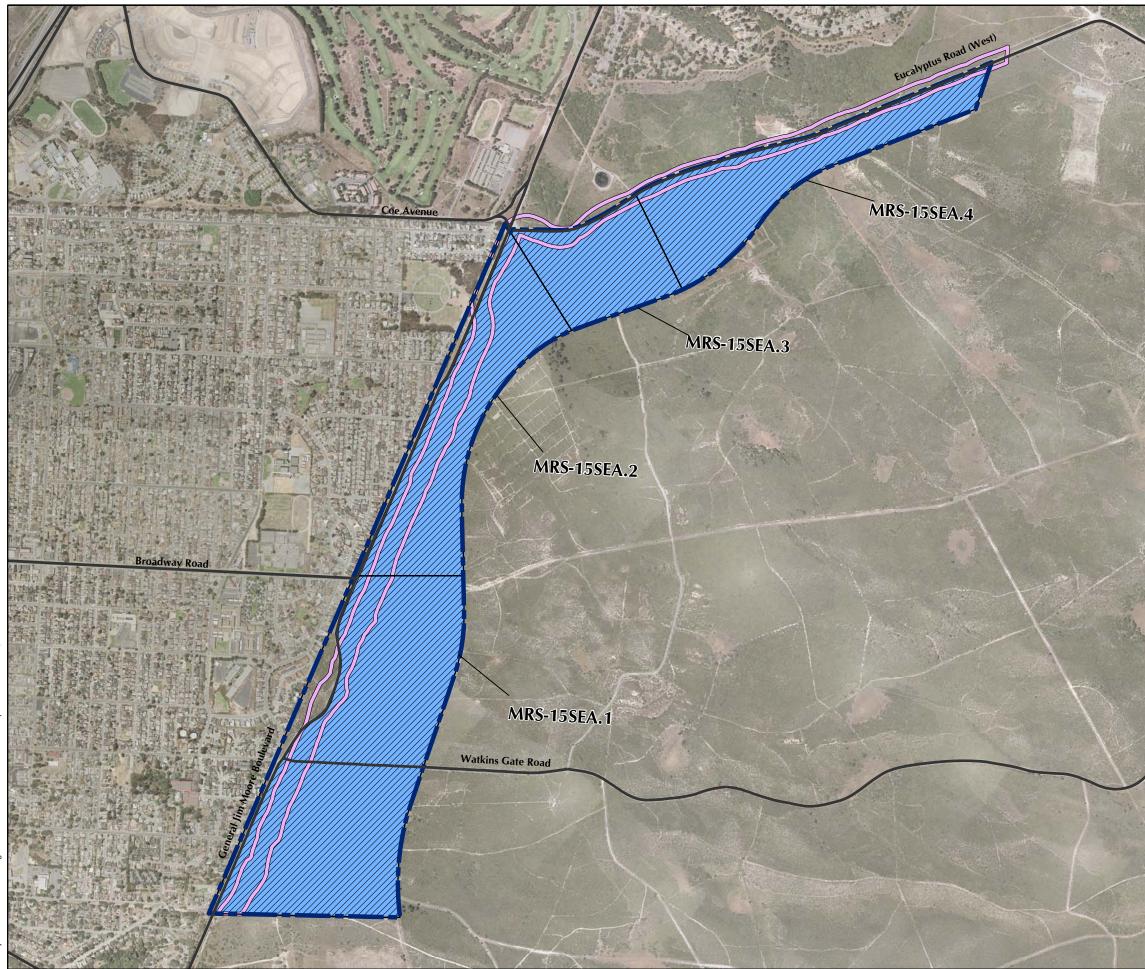




Note:

The western boundary of the Seaside MRA corresponds to the property transfer boundary.





