

FINAL

Record of Decision

Group 3

Del Rey Oaks / Monterey, Laguna Seca Parking,
and Military Operations in Urban Terrain Site
Munitions Response Areas

Former Fort Ord, California

October 27, 2014

United States Department of the Army
Base Realignment and Closure (BRAC)
Former Fort Ord, California

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1. DECLARATION

1.1. Site Name and Location

The former Fort Ord is located in northwestern Monterey County, California, approximately 80 miles south of San Francisco (Figure 1). The U.S. Environmental Protection Agency (EPA) identification number for Fort Ord is CA7210020676. This Record of Decision (ROD) addresses Munitions and Explosives of Concern (MEC), specifically unexploded ordnance (UXO) and discarded military munitions (DMM) that potentially remains in the Group 3 Munitions Response Areas (MRAs), which include the Del Rey Oaks (DRO)/Monterey MRA, the Laguna Seca Parking MRA, and the Military Operations in Urban Terrain (MOUT) Site MRA.

Since 1917, military units (e.g., cavalry, field artillery, and infantry) used portions of the former Fort Ord for training (e.g., maneuvers, live-fire target ranges) and other purposes. Because the military conducted munitions-related activities (e.g., live-fire training) on the facility, military munitions (e.g., UXO and DMM) may be present on parts of the former Fort Ord. The types of military munitions used at the former Fort Ord included: artillery and mortar projectiles, rockets, guided missiles, rifle and hand grenades, practice land mines, pyrotechnics, bombs, and demolition materials. For the Fort Ord Military Munitions Response Program (MMRP) being conducted and this ROD, MEC does not include small arms ammunition (.50 caliber and below). A Glossary of Military Munitions Response Program Terms is provided in Appendix A.

In March 2007, the United States Department of the Army (Army) and Fort Ord Reuse Authority (FORA) entered into an Environmental Services Cooperative Agreement (ESCA) to provide funding for MEC remediation services. In accordance with the ESCA and an Administrative Order on Consent (AOC), FORA is responsible for completion of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) response actions, except for those responsibilities retained by the Army, on approximately 3,300 acres of the former Fort Ord with funding provided by the Army. The AOC was entered into voluntarily by FORA, EPA, California Environmental Protection Agency Department of Toxic Substances Control (DTSC), and the United States Department of Justice Environment and Natural Resources Division in December 2006 (EPA Region 9 CERCLA Docket No. R9-2007-03). The underlying property was transferred to FORA in May 2009. The Group 3 MRAs are included in the ESCA between the Army and FORA.

The Group 3 MRAs include sites where MEC were found and munitions response (MEC removal) actions were conducted. The Group 3 MRAs contain portions, or all, of seven munitions response sites (MRSs) that were suspected to have been used for military training with military munitions (Table 1). These MRSs were investigated, with all detected MEC removed. These munitions response actions also included Quality Control and Quality Assurance requirements that evaluated the adequacy of the munitions response actions. Although MEC is not expected to be encountered within these MRSs, it is possible that some MEC may not have been detected and remains present. Because a future land user (e.g., worker or recreational user) may encounter MEC at the Group 3 MRAs, a Group 3 Remedial Investigation/Feasibility Study (RI/FS) was conducted to evaluate remedial alternatives to address this potential risk to future land users (ESCA RP Team 2012). The Group 3 RI/FS was developed by FORA under the ESCA and in accordance with the AOC.

1.2. Basis and Purpose

This decision document selects the remedial action for MEC for the Group 3 MRAs. The remedy for each MRA was selected in accordance with CERCLA of 1980, as amended, and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on information and reports contained in the Administrative Record for the former Fort Ord.

This decision is undertaken pursuant to the President's authority under CERCLA Section 104, as delegated to the Army in accordance with Executive Order 12580, and in compliance with the process set out in CERCLA Section 120. The selection of the remedy is authorized pursuant to CERCLA Section 104, and the selected remedy will be carried out in accordance with CERCLA Section 121.

The Army and EPA have jointly selected the remedy. The DTSC has had an opportunity to review and comment on the ROD.

1.3. Site Assessment

This ROD addresses hazardous substances and pollutants or contaminants which may pose a threat to human health and welfare or the environment.

The Army has provided the CERCLA covenant in the deeds for the property. Some MEC items found and detonated on the property in the past were a Resource Conservation and Recovery Act (RCRA) reactive waste and thus a CERCLA hazardous substance. Therefore, MEC items discovered on the property in the future will likewise be addressed as such pursuant to the CERCLA covenant unless the Army determines that an item is not a hazardous substance by making a waste specific determination based on testing or knowledge consistent with RCRA.

1.4. Description of the Selected Remedy

The selected remedy addresses risks to human health and the environment from MEC that potentially remains in the Group 3 MRAs. Munitions responses (MEC removals) have been completed at the Group 3 MRAs, significantly reducing the risks to human health and the environment. The selected remedy for the Group 3 MRAs includes Land Use Controls (LUCs) because detection technologies may not detect all MEC present. The LUCs include requirements for: (1) MEC recognition and safety training for those people that conduct ground-disturbing or intrusive activities on the property; (2) construction support by UXO-qualified personnel for ground-disturbing or intrusive activities; and (3) restrictions prohibiting residential use. For the purpose of this decision document, residential use includes, but is not limited to: single family or multi-family residences; childcare facilities; nursing homes or assisted living facilities; and any type of educational purpose for children or young adults in grades kindergarten through 12 (Army 2007). Any proposal for residential development in the Group 3 MRAs will be subject to regulatory agency and Army review and approval; however, per the FORA Fort Ord Reuse Plan ("Base Reuse Plan"; FORA 1997), no residential reuse is planned for the Group 3 MRAs. The selected remedy will be implemented by FORA in its capacity as Grantee under the ESCA and as a party to the AOC and not in its capacity as the owner of the real estate or as a government entity. A Remedial Design/Remedial Action (RD/RA) Work Plan will be developed to: (1) outline the processes for implementing the LUCs selected as part of the remedy; and (2) identify procedures for responding to discoveries of MEC. The Army will evaluate these sites as part of the installation-wide CERCLA five-year review to be conducted in 2017. The selected LUCs may be modified in the future based on the five-year review process.

As part of the LUC implementation strategy, Long Term Management Measures comprised of a deed notice and restrictions, annual monitoring and reporting, and five-year review reporting will be included for the land use areas within the Group 3 MRAs. As part of the early transfer of the subject property, the Army has entered into State Covenants to Restrict the Use of Property (CRUPs) with the DTSC that document land use restrictions. The existing deeds to FORA for the Group 3 MRA parcels include the following land use restrictions: 1) residential use restriction; and 2) excavation restrictions (unless construction support and MEC recognition and safety training are provided). The Army will modify the existing land use restrictions in the federal deeds, as necessary, to reflect the selected remedy. FORA, or its successor under the ESCA and the AOC, will prepare and submit annual letter reports to the EPA and the DTSC summarizing any MEC found and changes in site conditions that could increase the possibility of encountering MEC. Copies of the annual monitoring report will also be provided to the Army for inclusion in the five-year reviews.

While the Army does not consider California laws and regulations concerning CRUPs to be potential applicable or relevant and appropriate requirements (ARARs), the Army entered into CRUPs with the DTSC at the time the property was transferred to FORA. The DTSC will modify the existing CRUP, if appropriate, to reflect the land use restrictions included in the selected remedy. Although the DTSC and the EPA Region IX disagree with the Army's determination that California laws and regulations concerning CRUPs are not potential ARARs, they will agree-to-disagree on this issue since the Army executed the CRUPs and the DTSC will modify the CRUPs, if appropriate, to be consistent with the identified remedy.

1.5. Statutory Determination

The selected remedy is protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate to this remedial action, and is cost effective. Munitions responses to address the principal threat by removing all identified MEC items have already been completed. This meets the intent of using permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable, and satisfies the statutory preference for treatment as a principal element (i.e., reducing the toxicity, mobility, or volume of hazardous substances, pollutants, or contaminants as a principal element through treatment).

Because the selected remedy may not result in removal of all MEC potentially present within the Group 3 MRAs, a statutory review will be conducted by the Army within five years after initiation of the remedial action to ensure the remedy is, or will be, protective of human health and the environment. The next five-year review will occur in 2017.

1.6. ROD Data Certification Checklist

The following information is included in the Decision Summary, Section 2, of this ROD. Additional information can be found in the Administrative Record file for this site.

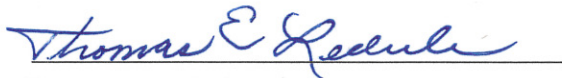
- Types of MEC identified during previous removal actions (Section 2.8.).
- Current and reasonably anticipated future land use assumptions used in the risk assessment and ROD (Section 2.9. and Table 2).
- Current after-action "Overall MEC Risk Scores" estimated in the Risk Assessment based upon the current site conditions (Section 2.10.).

- Remedial action objectives for addressing the current after-action “Overall MEC Risk Scores” estimated in the Risk Assessment (Section 2.11.).
- How source materials constituting principal threats are addressed (Sections 2.13. and 2.14.).
- Potential land use that will be available at the site as a result of the selected remedy (Section 2.14. and Table 2).
- Estimated capital, annual operations and maintenance (O&M), and total present worth costs, discount rate, and the number of years over which the remedy cost estimates are projected (Section 2.14.4.).
- Key factor(s) that led to selection of the remedy (Section 2.14.1 and 2.15. and Tables 3, 4, and 5).

1.7. Authorizing Signatures and Support Agency Acceptance of Remedy

**Record of Decision
Group 3
Del Rey Oaks/Monterey, Laguna Seca Parking, and
Military Operations in Urban Terrain Site Munitions Response Areas
Former Fort Ord, California**

Signature Sheet for the foregoing Record of Decision for Group 3, Del Rey Oaks/Monterey, Laguna Seca Parking, and Military Operations in Urban Terrain Site Munitions Response Areas, Former Fort Ord, California, among the United States Department of the Army, the United States Environmental Protection Agency, and the California Environmental Protection Agency, Department of Toxic Substances Control.



Thomas E. Lederle
Chief
Base Realignment and Closure Division
U.S. Department of the Army

4 Nov 2014
Date

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William K. Collins

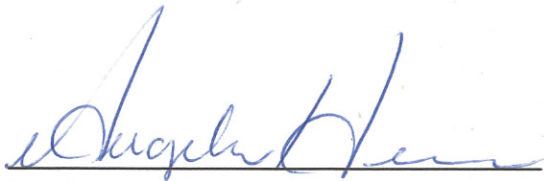
William K. Collins
BRAC Environmental Coordinator
Fort Ord BRAC Office
U.S. Department of the Army

10/28/2014

Date

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Angeles Herrera
Assistant Director, Superfund Division
Federal Facilities and Site Cleanup Branch
U.S. Environmental Protection Agency, Region IX

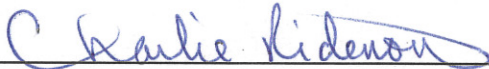
11/25/2014

Date

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Former Fort Ord, California**

Signature Sheet for the foregoing Record of Decision for Group 3, Del Rey Oaks/Monterey, Laguna Seca Parking, and Military Operations in Urban Terrain Site Munitions Response Areas, Former Fort Ord, California, among the United States Department of the Army, the United States Environmental Protection Agency, and the California Environmental Protection Agency, Department of Toxic Substances Control.