Legend



Seaside MRA



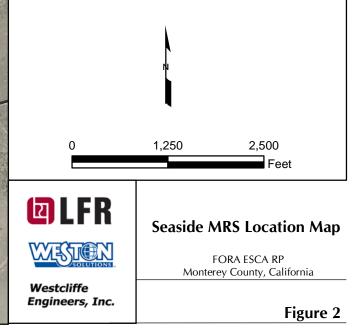
Seaside MRS

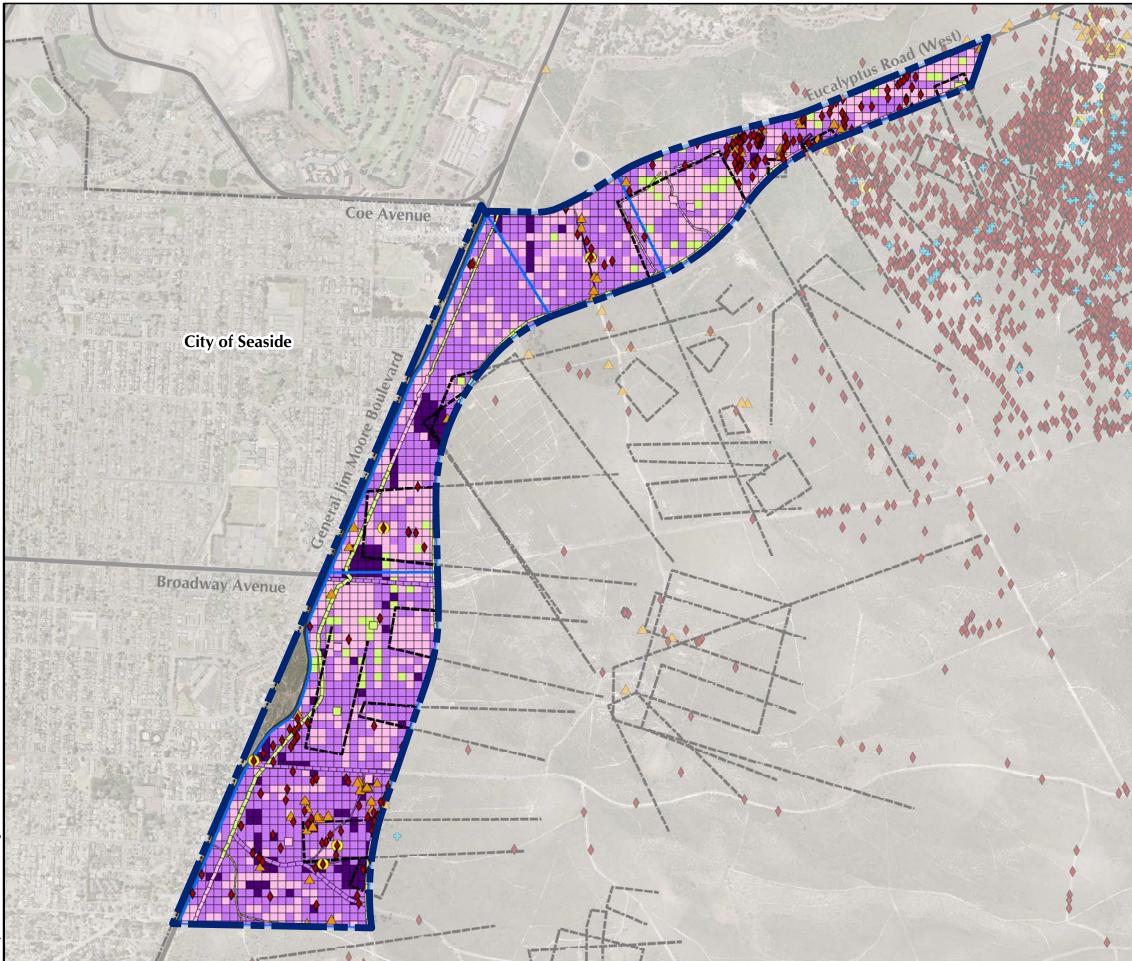
Roadway Alignment

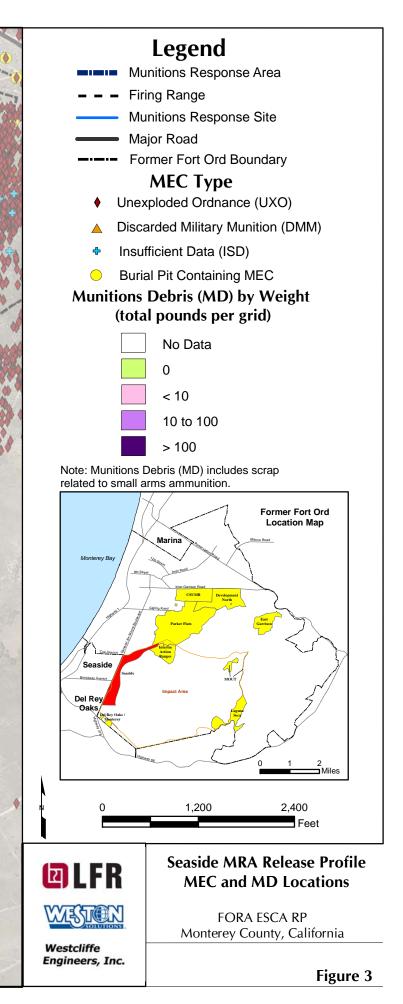