The State of California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) had an opportunity to review and comment on the Record of Decision (ROD) and our concerns were addressed.



Charlie Ridenour, P.E.
Branch Chief
Cleanup Program - Sacramento Office
California Environmental Protection Agency
Department of Toxic Substances Control

11/5/14
Date

2. DECISION SUMMARY

2.1. Site Description

The former Fort Ord is located near Monterey Bay in northwestern Monterey County, California, approximately 80 miles south of San Francisco (Figure 1). The former Army post consists of approximately 28,000 acres adjacent to Monterey Bay and the cities of Seaside, Sand City, Monterey, and Del Rey Oaks to the south and Marina to the north. State Route 1 passes through the western portion of former Fort Ord, separating the beachfront from the rest of the base. Laguna Seca Recreation Area and Toro Regional Park border former Fort Ord to the south and southeast, respectively, as well as several small communities, such as Toro Park Estates and San Benancio. Additional information about the site:

- EPA Identification Number: CA7210020676;
- Lead Agency: Army;
- Lead Oversight Agency: EPA;
- Support Agency: DTSC;
- Source of Cleanup Monies: Army;
- Site Type: Former Military Installation.

2.2. Site History

Since 1917, portions of the former Fort Ord were used by cavalry, field artillery, and infantry units for maneuvers, target ranges, and other purposes. From 1947 to 1974, Fort Ord was a basic training center. The 7th Infantry Division was activated at Fort Ord in October 1974, and occupied Fort Ord until base closure in 1994. Fort Ord was selected in 1991 for decommissioning, but troop reallocation was not completed until 1993 and the base was not officially closed until September 1994. The property remaining in the Army's possession was designated as the Presidio of Monterey Annex on October 1, 1994, and subsequently renamed the Ord Military Community (OMC). Although Army personnel still operate parts of the base, no active Army division is stationed at the former Fort Ord. Since the base was selected in 1991 for Base Realignment and Closure (BRAC), site visits, historical and archival investigations, military munitions sampling, and removal actions have been performed and documented in preparation for transfer and reuse of the former Fort Ord property. The Army will continue to retain the OMC and the U.S. Army Reserve Center located at the former Fort Ord. The remainder of Fort Ord was identified for transfer to Federal, State, and local government agencies and other organizations and, since base closure in September 1994, has been subjected to the reuse process. Portions of the property on the installation have been transferred. A large portion of the Inland Training Ranges was assigned to the U.S. Department of the Interior, Bureau of Land Management (BLM). Other areas on the installation have been, or will be, transferred through economic development conveyance, public benefit conveyance, negotiated sale, or other means.

Munitions-related activities (e.g., live-fire training, demilitarization) involving different types of conventional military munitions (e.g., artillery and mortar projectiles, rockets and guided missiles, rifle and hand grenades, practice land mines, pyrotechnics, bombs, and demolition materials) were conducted at Fort Ord. Because of these activities, MEC, specifically UXO and DMM, have been encountered and are known or suspected to remain present at sites throughout the former Fort Ord. A Glossary of Military Munitions Response Program Terms is provided in Appendix A.

2.3. Enforcement and Regulatory History

The Army is the responsible party and lead agency for investigating, reporting, making cleanup decisions, and taking cleanup actions at the former Fort Ord under CERCLA. To address the possibility of the public being exposed to explosive hazards, MEC investigations and removal actions began following BRAC listing and closure of Fort Ord. In November 1998, the Army agreed to evaluate military munitions at former Fort Ord in an Ordnance and Explosives Remedial Investigation/Feasibility Study (basewide OE Remedial Investigation/Feasibility Study) — now termed the basewide Munitions Response Remedial Investigation/Feasibility Study (basewide MR Remedial Investigation/Feasibility Study) — consistent with CERCLA. A Federal Facility Agreement (FFA) was signed in 1990 by the Army, EPA, DTSC (formerly the Department of Health Services or DHS), and the California Regional Water Quality Control Board (RWQCB). The FFA established schedules for performing remedial investigations and feasibility studies and requires that remedial actions be completed as expeditiously as possible. In April 2000, an agreement was signed between the Army, EPA, and DTSC to evaluate military munitions and perform military munitions response activities at the former Fort Ord subject to the provisions of the Fort Ord FFA.

The basewide MR Remedial Investigation/Feasibility Study program reviews and evaluates past investigative and removal actions, as well as recommends future response actions deemed necessary to protect human health and the environment regarding explosive safety risks posed by MEC on the basis of proposed reuses. These reuses are specified in the Base Reuse Plan (FORA 1997) and its updates. The basewide MR Remedial Investigation/Feasibility Study documents are being prepared in accordance with the FFA, as amended. These documents are made available for public review and comment, and placed in the Administrative Record.

The Army has been conducting military munitions response actions (e.g., investigation, removal) at identified MRSs and will continue these actions to mitigate imminent MEC-related hazards to the public, while gathering data about the type of military munitions and level of hazard at each of the MRSs for use in the basewide MR Remedial Investigation/Feasibility Study. The Army is performing its activities pursuant to the President's authority under CERCLA Section 104, as delegated to the Army in accordance with Executive Order 12580 and in compliance with the process set out in CERCLA Section 120. Regulatory agencies (EPA and DTSC) have been and will continue to provide oversight of the munitions response activities pursuant to the FFA.

The Army conducts ongoing and future responses to MEC at the former Fort Ord that are components of the Army's basewide efforts to promote explosive safety because of Fort Ord's history as a military base. These efforts include: (1) five-year reviews and reporting; (2) notices and restrictions in deeds and property transfer documentations (e.g., letter of transfer); (3) MEC incident reporting; (4) MEC recognition and safety training; (5) school education; and (6) community involvement.

In March 2007, the Army and FORA entered into an ESCA to provide funding for MEC remediation services. In accordance with the ESCA, the AOC, and the FFA Amendment No. 1, FORA is responsible for completion of the CERCLA remedial activities, except for those responsibilities retained by the Army, on approximately 3,300 acres of the former Fort Ord with funding provided by the Army. The AOC was entered into voluntarily by FORA, EPA, DTSC, and the United States Department of Justice Environment and Natural Resources Division in December 2006 (EPA Region 9 CERCLA Docket No. R9-2007-03). The underlying property was transferred to FORA in May 2009.

As part of the early transfer of the subject property, the Army has entered into State CRUPs with the DTSC that document land use restrictions. The applicability of and requirements for CRUPs are described in California Code of Regulations Section 67391.1 and California Civil Code Section 1471.

As described in Final Summary of Existing Data Report, Former Fort Ord, Monterey, California (ESCA RP Team 2008), the ESCA areas were combined into nine MRAs, and they were further consolidated into four groups according to similar pathway-to-closure characteristics. Group 1 consists of the Parker Flats and Seaside MRAs. Group 2 consists of the California State University Monterey Bay (CSUMB) Off-Campus and County North MRAs. Group 3 consists of DRO/Monterey, Laguna Seca Parking, and MOUT Site MRAs. Originally, Group 3 included the Interim Action Ranges MRA. The Interim Action Ranges MRA was removed from Group 3 for further evaluation as agreed upon by FORA, EPA, DTSC and the Army. Group 4 consists of the Future East Garrison MRA.

2.4. Community Participation

The Final Group 3 Remedial Investigation/Feasibility Study was published on July 31, 2012, and the Group 3 Proposed Plan was made available to the public on January 11, 2013. The Proposed Plan presented the preferred alternative of Land Use Controls (Alternative 2). The Land Use Control alternative is being selected as the final remedy in this ROD. The Proposed Plan also summarized the information in the Group 3 Remedial Investigation/Feasibility Study and other supporting documents in the Administrative Record. These documents were made available to the public at the following locations:

- Seaside Library, 550 Harcourt Avenue, Seaside, California.
- California State University Monterey Bay Tanimura & Antle Family Memorial Library, Divarty Street, CSUMB Campus, Seaside, California.
- Fort Ord Administrative Record, Building 4463, Gigling Road, Room 101, Ord Military Community, California.
- www.fortordcleanup.com website.

The notice of the availability of the Proposed Plan was published in the Monterey County Herald and the Salinas Californian on January 15, 2013. A 30-day public comment period was held from January 15, 2013, to February 13, 2013. In addition, a public meeting was held on January 30, 2013 to present the Proposed Plan to a broader community audience than those that had already been involved at the site. At this meeting, representatives from the Army, EPA, and DTSC were present, and the public had the opportunity to submit written and oral comments about the Proposed Plan. Representatives from FORA were also present to answer questions. The Army's response to the comments received during this period is included in the Responsiveness Summary, which is part of this ROD (Section 3.0).

2.5. Scope and Role of Response Action

This ROD addresses the planned response action for managing the potential risk to future land users from MEC that potentially remains in the Group 3 MRAs, where munitions response activities have been completed as described in Section 2.7 below and detailed in the Group 3 Remedial Investigation/Feasibility Study (ESCA RP Team 2012).

The planned response action for the Group 3 MRAs will be the final remedy for protection of human health and the environment. Remedial Alternative 2, which was identified as the preferred remedial alternative for the Group 3 MRAs, is summarized as follows:

- **Remedial Alternative 2 - Land Use Controls (LUCs):** MEC recognition and safety training for people that will conduct ground-disturbing or intrusive activities; construction support during ground-disturbing or intrusive activities; and restrictions prohibiting residential use.

The selected remedy will be implemented by FORA under the ESCA and in accordance with the AOC. An RD/RA Work Plan will be developed to: (1) outline the processes for implementing land use restrictions; and (2) identify procedures for responding to discoveries of MEC, including coordinating a response to a discovery of a significant amount of MEC in the Group 3 MRAs. The selected LUCs may be modified in the future based on the five-year review process.

In addition, Long Term Management Measures comprised of a deed restriction, annual monitoring and reporting, and five-year review reporting will be implemented for the reuse areas within the Group 3 MRAs.

Based on the Army Basewide Range Assessment Program (Shaw/MACTEC 2009), which evaluated the potential presence of chemicals of concern in soil, no further action has been recommended for Historical Areas (HAs) within the DRO/Monterey, Laguna Seca Parking, and MOUT Site MRAs.

2.6. Site Characteristics

2.6.1. DRO/Monterey MRA

The DRO/Monterey MRA is located in the southwestern portion of the former Fort Ord and encompasses approximately 30 acres of undeveloped land and approximately 5.245 acres of the existing South Boundary Road and associated right-of-way (Figure 1). The DRO/Monterey MRA is comprised of two non-contiguous portions of MRS-43 and a portion of the South Boundary Road, which is not located within the boundaries of a MRS (Figure 2).