Major Road

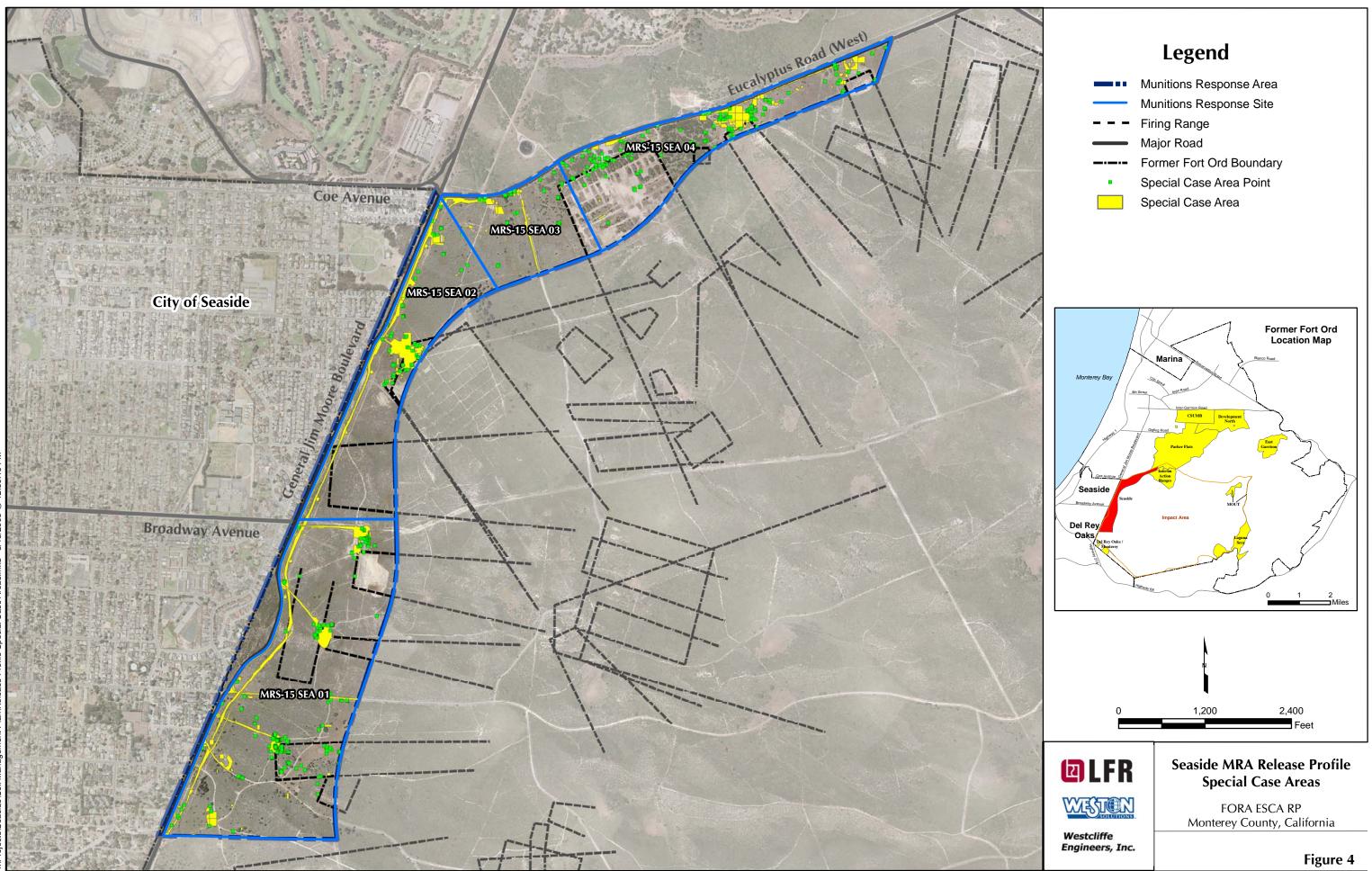
Note:

The western boundary of the Seaside MRA corresponds to the property transfer boundary.