Historical records and recovered MEC and munitions debris (MD) indicate that MRS-43 was previously used for artillery training with 37 millimeter (mm) projectiles.

2.6.2. Laguna Seca Parking MRA

The Laguna Seca Parking MRA is located in the south-central portion of the former Fort Ord adjacent to the Laguna Seca Raceway and encompasses approximately 276 acres (Figure 1). The Laguna Seca Parking MRA includes four MRSs: MRS-14A, MRS-29, MRS-30, and MRS-47 (Figure 3).

Historical records and recovered MEC and MD indicate that these MRSs were previously used for artillery training, mortar training, troop training, and basic maneuvers.

2.6.3. MOUT Site MRA

The MOUT Site MRA is located in the central portion of the former Fort Ord within the northeastern portion of the historical impact area and encompasses approximately 58 acres (Figure 1). The MRA consists of MRS-28 (the MOUT training area), which includes a mock city training area currently used for tactical training of military, federal, and local law enforcement and emergency services providers, and a portion of Barloy Canyon Road located along the eastern boundary of the historical impact area (Figure 4). The northern segment of the Barloy Canyon Road portion of the MOUT Site MRA passes through a former training site identified as MRS-270. The southern portion of Barloy Canyon Road is bordered by

MRS-14D to the east. The MRA also includes a portion of Barloy Canyon Road located outside of a MRS boundary.

Historical records and recovered MEC and MD indicate that the MOUT training area (MRS-28) was used for infantry training in an urban setting in addition to hand grenade training, firing point for rocket launcher training, hand-to-hand combat, combat pistol training, assault course, squad tactics, and night defense training. The Barloy Canyon Road portion of the MRA was maintained as a road and the overlapping MRS-27O was used for bivouac, troop maneuvers, and subcaliber artillery training.

2.7. Group 3 MRAs Remedial Investigation Summary

The Group 3 MRAs contain portions, or all, of seven MRSs identified in Table 1, where munitions response actions have been conducted. These MRSs are also shown on Figures 2, 3, and 4. The Remedial Investigation for the Group 3 MRAs is based on the evaluation of previous work conducted for the MRAs in accordance with the Group 3 Remedial Investigation/Feasibility Study Work Plan (ESCA RP Team 2009).

This section provides background information on the Group 3 MRA Remedial Investigation data collection and review (site evaluations) conducted for the MRSs. Table 1 summarizes the results of the site-specific remedial investigations, and Section 2.8 presents a summary of the site evaluations for the MRSs in the Group 3 MRAs as presented in the Group 3 Remedial Investigation/Feasibility Study (Volume 1; ESCA RP Team 2012).

2.7.1. DRO/Monterey MRA

Scope of Removal Actions - The initial phase of the MEC removal action was designed to address MEC present to a depth of up to 4 feet below ground surface (bgs). During this removal action, all detected anomalies (i.e., ferromagnetic material), even those deeper than 4 feet, were investigated with all detected MEC removed within the MRA. The next phase of the investigation was designed to address MEC to depth of detection. All anomalies detected during the removal actions were investigated or resolved, and all detected MEC items were removed or destroyed. These investigations and removal actions conducted within the DRO/Monterey MRA were focused on addressing explosive hazards.

At the DRO/Monterey MRA, the primary munitions response was performed by the Army prior to the ESCA.

Site Evaluation – The evaluation process was documented by completion of a series of checklists for the DRO/Monterey MRA in accordance with the Group 3 Remedial Investigation/Feasibility Study Work Plan (ESCA RP Team 2009). Checklists prepared for the MRA were provided as Appendix D of the Group 3 Remedial Investigation/Feasibility Study (Volume 1; ESCA RP Team 2012).

The DRO/Monterey MRA is comprised of two non-contiguous portions of MRS-43 and a portion of South Boundary Road, which is not located within the boundaries of an MRS (Figure 2). MRS-43 was identified through a review of former Fort Ord records compiled for the Revised Fort Ord Archive Search Report (USACE 1997a) and was used to facilitate MEC investigations and removal actions. The DRO/Monterey MRA is bounded by MRS-15 DRO.1 along the northern side of South Boundary Road and by Track 1 sites to the northwest (no MRS designation) and southeast (formerly MRS-43A). The boundaries of the two non-contiguous portions of MRS-43 include a large section of Parcel L6.2 and all of Parcel E29.1 for a combined area of approximately 29 acres (Table 2). The South Boundary Road portion of the DRO/Monterey MRA includes Parcels L20.13.1.2 and L20.13.3.1 for a total area of

approximately 5.245 acres (Table 2). Based on the results of the literature review, investigations, and removal actions, the MRA was impacted during military training with the 37mm projectile used prior to World War II. Items found may have the potential to penetrate deeper than the depth of detection of the digital and analog equipment used during the removal actions. These findings are consistent with the historical use of this MRA as a weapons and troop training area as indicated in the Summary of Existing Data Report (ESCA RP Team 2008).

The Army's munitions response contractor conducted MEC removal actions across the entire MRA with the exception of a 50-foot wide strip of land on the northwest boundary of the MRA (in the habitat reserve area, Parcel L6.2) and the southern side of the road east of Parcel E29.1, which are both located outside of the MRS-43 boundary (Figure 2). The initial phase of the MEC removal action was conducted using analog instruments to depths of 4 feet bgs. The subsequent phase of the investigation was conducted using digital geophysical equipment to the depth of detection. While two small portions of the MRA have not been subjected to MEC removal actions, SiteStat/GridStat (SS/GS) investigation grids were either located partially within or immediately adjacent to the two areas. No MEC or MD items were recovered from the SS/GS investigation grids located within or immediately adjacent to these two areas. Therefore, it is expected that finding MEC in either of these two areas would not be likely.

2.7.2. Laguna Seca Parking MRA

Scope of Removal Actions - The MEC removal actions were designed to address MEC to a depth of 4 feet bgs in MRS-29, MRS-30, MRS-47, and central portion of MRS-14A, and to a depth of 1 foot bgs along the western and eastern slopes of MRS-14A. All anomalies (i.e., ferromagnetic material), even those deeper than 4 feet in MRS-29, MRS-30, MRS-47, and central portion of MRS-14A, were investigated with all detected MEC encountered removed within the MRA. These investigations and removal actions conducted within the Laguna Seca Parking MRA were focused on addressing explosive hazards.

At the Laguna Seca Parking MRA, the three primary munitions response contractors that performed munitions responses to MEC were Human Factors Applications, Inc. (HFA), UXB International, Inc. (UXB), and USA Environmental, Inc. (USA).

Site Evaluation – The evaluation process was documented by completion of a series of checklists for the Laguna Seca Parking MRA in accordance with the Group 3 Remedial Investigation/Feasibility Study Work Plan (ESCA RP Team 2009). Checklists prepared for the MRA were provided as Appendix D of the Group 3 Remedial Investigation/Feasibility Study (Volume 1; ESCA RP Team 2012).

The vicinity of the Laguna Seca Parking MRA was identified as a training area on historical maps for the 1st Brigade and Division Artillery. The MRA consists of four MRSs that were identified to facilitate previous MEC investigations and removal actions: MRS-14A, MRS-29, MRS-30, and MRS-47 (Figure 3). The MRA encompasses approximately 276 acres and contains the following six parcels: L20.3.1, L20.3.2, L20.5.1, L20.5.2, L20.5.3, and L20.5.4 (Table 2 and Figure 3).

MEC removal actions completed by the Army's munitions response contractors were conducted using analog instruments across the MRSs within the MRA. The MEC removal actions were conducted to a depth of 4 feet bgs with two exceptions: the MEC removal action was conducted to a depth of 1 foot bgs along the western and eastern slopes of MRS-14A; and MEC removal actions were not completed in two whole and four partial grids in MRS-14A due to terrain-related inaccessibility. Based upon the results of the MEC removal action conducted immediately surrounding these grids, it is not anticipated that MEC

items posing a significant risk would remain in the six grids. Items found in the MRA may have the potential to penetrate deeper than the depth of detection of the analog instruments used during the MEC removal actions. The majority of MEC and MD encountered were consistent with the documented historical use of the MRA. Some items encountered along the western boundary of the MRA were likely the result of being adjacent to the historical impact area.

2.7.3. MOUT Site MRA

Scope of Removal Actions - The visual surface removal and field verification survey conducted in the MOUT Site MRA were designed to address MEC on the ground surface. Grid sampling investigations were conducted in a small percentage of the MRA to address MEC to depths of 4 feet bgs. During the grid sampling investigations, all anomalies (i.e., ferromagnetic material), even those deeper than 4 feet, were investigated with all detected MEC encountered removed within the MRA. These investigations and removal actions conducted within the MOUT Site MRA were focused on addressing explosive hazards.

At the MOUT Site MRA, the three primary munitions response contractors that performed munitions responses to MEC were HFA, UXB, and USA.

Site Evaluation – The evaluation process was documented by completion of a series of checklists for the MOUT Site MRA in accordance with the Group 3 Remedial Investigation/Feasibility Study Work Plan (ESCA RP Team 2009). Checklists prepared for the MRA were provided as Appendix D of the Group 3 Remedial Investigation/Feasibility Study (Volume 1; ESCA RP Team 2012).

The MOUT Site MRA includes two areas: the MOUT training area, which encompasses approximately 51 acres and consists of a mock city training area that is currently used for tactical training of military, federal, and local law enforcement agencies, and emergency service providers by Monterey Peninsula College; and a portion of Barloy Canyon Road encompassing approximately seven acres located along the eastern boundary of the historical impact area (Table 2 and Figure 4). To facilitate previous MEC investigations and removal actions, the MOUT training area was designated as MRS-28, which corresponds to Parcel F1.7.2 (Figure 4). The Barloy Canyon Road portion of the MRA was designated as Parcel L20.8 and borders a former military training area to the east (MRS-14D) in the southern portion of the parcel and the historical impact area to the west. The northern portion of Parcel L20.8 passes through a former training site designated as MRS-27O.

A grid sampling investigation and a SS/GS sampling investigation were conducted over a portion of MRS-28. During sampling, geophysical anomalies were intrusively investigated to a depth of up to 4 feet bgs. The recommendation included in the After-Action Report for the SS/GS and grid sampling investigations was for further site characterization in the northern central and southern portions of MRS-28 to ascertain the extent of MEC removal operations necessary to support current and future reuse of the property (USA 2001d). Following an accidental fire in the area, a visual surface time-critical removal action (TCRA) was conducted over the majority of the MOUT Site MRA with the exception of a small area in the southwestern portion of MRS-28 and the southern portion of Barloy Canyon Road along the eastern side of the roadway. A site verification survey was performed in the southwestern portion of MRS-28 where the TCRA was not conducted (ESCA RP Team 2012). A grid sampling investigation and 4-foot (ft) removal action were conducted in MRS-14D, adjacent and to the east of the southern portion of Barloy Canyon Road (USA 2001a). One sampling grid was located in the roadway Parcel L20.8 within the boundaries of the MOUT Site MRA. The majority of MEC and MD encountered during the MEC investigations and removal actions were consistent with the documented historical use of the MRA. Some

items encountered in the MRA were likely the result of the area being located within and along the edge of the historical impact area.