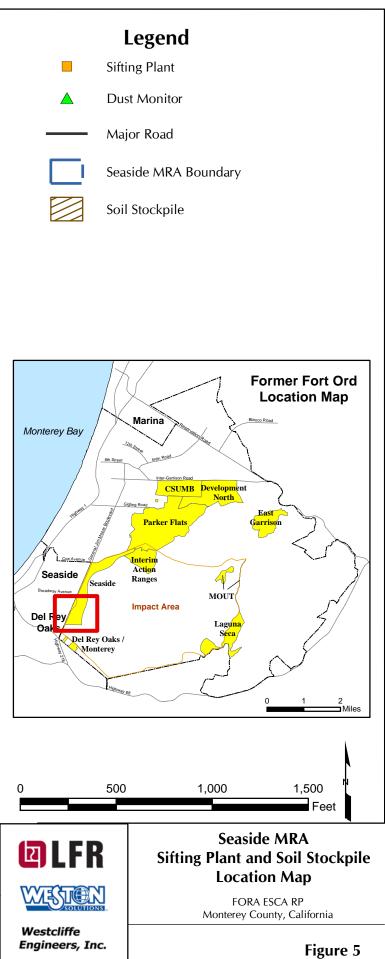






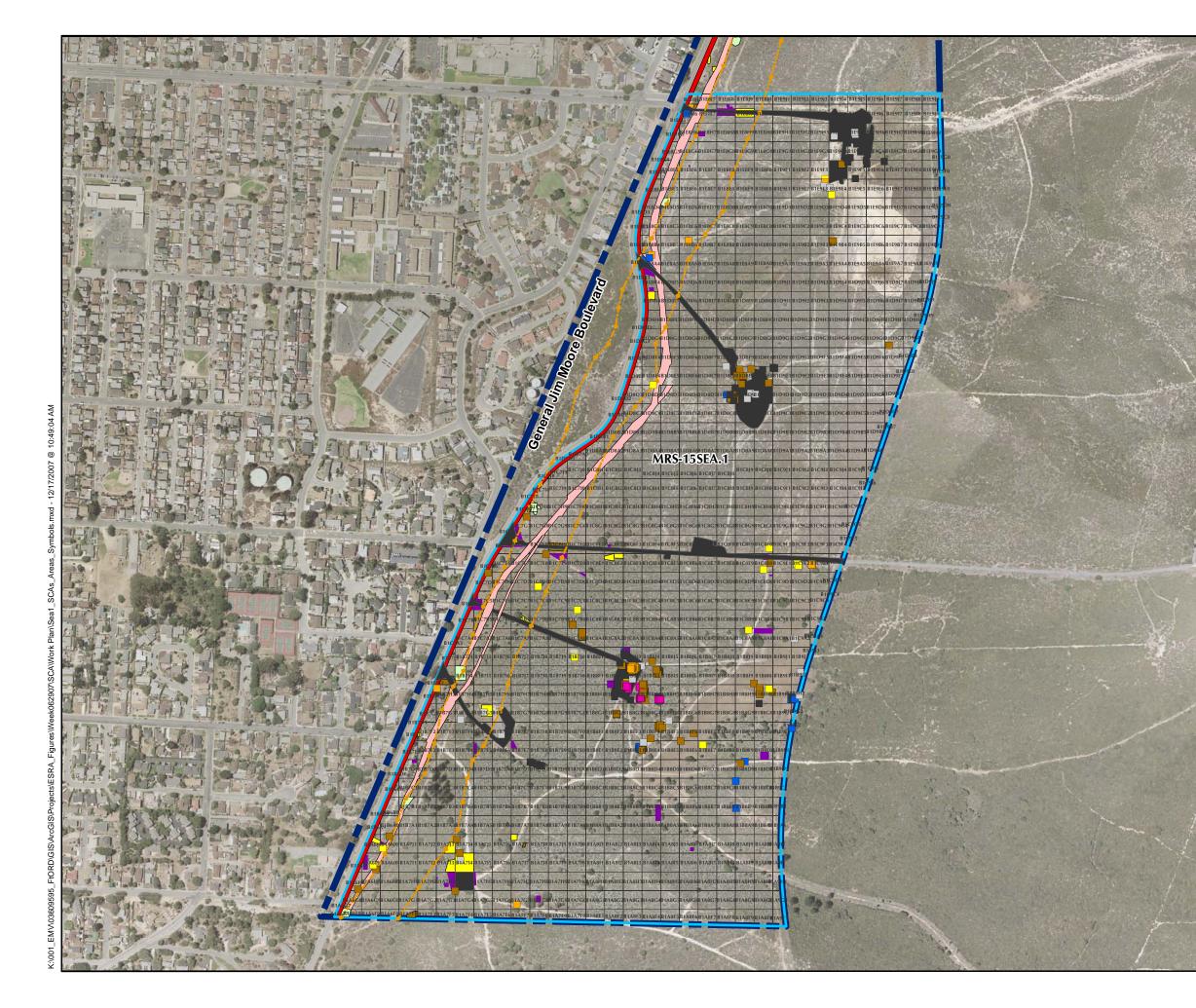






APPENDIX A

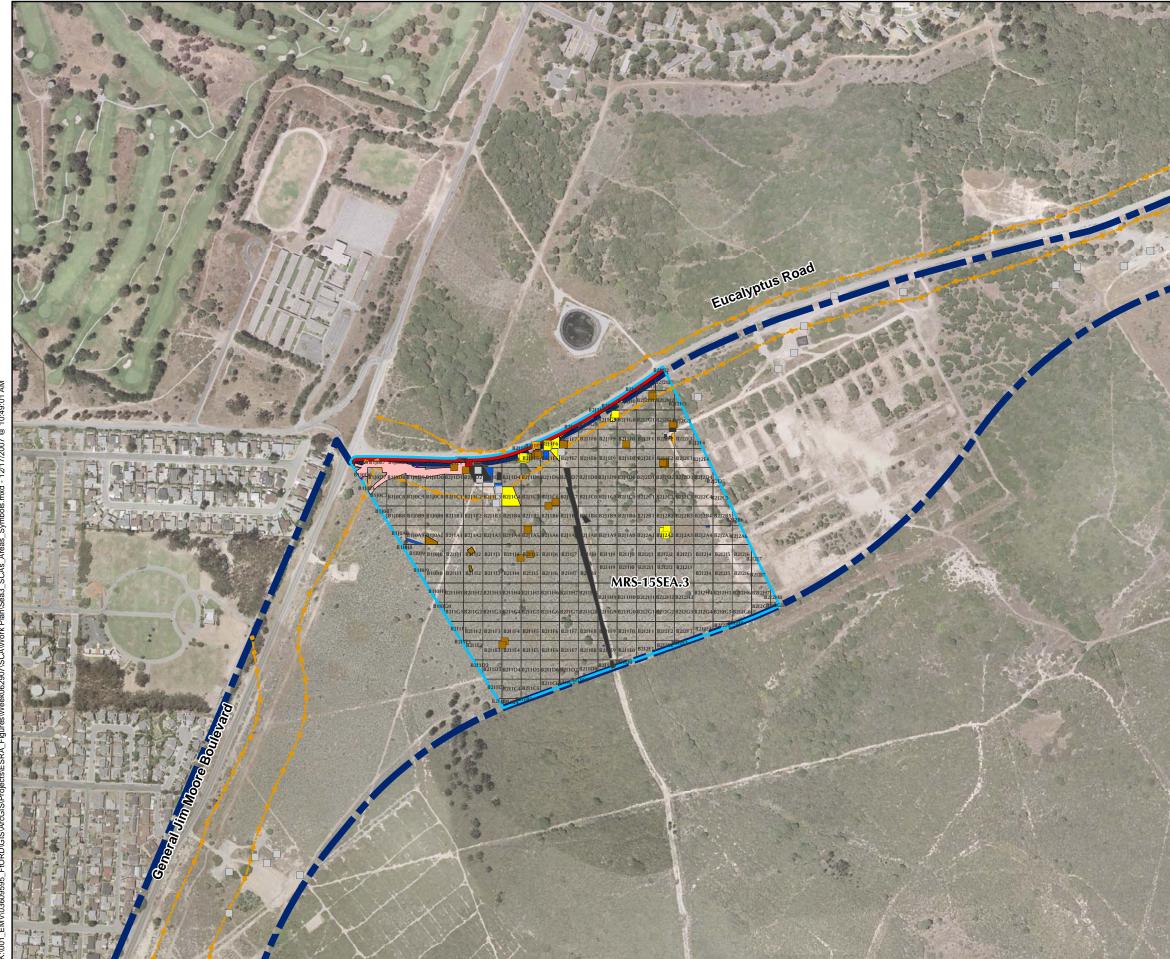
Maps

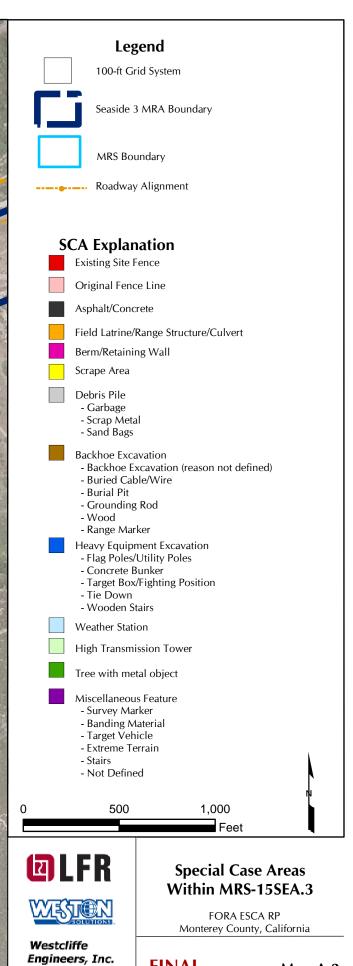






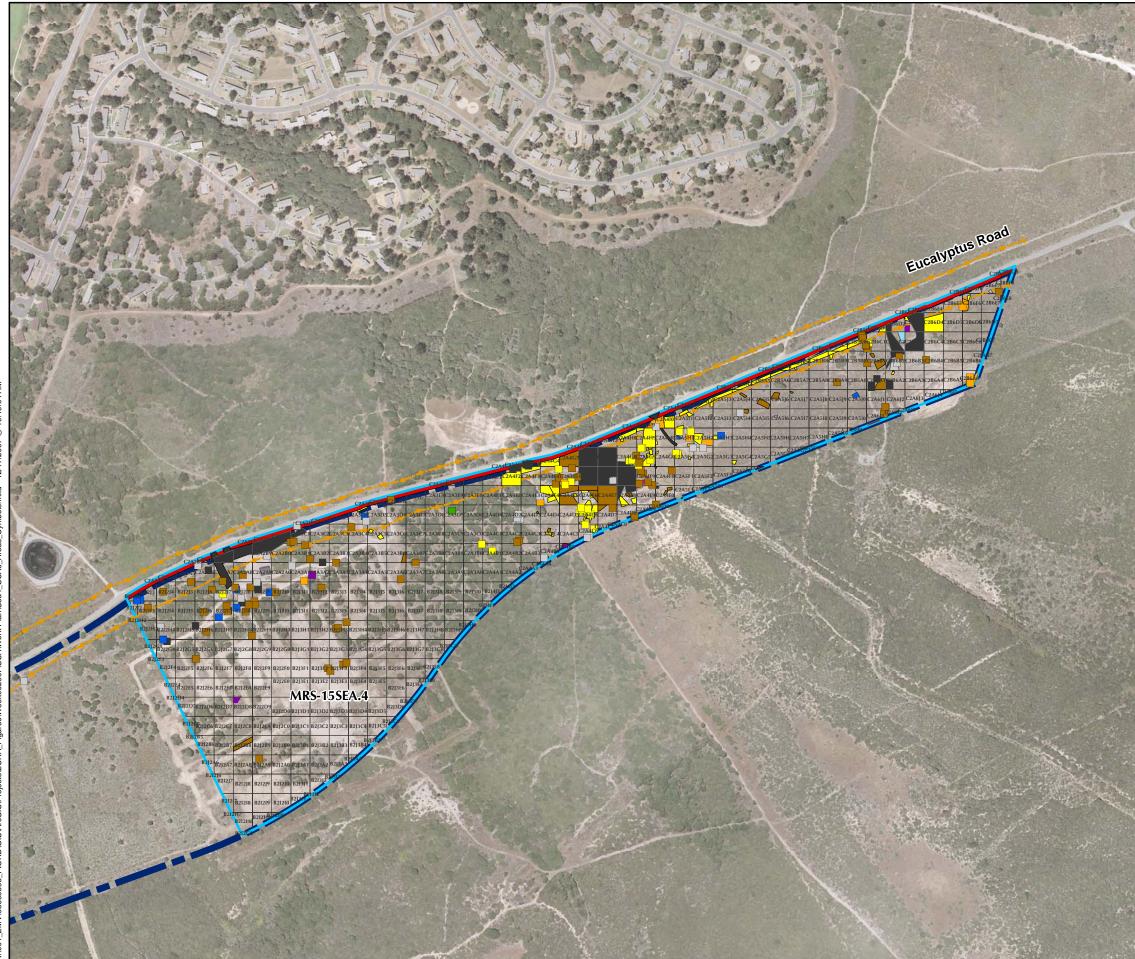


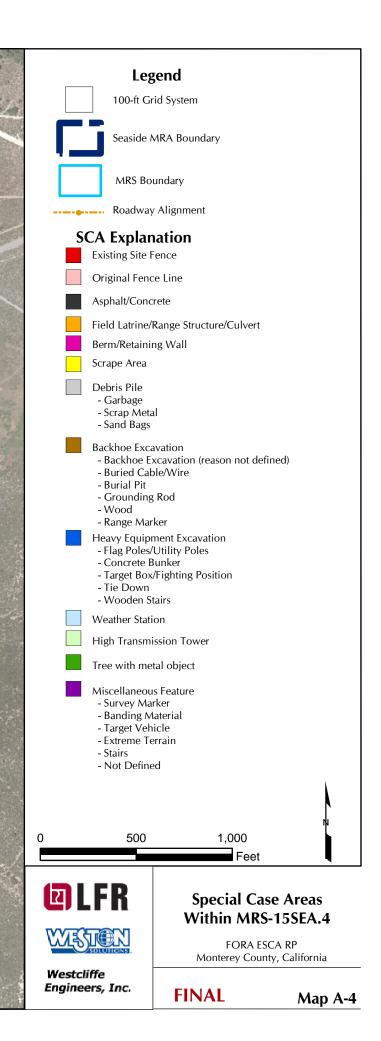




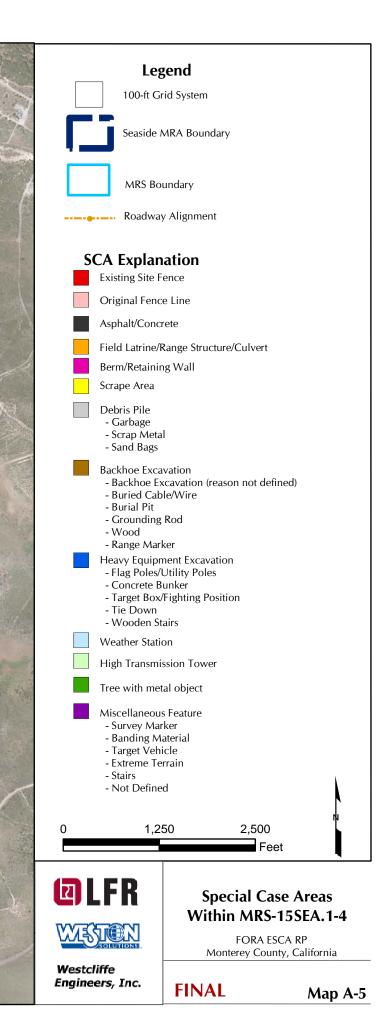
FINAL

Map A-3









APPENDIX B

Seaside MRA – HTW History and Conditions

Location	Summary
MRS-SEA 1 (Parcel E24)	Remediation at Installation Restoration Program (IRP) Site 39, Range 21 (HA-21D), was conducted to remove lead, copper, and antimony in soil from spent small arms ammunition (SAA). The remedial action included the removal of approximately 9,600 cubic yards of affected soil. The average lead concentration of soil remaining in place following remedial activities at Range 21 was 35 milligrams per kilogram (mg/kg). Results of the confirmation sampling indicated that soil with chemical concentrations above target cleanup concentrations was removed. No further action related to munitions constituents (MC) was recommended for HA-21D under the Basewide Range Assessment (BRA).
	The evaluation of HA-112 (MRS-15SEA.1) included a literature search, a review of the information gathered during the munitions response at the Munitions Response Area (MRA), and a site reconnaissance. No suspect areas outside of the previously identified overlapping Historical Areas (HAs) were identified during the reconnaissance of the MRA, and no further action related to MC was recommended under the BRA.