2.8. Group 3 MRAs Munitions Response Site Summaries

This section summarizes the MEC investigations and removal actions conducted for the MRSs identified in the Group 3 Remedial Investigation/Feasibility Study (Volume 1; ESCA RP Team 2012). MEC encountered during these actions were destroyed by detonation and recovered MD was disposed of or recycled after being inspected and determined not to pose an explosive hazard. Table 1 summarizes key information about the MRSs included in each Group 3 MRA.

2.8.1. DRO/Monterey MRA

The DRO/Monterey MRA includes a portion of MRS-43 where MEC investigations and removal actions have been conducted as presented below. The MEC and MD encountered within the DRO/Monterey MRA were consistent with the historical use of the area for weapons and troop training. The results of the remedial investigation indicated that the MEC investigations and removal actions conducted within MRS-43 successfully detected, excavated, and recovered MEC to address the explosive hazard (ESCA RP Team 2012).

MRS-43

A SS/GS investigation was conducted in part of MRS-43 by USA in 1998 using Schonstedt magnetometers (USA 2001e). Five 100-ft by 200-ft grids and one partial grid were located in Parcel E29.1 of the DRO/Monterey MRA and one partial grid was located in Parcel L6.2 of the DRO/Monterey MRA. The results of the SS/GS sampling investigation indicated that while MD (referred to as ordnance scrap in the final report) related to 37mm projectiles and smoke hand grenades was found in grids, no MEC (referred to as UXO items in the final report) was found within MRS-43. The SS/GS sampling investigation in MRS-43 was determined to be inconclusive by the U.S. Army Corps of Engineers (USACE); therefore, a grid sampling investigation was recommended for MRS-43.

From December 1999 to March 2000, USA conducted a grid sampling investigation using Schonstedt magnetometers to a depth of 4 feet bgs, with deeper excavation as approved by USACE, in MRS-43 (USA 2001b). Four whole 100-ft by 100-ft grids, one partial 100-ft by 100-ft grid, two whole 100-ft by 200-ft SS/GS grids, and one partial 100-ft by 200-ft SS/GS grid were located in the DRO/Monterey MRA portion of MRS-43 and all anomalies encountered were investigated. The results of the grid sampling investigation indicated that MEC and MD related to hand grenades (single burial pit with 23 MEC items) and 37mm projectiles were found in MRS-43 (USA 2001b). The MEC items were not found within the boundaries of the DRO/Monterey MRA. The MEC and MD finds resulted in the need to conduct a removal action in the MRS. The southernmost half of MRS-43 (eventually designated as MRS-43A) was not subject to the removal action since no MEC or MD was discovered during the grid sampling investigations.

A MEC removal action was conducted in MRS-43 (Army 2000 and USA 2001b). The removal action consisted of a total of 258 whole and partial 100-ft by 100-ft grids. The removal action included the entire MRS-43 area and all anomalies encountered using Schonstedt magnetometers were investigated to a depth of 4 feet bgs (USA 2001b). The removal action corresponded to the entire DRO/Monterey MRA except for a narrow strip of land approximately 50 feet wide along the northwestern edge of Parcel L6.2 and South Boundary Road Parcels L20.13.3.1 and L20.13.1.2. Two ignition cartridges (designated as

DMM) and a quarter pound of trinitrotoluene (TNT) demolition charge (designated as UXO) were found in the area corresponding to Parcel L6.2. No MEC was found in the remainder of MRS-43 including Parcel E29.1 of the DRO/Monterey MRA. A total of 109 MD items were found throughout most of MRS-43 including Parcels L6.2 and E29.1 of the DRO/Monterey MRA.

A digital geophysical investigation was conducted in MRS-43 and in adjacent MRSs by USA using the G858 magnetometer, the cart-mounted EM61, and the handheld EM61, depending on vegetation and terrain (USA 2001b). Five whole and nine partial 100-ft by 100-ft grids located in the DRO/Monterey MRA portion of MRS-43 were investigated with the portable G858 magnetometer. The portable cart-mounted EM61 was employed in the investigation of 154 100-ft by 100-ft grids and 10 sampling grids (USA 2001b) in MRS-43. A number of these grids were located within Parcel E29.1 and only a few grids were located within Parcel L6.2. Two whole and two partial 100-ft by 100-ft grids were investigated using a handheld EM61. All but one partial grid were within Parcel E29.1; the partial grid was in Parcel L6.2 (USA 2001b).

2.8.2. Laguna Seca Parking MRA

The Laguna Seca Parking MRA consists of MRS-14A, MRS-29, MRS-30, and MRS-47 where MEC investigations and removal actions have been conducted as presented below. The MEC and MD encountered within MRS-14A, MRS-29, MRS-30, and MRS-47 were consistent with the historical use of the area for weapons and troop training. The results of the remedial investigation indicated that the investigation and removal actions conducted in the Laguna Seca Parking MRA successfully detected, excavated, and recovered MEC to address the explosive hazard (ESCA RP Team 2012).

MRS-14A

The initial MEC response actions conducted in MRS-14A included a removal action to a depth of 3 feet bgs to support proposed Laguna Seca Raceway parking on 50 acres in June 1994 (HFA 1994) and a grid sampling investigation to a depth of 4 feet bgs on 86 100-ft by 100-ft grids (10 % of 193 acres) from July 1994 to May 1995, using Schonstedt magnetometers (UXB 1995a). The areas where the initial MEC response actions were conducted were also included in the MEC removal actions discussed in the following paragraphs.

A removal action to a depth of 4 feet bgs was performed at MRS-14D (identified as Site OE 14D in the corresponding after-action report), which included the northernmost tip of MRS-14A, by USA using Schonstedt magnetometers from September 1996 through January 1997. Eight full and two partial 100-ft by 100-ft grids included in the removal action were located within the current boundary of MRS-14A. One MEC item was discovered within the boundaries of MRS-14A and one MEC item was found outside MRS-14A, but inside the Laguna Seca Parking MRA. Both items were removed in accordance with the work plan (CMS 1995).

A removal action was conducted by USA at MRS-14A using Schonstedt magnetometers from June 1997 through April 1998. The removal action was conducted on 427 grids to a depth of 4 feet bgs and 384 grids to a depth of 1 foot bgs. Six grids (two complete grids and portions of four grids) were not accessible and a paved ditch along Lookout Ridge Road was not surveyed during the MEC removal action (USA 2001c). The removal action at MRS-14A encountered 137 MEC items including electric blasting caps, smoke grenades and assorted pyrotechnics, expended 37mm, 57mm, and 75mm projectiles, and training 81mm mortars. MEC items discovered were removed in accordance with the work plan.

MRS-29

A random sampling investigation was conducted on 69 100-ft by 100-ft grids in MRS-29 in 1995 using Schonstedt magnetometers (UXB 1995b). The investigation was converted to a removal action, which included the 69 sampling investigation grids, as discussed in the following paragraph.

A removal action to a depth of 4 feet bgs was performed by CMS on MRS-29 from June 1997 to July 1998 using Schonstedt magnetometers. A total of 125 100-ft by 100-ft grids and partial grids were completed by CMS. No MEC items were found during this removal action (USA 2000a).

MRS-30

A removal action was conducted to a depth of 4 feet bgs using Schonstedt magnetometers on the entire 5.9 acres of MRS-30, which consisted of 25 100-ft by 100-ft grids and 10 partial grids (UXB 1995c). Two MEC items were found: one 75mm high explosive projectile and one 81mm illumination mortar cartridge. Both items were detonated in place in accordance with the work plan (UXB 1995c).

MRS-47

The initial MEC response actions conducted in MRS-47 included a vegetation clearance in 1994 to facilitate access for a controlled burn (USACE 1997a and USA 2000b), sampling investigation of three grids by HFA in January 1994 using Schonstedt magnetometers (HFA 1994), a removal action to a depth of 3 feet bgs by UXB from July 1994 to July 1995 using Schonstedt magnetometers (UXB 1995d), and a sampling investigation from July to September 1996 by USA using Schonstedt magnetometers (USA 2000b). The areas where these initial MEC response actions were conducted were also included in the MEC removal action discussed in the following paragraph.

From February to June 1997, USA conducted a removal action to a depth of 4 feet bgs on the entire 79 acres of MRS-47 using Schonstedt magnetometers (USA 2000b). MEC found included 81mm mortars, 37mm projectiles, 3-inch Stokes mortars, 75mm projectiles, 60mm mortars, smoke-filled hand grenades, two unfired high explosive 40mm cartridges, a variety of pyrotechnic items, a 4.2-inch projectile, a 20mm projectile, a 57mm projectile, a 2.36-inch rocket, and various fuzes for grenades, mines, and projectiles.

2.8.3. MOUT Site MRA

The MOUT Site MRA consists of MRS-28 (the MOUT training area) and a portion of Barloy Canyon Road located along the eastern boundary of the historical impact area. The northern segment of the Barloy Canyon Road portion of the MOUT Site MRA passes through a former training site identified as MRS-27O. The southern portion of Barloy Canyon Road is bordered by MRS-14D to the east. Because the proximity of the roadway to these MRSs, the sampling and removal actions performed in MRS-27O and MRS-14D are included in the following discussions. The MEC and MD encountered within the MOUT Site MRA were consistent with the historical use of the area for weapons and troop training. The results of the remedial investigation indicated that the investigations and removal actions conducted in the MOUT Site MRA detected, excavated, and recovered MEC to address the explosive hazard (ESCA RP Team 2012).

MRS-28

From March to September 1998, USA conducted a grid sampling investigation in MRS-28 for the Army to determine the need for performing a MEC removal action (USA 2001d). The grid sampling was conducted in 16 100-ft by 100-ft grids in the northeastern and southern portions of the MRS. The sampling investigation included the entire grid area and the anomalies encountered using Schonstedt magnetometers were investigated to a depth of 4 feet bgs. The boundaries of MRS-28 were modified since this investigation; therefore, 13 of the 16 grids were located within the current boundaries of MRS-28. In the northeastern portion of MRS-28, five MEC items (two practice hand grenades, two smoke hand grenades, and one hand grenade fuze) were found. The majority of the MD items found were also related to practice hand grenades, smoke hand grenades, and hand grenade fuzes. In the southern portion of MRS-28, two MEC items (one civilian blast simulator and one practice hand grenade fuze) were found. The majority of the MD items found were related to 40mm cartridge cases, practice 3.5-inch rockets, practice 2.36-inch rockets, and practice hand grenade fuzes.

From March to September 1998, USA conducted a SS/GS sampling investigation in the central portion of MRS-28 to determine the need for performing a MEC removal action (USA 2001d). The SS/GS investigation was conducted in 14 100-ft by 200-ft grids. Grids were investigated using the Schonstedt magnetometer. In the central portion of MRS-28, MEC items (3.5-inch rocket, ground burst simulator, ignition cartridge, mine fuzes, and hand grenade fuzes) were found. Forty hand grenade fuzes were found in a single "pit" and the 16 mine fuzes were found in one location. The majority of the MD items found in these grids were related to practice hand grenades, smoke hand grenades, hand grenade fuzes, practice 3.5-inch rockets, practice 2.36-inch rockets, trip flares, and illumination signals.

From approximately November to December 2003, a visual surface TCRA and military munitions reconnaissance was conducted for the Army by Shaw Environmental, Inc. (Shaw) to remove MEC following an accidental fire in the area (Shaw 2005). MD (greater than 2 inches in size) was also removed. MRS-28 was included in the TCRA with the exception of a small area consisting of approximately 10 100-ft by 100-ft whole and partial grids along the northwestern border. MEC items found in MRS-28 included practice hand grenades, smoke hand grenades, hand grenade fuzes (practice and non-practice), one fragmentation hand grenade, 40mm projectiles (illumination parachute, smoke, and practice), antitank rifle grenades, a surface trip flare, and ground illumination flares.

In February 2012, an instrument-aided field verification survey using a Schonstedt magnetometer was conducted for FORA by the ESCA RP Team in 24 100-ft by 100-ft whole and partial grids in MRS-28 along the southwestern border of the MOUT training facility area including the area not previously investigated in the TCRA. One MEC item, a smoke hand grenade, was found during the survey.

MRS-270

From November to December 2003, a visual surface TCRA and military munitions reconnaissance was conducted for the Army by Shaw to remove MEC following an accidental fire in the area (Shaw 2005). MD (greater than 2 inches in size) was also removed. MEC items found included a flash artillery simulator next to the portion of Barloy Canyon Road that passes through the MRS.

MRS-14D

From August through November 1995, CMS (currently known as USA) performed a grid sampling investigation in MRS-14D, located to the east of the southern portion of Barloy Canyon Road, to a depth

of 4 feet bgs in 35 100-ft by 100-ft grids and partial grids using Schonstedt magnetometers (USA 2001a). The areas where the grid sampling investigation was conducted were also included in the MEC removal action discussed in the following paragraph.

A removal action to a depth of 4 feet bgs was performed at MRS-14D, located to the east of the southern portion of Barloy Canyon Road, by USA using Schonstedt magnetometers from September 1995 through January 1997. Partial 100-ft by 100-ft grids included in the removal action extended into the current boundary of the Barloy Canyon Road portion of the MOUT Site MRA. Two MEC items were recovered along the east side of Barloy Canyon Road within the MOUT Site MRA.

2.9. Current and Potential Future Land and Resource Uses

The future land uses for the Group 3 MRAs, summarized below, are based upon the Fort Ord Base Reuse Plan (FORA 1997). Future land use information is also included in the Installation-Wide Multispecies Habitat Management Plan for Former Fort Ord, California (HMP; USACE 1997b) and modifications to the HMP provided in *Assessment, East Garrison – Parker Flats Land Use Modifications, Fort Ord, California* (Zander 2002), and *Memorandum of Understanding Concerning the Proposed East Garrison/Parker Flats Land-Use Modification* (Army 2004).

2.9.1. DRO/Monterey MRA

The DRO/Monterey MRA is proposed for habitat management and business park/light industrial and office/research and development reuse in the Base Reuse Plan. The reasonably foreseeable reuses being considered for the DRO/Monterey MRA include:

- Habitat Management Reuse Area, Parcel L6.2 – the westernmost portion of the MRA is designated for habitat reserve as a development buffer (Table 2). The area is approximately seven acres and is predominantly maritime chaparral. The area is expected to be used for public recreation. Vegetated areas and hiking trails may require biological monitoring and maintenance, such as planting, weeding, and trail repair. Recreational hiking, bicycling, and horseback riding on dirt paths are also expected.
- Business Park/Light Industrial and Office/Research and Development Reuse Area, Parcel E29.1 – the easternmost portion of the MRA is designated for development (Table 2). The area totals approximately 23 acres and is predominantly maritime chaparral. Development encompassing commercial/retail activities is expected.
- South Boundary Road and Associated Right of Way Reuse Area, Parcels L20.13.3.1 and L20.13.1.2 – the northern boundary of the MRA is designated for development (Table 2). The area totals approximately 5.245 acres and is a paved roadway. Development encompassing infrastructure activities, such as roadway and utility construction, is expected. Roadway expansion and utility construction will constitute the major development along South Boundary Road.

2.9.2. Laguna Seca Parking MRA

The Laguna Seca Parking MRA is proposed for open space/recreation reuse in the Base Reuse Plan and development with reserve areas or development with restrictions in the HMP (Table 2). The reasonably foreseeable reuses being considered for the Laguna Seca Parking MRA include:

- Open Space/Recreation Reuse Area, Parcels L20.3.2, L20.5.1, L20.5.3, and L20.5.4 - the northernmost and southernmost portions of the MRA will continue to be used for overflow parking

during Laguna Seca Raceway events (Table 2) and includes parking, staging, and event-related roadway access along Barloy Canyon Road and South Boundary Road. The area totals approximately 177 acres and is predominantly grassland and maritime chaparral.

- Open Space/Recreation Reuse Area / Highway 68 Bypass Right of Way, Parcels L20.3.1 and L20.5.2 – the central portion of the MRA is designated for development with restrictions (Table 2). The area totals approximately 99 acres and is predominantly grassland and maritime chaparral. The area is currently used for overflow parking during Laguna Seca Raceway events (Table 2) and includes parking, staging, and event-related roadway access along Barloy Canyon Road and South Boundary Road. A roadway easement for a future bypass of Highway 68 is also a possible future use.

2.9.3. MOUT Site MRA

The MOUT Site MRA is proposed for school/university reuse in the Base Reuse Plan (Table 2). The reasonably foreseeable uses being considered for the MOUT Site MRA include:

- MOUT Training Area Reuse Area, Parcel F1.7.2 – the western portion of the MRA is designated as a training facility for tactical/law enforcement training and emergency service provider training by Monterey Peninsula College (Table 2). The parcel is approximately 51 acres. The MOUT trainees may participate in minor intrusive activities during training activities. It is anticipated that old buildings may be destroyed, new buildings may be constructed, or underground utilities may be installed in the area.
- Barloy Canyon Road Reuse Area, Parcel L20.8 – the roadway parcel will continue to be used as a roadway for recreation and for transportation during raceway events, and will require maintenance and possibly utilities (Table 2). The parcel is approximately seven acres. The Barloy Canyon portion of the MOUT Site MRA is likely to be improved and opened as a transportation corridor. To facilitate reuse, infrastructure improvements, such as utilities and roadways, may be required.

2.10. Summary of Site Risks

Munitions response actions have been completed at the Group 3 MRAs, significantly reducing the potential risks to human health and the environment from explosive hazards associated with MEC. Because detection technologies may not detect all MEC present and some areas contain barriers (e.g., pavement, buildings) that, while providing protection against MEC potentially present, preclude the use of detection technologies, a future land user (i.e., receptors) may encounter MEC. The risk was evaluated in a MEC Risk Assessment as part of the Group 3 Remedial Investigation/Feasibility Study (Volume 2; ESCA RP Team 2012).

The Fort Ord Ordnance and Explosives Risk Assessment Protocol (Malcolm Pirnie 2002) was developed to qualitatively estimate the risk to future land users of the property from potentially remaining MEC in terms of an "Overall MEC Risk Score" for each receptor expected to be present during area development and reuse.

The MEC Risk Assessment Protocol results are based on three key factors (MEC Hazard Type, Accessibility, and Exposure) that are assigned use-specific values and are weighted in importance. These factors were used to develop an Overall MEC Risk Score for each receptor at a given reuse area as follows:

Overall MEC Risk Score	A	B	C	D	E
	Lowest	Low	Medium	High	Highest

These qualitative Overall MEC Risk Scores guided the development and evaluation of alternatives in the Group 3 Feasibility Study. The future land users of the property identified for analysis in the MEC Risk Assessment and a summary of the Overall MEC Risk Scores for each receptor for the reuse areas within the Group 3 MRAs are provided below. It is recognized that although the detected anomalies have been investigated and all detected MEC have been removed during the previous removal actions conducted on the Group 3 MRAs, the potential exists that MEC may remain in the subsurface at the MRA. Therefore, the risks associated with subsurface (intrusive) receptors (e.g., maintenance workers and construction workers) are assumed to remain at the Group 3 MRAs at a level that requires mitigation and remedial alternatives were evaluated in a Feasibility Study.

The qualitative Overall MEC Risk Scores were used in the Group 3 Feasibility Study (Volume 3; ESCA RP Team 2012) to guide the development and evaluation of response alternatives for the Group 3 MRAs during development and for reasonably anticipated future uses.

The response actions selected in this ROD are necessary to protect the public health or welfare from the possible presence of subsurface MEC.

DRO / Monterey MRA

The receptors identified for analysis in the MEC Risk Assessment for the DRO/Monterey MRA included: office worker, habitat worker, recreational user, maintenance worker, construction worker, and trespasser. The overall MEC risk score for each receptor was “A” (lowest risk).

Laguna Seca Parking MRA

The receptors identified for analysis in the MEC Risk Assessment for the Laguna Seca Parking MRA included: recreational user, maintenance worker, construction worker, and trespasser. The overall MEC risk scores for surface receptors (e.g., recreational users and trespassers) were “A” (lowest risk) and “B” (low risk) depending on their location in the MRA. The overall MEC risk scores for subsurface (intrusive) receptors (i.e., maintenance workers and construction workers) were “B” (low risk) to “E” (highest risk) depending on their location in the MRA.

MOU Site MRA

The receptors identified for analysis in the MEC Risk Assessment for the MOU Site MRA included: trainee, recreational user, maintenance worker, construction worker, and trespasser. The overall MEC risk scores for surface receptors (e.g., trainees, recreational users, and/or trespasser) were “B” (low risk) and “C” (medium risk) for the MOU training area and “B” (low risk) for the Barloy Canyon roadway portion of the MRA. The overall MEC risk scores for subsurface (intrusive) receptors (e.g., maintenance workers and construction workers) were “B” (low risk) to “D” (high risk) for the MOU training area and “D” (high risk) for the Barloy Canyon roadway portion.

2.11. Remedial Action Objectives

The remedial action objective (RAO) for the Group 3 MRAs is based on the MEC Risk Assessment results and on EPA's Remedial Investigation/Feasibility Study Guidance (EPA 1988) to achieve the EPA's threshold criteria of "Overall Protection of Human Health and the Environment" and "Compliance with ARARs." The RAO developed for the protection of human health and the environment for the Group 3 MRAs is to prevent or reduce the potential for the Group 3 MRA reuse receptors to come in direct contact with MEC items potentially remaining in subsurface soil.