	The assessment of HA-22D (Range 22) included site reconnaissance and site investigation soil sampling for MC. Site reconnaissance identified targets and areas with concentrations of spent SAA. Soil sample results indicated that lead concentrations were below the Fort Ord maximum background concentration and copper concentrations were below screening levels and under the U.S. Environmental Protection Agency (EPA) Region IX residential preliminary remediation goal (PRG). No further action related to MC was recommended for HA-22D under the BRA.
	The assessment of HA-23D (Range 23) included site reconnaissance and site investigation soil sampling for MC. Site reconnaissance identified some areas with concentrations of spent SAA. Soil sample results indicated that the lead concentrations were below screening levels and under the EPA Region IX PRG in four of five samples collected. No further action related to MC was recommended for HA-23D under the BRA.
MRS-SEA 2 (Parcel E34)	Remediation at IRP Site 39 Range 19 (HA-19D) was conducted to remove lead, copper, and antimony in soil from spent SAA. The remedial action included the removal of approximately 1,400 cubic yards of affected soil. Results of the confirmation sampling indicated that soil with chemical concentrations above target cleanup concentrations was removed. No further action related to MC was recommended for HA-19D under the BRA.
	The evaluation of HA-113 (MRS-15SEA.2) included a literature search, review of the information gathered during the munitions response at the MRA, and a site reconnaissance. No suspect areas outside of the previously identified overlapping HAs were identified during the reconnaissance of the MRA, and no further action related to MC is recommended under the BRA.
	The assessment of HA-20D (Range 20) included site reconnaissance and site investigation soil sampling for MC. Soil sample results indicated that metals concentrations were below the Fort Ord maximum background concentrations, and no further action related to MC was recommended for HA-20D under the BRA.
	The evaluation of HA-59D (Range M1) included a literature search, review of the information gathered during the munitions response, and reconnaissance of the site. No targets, spent ammunition, or other Munitions and Explosives of Concern- (MEC-) related items were observed, and no further action related to MC was recommended for HA-59D under the BRA.

Seaside MRA – HTW History and Conditions

Location	Summary
MRS-SEA 3 (Parcel E23.1)	Remediation at IRP Site 39, Range 18 (HA-18D), was conducted to remove lead, copper, and antimony in soil from spent SAA. The remedial action included the removal of approximately 24,900 cubic yards of affected soil. Results of the confirmation sampling indicated that soil with chemical concentrations above target cleanup concentrations was removed. No further action related to MC was recommended for HA-18D under the BRA.