As described in EPA's Land Use in the CERCLA Remedy Selection Process (EPA 1995), "Remedial action objectives provide the foundation upon which remedial cleanup alternatives are developed. In general, remedial action objectives should be developed in order to develop alternatives that would achieve cleanup levels associated with the reasonably anticipated future land use over as much of the site as possible. EPA's remedy selection expectations described in section 300.430 (a) (1) (iii) of the NCP should also be considered when developing remedial action objectives. Where practicable, EPA expects to treat principal threats, to use engineering controls such as containment for low-level threats, to use institutional controls to supplement engineering controls...."

For the purpose of this ROD, the contaminant of concern within the Group 3 MRAs is MEC. The potential for soil contamination from munitions constituents at the former Fort Ord is being addressed under the Army's Basewide Range Assessment (BRA) Program (Shaw/MACTEC 2009). Based on the BRA Program, no further action has been recommended for HAs within the DRO/Monterey, Laguna Seca Parking, and MOUT Site MRAs (Shaw/MACTEC 2009).

Consistent with EPA's guidance, (1) the principal threats at the Group 3 MRAs have already been treated (i.e., MEC removal actions have been completed), and (2) institutional controls (herein referred to as land use controls or LUCs) are considered appropriate remedial alternatives.

2.12. Description of Alternatives

Remedial alternatives were evaluated for each of the Group 3 MRAs in the Group 3 Feasibility Study (Volume 3; ESCA RP Team 2012). The alternatives were summarized in the Group 3 Proposed Plan (Army 2013).

Long-term management measures (deed notice and restrictions, annual monitoring, and five-year review reporting) are implementation and management measures for Alternatives 2, 3, and 4. Long-term management measures are described further in Section 2.14.3. The costs associated with implementing these measures over a period of 30 years are approximately \$210,000 for the DRO/Monterey MRA and \$199,000 each for the Laguna Seca Parking MRA and MOUT Site MRA.

The Group 3 Risk Assessment (Volume 2; ESCA RP Team 2012) found that intrusive receptors (those who may dig below the ground surface), such as the maintenance worker and construction worker, have a higher potential risk from MEC that may remain at the Group 3 MRAs. Although previous removal actions have been conducted on the MRAs, the potential exists for MEC to remain in the subsurface. Therefore, the risks associated with intrusive receptors (maintenance workers and construction workers) are assumed to remain at a level that requires mitigation. The four remedial alternatives developed to mitigate this risk are summarized below:

Alternative 1 – No Further Action

This alternative was developed for analysis in the DRO/Monterey, Laguna Seca Parking, and MOUT Site MRAs. This alternative assumes no further action would be taken to address potential MEC risks for those receptors identified in the Risk Assessment. This alternative is provided as a baseline for comparison to the other remedial alternatives, as required under CERCLA and the NCP. There are minimal costs associated with implementation of this alternative.

Alternative 2 – Land Use Controls

This alternative was developed for analysis in the DRO/Monterey, Laguna Seca Parking, and MOUT Site MRAs. This alternative assumes that LUCs, without additional MEC remediation on any portion of the MRAs, would be implemented to address potential MEC risks for intrusive or ground-disturbing reuse. The LUCs alternative consists of MEC recognition and safety training, construction support, and continuation of the existing residential use restriction. The components of the alternative are described below:

MEC Recognition and Safety Training - People involved in intrusive operations during the proposed reuses and development at the Group 3 MRAs would be required to attend the MEC recognition and safety training to increase their awareness of and ability to identify MEC items. Prior to planned intrusive activities, the property owner would be required to notify FORA or its successor to provide MEC recognition and safety training for all people performing intrusive activities.

Construction Support - Construction support, either on-call or onsite, would be arranged during the construction and maintenance planning stages of the project prior to the start of any intrusive or ground-disturbing activities. For on-call construction support, UXO-qualified personnel must be contacted prior to the start of intrusive or ground-disturbing activities to ensure their availability, advised about the project, and placed “on call” to assist if suspected MEC are encountered during construction and maintenance. During on-call support, UXO technicians have the option to be present at the site during intrusive activities if warranted. For onsite construction support, UXO-qualified personnel will attempt to identify and remove any explosive hazard in the construction footprint prior to any intrusive construction activities. If evidence of MEC is found during construction activities, the intrusive or ground-disturbing work would immediately cease, no attempt would be made to disturb, remove, or destroy the MEC, and the local law enforcement agency having jurisdiction on the property would be immediately notified so that appropriate explosive ordnance disposal personnel could be dispatched to address the MEC, as required under applicable laws and regulations.

Residential Use Restriction - Residential use restriction placed on the Group 3 property at the time of property transfer to FORA will be maintained. For the purpose of this decision document, residential use includes, but is not limited to: single family or multi-family residences; childcare facilities; nursing homes or assisted living facilities; and any type of educational purpose for children or young adults in grades kindergarten through 12 (Army 2007).

The LUCs included in this alternative are based on the planned reuse of the MRAs. The specific details of LUCs would be presented in the RD/RA Work Plan, or similar document. The costs associated with implementing this alternative are estimated to be \$757,000 for each of the Group 3 MRAs.

Alternative 3 – Additional Subsurface MEC Remediation

This alternative assumes that subsurface MEC remediation would be conducted throughout the entire footprints of the DRO/Monterey, Laguna Seca Parking, and MOUT Site MRAs. This alternative includes implementing the appropriate type of vegetation clearance in the MRA, if necessary, and the implementation of additional MEC remediation. For the portions of the Group 3 MRAs designated for development, vegetation removal would be accomplished using mechanical methods. For the portions of the Group 3 MRAs designated for habitat reserve, vegetation removal would be accomplished using prescribed burning techniques, to the extent feasible. Additional subsurface MEC remediation would involve identifying MEC through a visual search and operation of MEC detection equipment to locate subsurface items. Removal of subsurface MEC would be performed to the depth of detection using best available and appropriate detection technology and procedures and Department of Defense Explosives Safety Board (DDESB)-approved MEC detonation procedures in areas where explosive MEC items are identified during remedial activities and require disposal. Debris including MD that was found or detected during the process was also removed, to the extent feasible. The specific details of the vegetation clearance methods and the MEC detection equipment used would be presented in the RD/RA Work Plan, or similar document. The costs associated with implementing this alternative are estimated to be approximately \$1.0 million for the DRO/Monterey MRA, \$5.8 million for the Laguna Seca Parking MRA, and \$1.6 million for the MOUT Site MRA.

Alternative 4 – Additional Subsurface MEC Remediation in Selected Areas of the MRA and Land Use Controls

This alternative was developed for the DRO/Monterey and MOUT Site MRAs. Within the MRAs, this alternative would consist of implementation of the LUCs described in Alternative 2 plus performing subsurface MEC remediation within selected areas of the MRAs to address specific risks and/or reuse needs.

In the DRO/Monterey MRA, the area along South Boundary Road was identified for subsurface MEC remediation as part of this alternative. This selected area consisted of bar ditches that run along both sides of South Boundary Road and extended from the roadway pavement to the northern and southern boundary lines of the roadway right of way, totaling approximately five acres. Additional MEC remediation in this selected area would include brush cutting, surface MEC removal, fence removal, and subsurface MEC removal using best available and appropriate detection technology. The narrow strip of land approximately 50 feet wide and 900 feet long on the northwestern boundary of the DRO/Monterey MRA is not included as part of this alternative because MEC investigations and removal actions conducted in the vicinity resulted in the recovery of few MEC and MD items; therefore, there is a low probability of encountering MEC in this area. The cost associated with implementing this alternative is estimated to be approximately \$983,000 for the DRO/Monterey MRA.

In the MOUT Site MRA, the area along Barloy Canyon Road was identified for MEC remediation as part of this alternative. The selected area included the bar ditch along the west side of Barloy Canyon Road and extended from the western edge of the roadway pavement to the western boundary line of the roadway right of way along the entire length of the road within the MRA, totaling approximately 2.3 acres. Additional MEC remediation in this selected area would include brush cutting, fence removal, subsurface MEC removal using best available and appropriate detection technology, and fence replacement. The approximately 600 feet of the southern portion of Barloy Canyon Road along the east side of the roadway is not part of this alternative because MEC investigations and removal actions conducted in the vicinity resulted in the recovery of few MEC and MD items; therefore, there is a low

probability of encountering MEC in this area. The cost associated with implementing this alternative is estimated to be approximately \$1.1 million for the MOUT Site MRA.

Under this alternative, people conducting surface-only activities would be provided MEC recognition and safety training. Intrusive or ground-disturbing activities would be conducted with construction support by UXO-qualified personnel, and MEC recognition and safety training would be provided for people conducting intrusive or ground-disturbing activities.

2.13. Principal Threat Wastes

Munitions responses have been completed at the Group 3 MRAs. All MEC items which would meet the principal threat waste criteria identified as part of the investigation have already been addressed. The selected remedy includes LUCs because detection technologies may not detect all MEC present; certain areas contain barriers (e.g., pavement, buildings) that while providing protection against any MEC potentially present, preclude the use of detection technologies; therefore, subsurface investigations were not completed in small portions of the Group 3 MRAs. The source material constituting the principal threats at the Group 3 MRAs are MEC that potentially remain below the ground surface (in the subsurface).

The selected remedy will address the residual threats through implementing the following LUCs:

- MEC recognition and safety training for people that will conduct ground-disturbing or intrusive activities;
- Construction support for ground-disturbing or intrusive activities to address the possibility that MEC remains in the subsurface; and
- Restrictions prohibiting residential use.

2.14. Selected Remedy

2.14.1. Summary of the Rationale for the Selected Remedy

Each alternative developed for the Group 3 MRAs was assessed against the nine EPA evaluation criteria described in Tables 3, 4, and 5. Using the results of this assessment, the alternatives were compared and a remedy selected for each of the Group 3 MRAs. The remedy that best meets the nine EPA evaluation criteria is Alternative 2 (Land Use Controls). This remedy was selected because LUCs will be protective of human health for future land users, and would be effective in the short- and long-term at mitigating the risk to people conducting ground-disturbing or intrusive activities from MEC that is potentially present. This remedy will require a low level of effort to implement, a moderate level of effort to administer over time, and would be cost effective. The remedy can be implemented in a manner consistent with Federal and State guidance.

The Army and EPA have jointly selected the remedy. The DTSC has had an opportunity to review and comment on the ROD.

Community acceptance is discussed in the Responsiveness Summary (Section 3.0). The selected remedy is further described below.

2.14.2. Description of the Selected Remedy

The selected remedial alternative for each of the Group 3 MRAs is:

- DRO/Monterey MRA: Alternative 2 (Land Use Controls)
- Laguna Seca Parking MRA: Alternative 2 (Land Use Controls)
- MOUT Site MRA: Alternative 2 (Land Use Controls)

The LUCs and their implementation strategy are described below.

Land Use Controls

The LUCs that will be implemented at the Group 3 MRAs include requirements for: (1) MEC recognition and safety training for people that will conduct ground-disturbing or intrusive activities, (2) construction support for ground-disturbing or intrusive activities to address MEC that potentially remains in the subsurface, and (3) restrictions prohibiting residential use.