	The evaluation of HA-114 (MRS-15SEA.3) included a literature search and review of the information gathered during the munitions response at the MRA. Based on the limited number of items identified during the munitions response, no further action related to MC was recommended for HA-114 under the BRA.
MRS-SEA 4 (Parcel E23.2)	Remediation at IRP Site 39, Ranges 18 and 46 (HA-18D and HA-46D), was conducted to remove lead, copper, and antimony in soil from spent SAA. The remedial action at Range 18 included the removal of approximately 24,900 cubic yards of affected soil. Results of the confirmation sampling indicated that soil with chemical concentrations above target cleanup concentrations was removed. No further action related to MC was recommended for HA-18D under the BRA.
	The remedial action at Range 46 included the removal of approximately 3,900 cubic yards of affected soil. The average lead concentration of soil remaining in place following remedial activities at Range 46 was 26 mg/kg. Results of the confirmation sampling indicated that soil with chemical concentrations above target cleanup concentrations was removed. No further action related to MC was recommended for HA-46D under the BRA.
	The assessment of HA-48D (Range 48) included site reconnaissance and site investigation soil sampling for MC. Soil sample results indicated that metals concentrations exceeded the Fort Ord maximum background concentrations, but were below cleanup levels. Because sample results were below cleanup levels, no further action related to MC was recommended for HA-48D under the BRA.
	The evaluation of HA-115 (MRS-15SEA.4) included a literature search, review of the information gathered during the munitions response at the site, and a site reconnaissance. No suspect areas outside of the previously identified overlapping HAs were identified during the reconnaissance of the site, and no further action related to MC is recommended under the BRA.
	The evaluation of HA-50D (Booby Trap Range) included a literature search and reconnaissance of the site. Blank casings, 50-caliber links, and concrete debris were found. No targets, fighting positions, or other MEC-related items were observed, and no further action related to MC was recommended for HA-50D under the BRA.

Seaside MRA – HTW History and Conditions

Reference: United States Department of the Army. 2007. Draft Findings of Suitability for Early Transfer (FOSET), Former Fort Ord, Environmental Services Cooperative Agreement (ESCA) Parcels and Non-ESCA Parcels (Operable Unit Carbon Tetrachloride Plume) (FOSET 5). June 26. (Fort Ord Administrative Record No. FOSET-004)