- **MEC recognition and safety training** - For the areas addressed in this ROD, ground-disturbing or intrusive activities are expected to occur. People involved in ground-disturbing or intrusive operations at these areas will be required to attend the MEC recognition and safety training to increase their awareness of and ability to identify MEC items. Prior to conducting ground-disturbing or intrusive activities, the property owner will be required to notify FORA or its successor to provide MEC recognition and safety training for all people performing ground-disturbing or intrusive activities.

MEC recognition and safety training will be evaluated as part of the five-year review process to determine if the training program should continue. If further evaluation indicates that this LUC is no longer necessary, the program may be discontinued with regulatory approval.

- **Construction support** - Construction support by UXO-qualified personnel is required during any intrusive or ground-disturbing construction activities at the Group 3 MRAs to address potential MEC risks to construction and maintenance personnel. Construction support will be arranged during the construction and maintenance planning stages of the project prior to the start of any intrusive or ground-disturbing activities. If evidence of MEC is found during construction support activities, the intrusive or ground-disturbing work will immediately cease, no attempt will be made to disturb, remove, or destroy the MEC, and the local law enforcement agency having jurisdiction on the property will be immediately notified so that appropriate explosive ordnance disposal personnel can be dispatched to address the MEC, as required under applicable laws and regulations. Construction support may be applicable in the short term during development of the reuse area, and/or in the long term during established reuse.

Construction support will be evaluated as part of the five-year review process to determine if the LUC should continue. If the MEC-related data collected during the development of the reuse areas indicate that this LUC is no longer necessary, construction support may be discontinued with regulatory approval.

- **Restrictions prohibiting residential use** - Residential use restriction placed on the Group 3 property at the time the property was transferred will be maintained. For the purposes of this document, residential reuse includes, but is not limited to: single family or multi-family residences; childcare facilities; nursing homes or assisted living facilities; and any type of educational purpose for children or young adults in grades kindergarten through 12 (Army 2007).

2.14.3. Land Use Control Implementation Strategy

The performance objectives for the LUCs that are part of the remedy are the following:

- **MEC recognition and safety training:** (1) to ensure that land users involved in ground-disturbing or intrusive activities are educated about the possibility of encountering MEC, and (2) to ensure that land users involved in ground-disturbing or intrusive activities stop the activity when encountering MEC and report to the appropriate authority.
- **Construction support:** to ensure projects involving ground-disturbing or intrusive activities are coordinated with UXO-qualified personnel so discoveries of potential MEC items will be handled appropriately. Mechanisms for implementing the requirement for construction support may include local ordinance(s), and details of implementation will be described in the RD/RA Work Plan for the LUCs.
- **Restrictions prohibiting residential use:** to ensure that any proposals to allow residential development or modifications to residential restrictions are approved by EPA and Army in coordination with DTSC.

LUCs will be maintained until EPA and DTSC concur that the land use may be conducted in a manner protective of human health and the environment without the LUCs. This concurrence may be based on: 1) new information (e.g., limited geophysical mapping, site development); or 2) where the depth of soil disturbance related to ground-disturbing or intrusive activities is sufficient to address the uncertainty of MEC remaining in the subsurface and any MEC encountered during such activities is removed.

The LUCs and the implementation actions will be explained in more detail in the RD/RA Work Plan. In accordance with the ESCA, the AOC, and the FFA Amendment No.1, FORA will prepare a LUC Remedial Design which shall contain implementation, monitoring and maintenance actions, including periodic reports. Within 21 days of the signature of the ROD, FORA shall provide EPA and DTSC for review and approval a schedule for implementation of a LUC remedial design.

As part of the implementation plan, the RD/RA Work Plan will also describe the following long-term management measures:

- **Existing land use restrictions:** The deeds to FORA for the Group 3 MRA parcels restrict residential use. Residential use includes, but is not limited to: single family or multi-family residences; childcare facilities; nursing homes or assisted living facilities; and any type of educational purpose for children or young adults in grades kindergarten through 12. It should be noted that the CRUPs for the Group 3 MRA parcels restrict residential use.
- **Annual monitoring and reporting:** After this ROD is signed, FORA, or its successor entity under the ESCA and the AOC, will perform annual monitoring and reporting. FORA or its successor entity will notify the regulatory agencies, as soon as practicable, of any MEC-related data identified during use of the property, and report the results of monitoring activities annually.
- **Five-year review reporting:** Five-year reviews will be conducted by the Army in accordance with CERCLA Section 121(c) and the Fort Ord FFA. The five-year review will evaluate the protectiveness of the selected remedy. Based on the evaluation, the selected LUCs may be modified or discontinued, with the approval of the EPA and DTSC.

The standard procedure for reporting any encounter with a known or suspected MEC item in the transferred former Fort Ord property is to immediately report the encounter to the local law enforcement

agency having jurisdiction on the property so that appropriate explosive ordnance disposal personnel can be dispatched to address the MEC, as required under applicable laws and regulations. After the response, the probability of encountering MEC will be reassessed. If the probability of encountering MEC is low, construction may resume with construction support. If the probability of encountering MEC is moderate to high, UXO-qualified personnel will attempt to identify and remove any explosive hazard in the construction footprint prior to any intrusive construction activities.

FORA or its successor will notify the regulatory agencies, as soon as practicable, of any MEC-related data identified during use of the property, and report the results of monitoring activities annually. The Army will conduct five-year reviews. If additional evaluation or work or modification of the selected remedy is proposed based on such review, it will be implemented in accordance with Paragraph 34 of the AOC, and/or Section C.4.1.7 of the ESCA.

Pursuant to the ESCA, the AOC and the FFA Amendment No.1, FORA assumes full responsibility for completion of necessary CERCLA response actions (except Army Obligations) which include implementing, maintaining, reporting, and enforcing the land use controls. Although the Army has already transferred the responsibilities to implement, maintain, monitor, and enforce LUCs to another party by contract, property transfer agreement, or through other means, the Army retains the ultimate responsibility for remedy integrity. Future property owners will also have responsibilities to act in accordance with the LUCs as specified in the deed(s).

2.14.4. Summary of the Estimated Remedy Costs

For those alternatives whose life-cycle is indeterminate or exceeds 30 years, for the purposes of evaluating and comparing alternatives as specified in EPA's Remedial Investigation/Feasibility Study Guidance (EPA 1988), a period of 30 years is used for estimating long term O&M costs. For the Group 3 MRAs, the life-cycle is indeterminate; therefore, long term O&M costs were estimated over a period of 30 years. Capital and long term O&M costs for implementing and maintaining LUCs under Alternative 2 are estimated at a total of approximately \$2.3 million for the reuse areas within the Group 3 MRAs. Capital and long term O&M costs for implementing and maintaining Long Term Management Measures are estimated at approximately \$608,000 for the reuse areas within the Group 3 MRAs. Therefore, the total estimated 30-year Net Present Value cost of the remedy is approximately \$2.9 million. Long term O&M costs are based on a 2.7 percent real interest rate for Years 1-7 (assumed duration for development and construction), and a 2.7 percent real interest rate for Years 8-30 (established reuse). A detailed, activity-based breakdown of the estimated costs associated with implementing and maintaining the remedy is provided in the Group 3 Feasibility Study (Volume 3; ESCA RP Team 2012).

2.14.5. Expected Outcomes of Selected Remedy

The expected outcomes of the selected remedy would be protection of human health and the environment through implementation of LUCs.

If residential development is planned for any part of the Group 3 MRAs included in this ROD, the plans will be subjected to regulatory agency and Army review and approval.

2.15. Statutory Determinations

The selected remedy satisfies the requirements of Section 121 of CERCLA as follows:

- Protection of Human Health and the Environment: The selected remedy provides protection for both human health and the environment through implementation of LUCs to mitigate the risk from potentially remaining MEC.
- Compliance with Applicable or Relevant and Appropriate Requirements: The selected remedy can be implemented in a manner consistent with Federal and State guidance. While the Army does not consider California laws and regulations concerning CRUPs to be potential ARARs, the Army entered into CRUPs with the DTSC at the time the property was transferred to FORA. The DTSC will modify the existing CRUP, as appropriate, to reflect the land use restrictions included in the selected remedy. Although the DTSC and the EPA Region IX disagree with the Army's determination that California laws and regulations concerning CRUPs are not potential ARARs, they will agree-to-disagree on this issue since the Army executed the CRUPs and the DTSC will modify the CRUPs, if appropriate, to be consistent with the identified remedy.
- Cost Effectiveness: The selected remedy is a cost-effective solution for reducing the risks to human health and the environment. The Net Present Value of the total estimated costs for the reuse areas within the Group 3 MRAs (including Long Term Management Measures costs of \$608,000) is approximately \$608,000 for the No Action alternative (Alternative 1), and approximately \$2.9 million (including Long Term Management Measures costs of \$608,000) for the selected remedy of Land Use Controls (Alternative 2), which is well below the estimate for Additional MEC Remediation (Alternative 3) of approximately \$9.0 million (including Long Term Management Measures costs of \$608,000). In addition, costs for Alternative 3 may be higher than estimated because: (1) after additional MEC remediation is completed, these areas would require a re-evaluation of potential risk from MEC; and (2) the areas are likely to continue to require additional risk mitigation measures (e.g., LUCs) to protect human health during development and long-term reuse.
- Utilization of Permanent Solutions and Alternative Treatment (or Resource Recovery) Technologies to the Maximum Extent Practicable: The principal threats at the Group 3 MRAs have already been treated (i.e., MEC removal actions have been completed) utilizing permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable.
- Preference for Treatment as a Principal Element: The principal threats at the Group 3 MRAs have already been addressed (i.e., MEC removal actions have been completed), satisfying the statutory preference for treatment as a principal element (i.e., reducing the toxicity, mobility, or volume of hazardous substances, pollutants, or contaminants as a principal element through treatment).
- Five-Year Review Requirements: Because the selected remedy may result in MEC potentially remaining within the Group 3 MRAs, a statutory review will be conducted by the Army within five years after initiation of the remedial action to ensure the remedy is, or will be, protective of human health and the environment. The purpose of a five-year review is to gather updated information, evaluate the condition of the site, and determine if the site remains safe from contamination that might be left at the site. The next five-year review will occur in 2017.

2.16. Documentation of Significant Changes from Preferred Alternative of Proposed Plan

As described in Section 2.4., the Proposed Plan for the Group 3 MRAs was released for public comment on January 11, 2013, and a public meeting was held on January 30, 2013. The Proposed Plan identified preferred remedial alternatives for the Group 3 MRAs. Comments collected over the 30-day public comment period between January 15, 2013, and February 13, 2013, did not necessitate any significant changes to the conclusions or procedures outlined in the Final Group 3 Remedial Investigation/Feasibility Study and Group 3 Proposed Plan.

3. RESPONSIVENESS SUMMARY

3.1. Proposed Plan Overview

Based on the Final Group 3 Remedial Investigation/Feasibility Study, dated July 31, 2012, the Army identified a preferred remedial alternative, which consists of the following requirements for future property users:

- MEC recognition and safety training (for people that will conduct ground-disturbing or intrusive activities, such as construction workers and outdoor maintenance workers)
- Construction support by UXO-qualified personnel (for ground-disturbing or intrusive activities)
- Restrictions prohibiting residential use

3.2. Background on Community Involvement

Focused community involvement for the Group 3 Proposed Plan involved a notice of availability of the Proposed Plan for review, a 30-day public review period, a public meeting, and a responsiveness summary to address comments received on the Group 3 Proposed Plan.

The Group 3 Proposed Plan notice of availability was published in the Monterey County Herald and the Salinas Californian newspapers on January 15, 2013. The 30-day public comment period began on January 15, 2013, and closed on February 13, 2013.

The public meeting was held on January 30, 2013, to present the Group 3 Proposed Plan to a broader community audience. At this meeting, representatives from the Army, EPA, and DTSC were present, and the public had the opportunity to submit written and oral comments about the Proposed Plan.

Representatives from FORA were also present at the public meeting to answer questions on the Group 3 Proposed Plan. Copies of the comments received on the Proposed Plan and a transcript of the public comments are available at the former Fort Ord Administrative Record and on the former Fort Ord website at www.fortordcleanup.com.

The responsiveness summary responds to written comments received during the Group 3 Proposed Plan public comment period as well as oral comments expressed during the Group 3 Proposed Plan public meeting. Public comments submitted during the Group 3 Proposed Plan public comment period and the Army's responses are provided in the following section.

3.3. Summary of Comments Received During the Public Comment Period and Department of the Army Responses

Public comments received during the Group 3 Proposed Plan public comment period and the Army's responses are summarized below.

Comments were received from the public: (1) at the public meeting held on January 30, 2013; and (2) in written comments received during the 30-day public comment period from January 15, 2013, to February 13, 2013.

Comment summaries are provided below and have been categorized based on the focus of each comment. The three categories are:

- A. Selected Remedy and Future Land Use
- B. Community Involvement and Outreach
- C. Other Comments

A. Selected Remedy and Future Land Use

A1: One commenter expressed the medium or high rating as the overall risk score for maintenance and construction workers in the MOUT Training Area within the MOUT Site MRA was difficult to judge, and expressed a preference for Alternative 3 or 4 being employed because both alternatives include subsurface MEC remediation. The commenter stated the likely potential of discovering residual munitions during future construction activities at the MOUT Training Area is a concern with regard to expense, possible disruption of future construction activities, and potential delays to realizing full utilization of the MOUT Training Area. The commenter also expressed concern for liability for residual munitions that may be encountered by trespassers at the MOUT Training Area.

Response: The Army is committed to the goal of selecting and implementing environmental cleanup actions that would support the reuse of the former Fort Ord as described in the Fort Ord Reuse Plan -- in this case, tactical/law enforcement and emergency service provider training facility at the MOUT Training Area. As described in the Group 3 RI/FS and Proposed Plan, previous MEC investigations in the MOUT Training Area included surface removal (2003), and subsurface investigation in portions of the area as part of sampling (1998) and ESCA field verification (2012). Reflecting the results of the previous site investigations, the risk assessment and the feasibility study were developed based on the assumption that MEC may potentially remain in the subsurface of the MOUT Training Area. The Group 3 RI/FS was developed by FORA under the ESCA. The facility has historically been used for MOUT training, practice hand grenade training, and pistol training, and contained a firing point and range fan for a rocket range. After base closure in 1994, the facility continued to be used for tactical training of military, federal and local law enforcement agencies. Military munitions (and civilian law enforcement equivalent) such as small arms and signals have been used in these training activities. The future operation of the MOUT Training Area under Monterey Peninsula College (MPC) is considered to be similar to the uses since base closure.

With regard to the cited concern about liability for any residual MEC that may be encountered by trespassers, whose potential risk was assessed as “B” and “C” (low and medium), as detailed in the Group 3 RI/FS, surface removal of MEC has been conducted in the entire footprint of the MOUT Training Area. Since the facility continues to be actively used and managed, the potential for MEC from previous Army activities to become present on the surface in the future is low. The Army has included a notice in the property transfer deed (which will be carried through subsequent property transfers in perpetuity) describing that, should any MEC item be discovered in the future, it should immediately be reported to local law enforcement agency. Appropriate ordnance disposal personnel will address the discovered MEC. This is a standard procedure that applies to any former Fort Ord property. The current deed also includes a requirement for the property owner to prevent unauthorized access to the MOUT Training Area, consistent with supporting the designated use as a training facility for tactical/law enforcement training and emergency service provider training area, as identified in the Base Reuse Plan.

With regard to the concern that the expense, possible disruption of construction, and potential delays for the public safety instruction program to address potential risk associated with construction activities, MEC recognition and safety training for future land users conducting ground disturbing or intrusive activities and construction support for ground disturbing or intrusive activities are appropriate means to address residual risks concerning ground-intrusive activities at the MOUT Training Area. These measures

are included in Alternative 2 so that appropriate safety measures are incorporated into planned construction projects. While the requirements for such measures could result in additional cost or schedule impacts to future landowners as compared to a project located outside of a former military installation, they are appropriate mitigation measures that should be taken when conducting ground-disturbing activities in areas with potential presence of MEC. Section 5.3 of the feasibility study describes that, because even current MEC-detection technologies do not have a 100% detection efficiency, Alternative 3 (subsurface MEC removal) is not expected to provide a significant increase in protection of human health, and therefore additional mitigation measures such as land use controls may still be necessary. Section 4.4 of the feasibility study describes Alternative 4 to include additional subsurface MEC remediation in selected areas; however, the selected areas only include areas along Barloy Canyon Road in Parcel L20.8, where MEC removal has not been conducted previously. Land use controls would be required in the MOUT Training Area under Alternative 4.

The Army acknowledges the concerns associated with potentially remaining MEC at the MOUT Site MRA during reuse. Residual risks were carefully considered during the risk assessment process and a set of land use controls, specifically designed to address residual risks such as those identified by the comment, was selected as the remedy for the MOUT Site MRA.

The LUCs and the implementation actions will be explained in more detail in the Remedial Design/Remedial Action Work Plan. The Army has recommended to MPC, the future recipient and operator of the MOUT Training Area, to participate in the development of the Remedial Design/Remedial Action Work Plan to address concerns such as cost and scheduling associated with implementation of the selected remedy. Under the ESCA, the selected remedy for the Group 3 MRAs will be implemented by FORA; FORA has been coordinating current and future ESCA related activities with future landowners, including conducting a meeting with MPC in April 2013.

A2: Comments were made regarding the potential for MEC to remain at the Group 3 MRAs. It was questioned why a remedial alternative including MEC recognition and safety training is needed on property where cleanup of MEC has been conducted. It was asked whether the Army had given up on the cleanup of MEC and, as a result, is requiring users of Fort Ord land to be trained in UXO recognition. It was suggested that if the land is unsafe, no one should be allowed to enter the property.

Response: Investigations and removal actions have been conducted in the Group 3 MRAs, with all detected MEC removed. These munitions response actions also included quality control and quality assurance requirements that evaluated the adequacy of the munitions response actions. As part of the CERCLA process, the available background information and investigation data was reviewed in the Group 3 RI/FS to evaluate if the MRAs had been sufficiently characterized for MEC with respect to human health and the environment based on the intended future uses of the properties. Although MEC is not expected to be encountered within the Group 3 MRAs, it is possible that some MEC may not have been detected and remain present in the subsurface. Therefore, to manage the risk to future land users from MEC that potentially remains in the property, remedial action alternatives were evaluated. As described in the Proposed Plan, LUCs and MEC removals were evaluated as remedial alternatives using the nine CERCLA evaluation criteria. The LUC remedy meets the protectiveness criteria by providing for safety training and support for intrusive activities, and by restricting the property from residential use (i.e. sensitive uses). The selected Land Use Controls are appropriate to address risks from MEC that may potentially remain at the site during reuse.

A3: A comment was made stating that economic conditions should be considered when determining the future use of the Fort Ord property. In addition, it was stated that the parking areas at Wolf Hill support major Laguna Seca events and should not be disrupted because such events provide revenue to the community.

Response: The purpose of this ROD is to select a remedy for the Group 3 MRAs based on anticipated reuse for the underlying property; it does not determine the future reuse. The planned reuse is documented in the Fort Ord Base Reuse Plan. The Base Reuse Plan is focused on the recovery of the former Fort Ord community based on education, environmental conservation, and economic development. Disruption of the use of the Wolf Hill area for parking for Laguna Seca Raceway events is not anticipated during the implementation of the remedial action.

A4: A comment was made to state that Del Rey Oaks, Lookout Ridge and Wolf Hill areas of the Group 3 Proposed Plan are frequently utilized for outdoor recreation. Support was expressed for Alternative 2, Land Use Controls, as the proposed alternative for the Group 3 MRAs because it does not involve any additional vegetation clearance.

Response: The comment is acknowledged.

B. Community Involvement and Outreach

B1: General comments were made regarding involvement of the community and local jurisdictions during the cleanup process. It was commented that technical assistance is not currently being provided to community members to help interpret the technical components of the cleanup process. A commenter stated that there are students and low-income community members that are not informed about the cleanup process and associated activities. Additionally, concern was expressed that the goals of the cleanup program have not been aligned with the priorities of some members of the local communities.

Response: Working with the community throughout the cleanup process is an important priority to the Army. The Army strives to do this through, in part, making the cleanup information available to the public and inviting the public to participate in the decision-making process. An extensive public participation process is also being implemented by FORA as part of the ESCA Remediation Program at the former Fort Ord. The Group 3 MRAs are part of the ESCA Remediation Program.

Under CERCLA, the Army follows the public participation and community involvement process, and encourages members of the local community and other interested parties to review cleanup documents and make comments during the decision-making process. Public comments are considered before any action is selected. The Army, in conjunction with the regulatory agencies, takes all comments into consideration, responds to them, and incorporates changes as appropriate.

Public participation was solicited and encouraged throughout the development of the Group 3 RI/FS, and public comments and input were carefully considered, responded to, and incorporated into the final RI/FS. The Army held a Proposed Plan public meeting as part of its public participation responsibilities under Section 117(a) of CERCLA or Superfund and Section 300.430(f)(2) of the NCP. Notices of the public meeting were published in two local newspapers and on the Fort Ord Environmental Cleanup Website www.fortordcleanup.com. The Proposed Plan was made available in the Fort Ord Administrative Record and local information repositories, as well as posted on the Fort Ord Environmental Cleanup Website. In addition, over 750 copies of the Proposed Plan were mailed to the local community members, and over 2,500 e-mail notifications to interested parties were made, notifying them of the availability of the Proposed Plan, the public comment period, and the public meeting. Please see response to comment B2 below for additional information on the distribution of related documents.

Additional public input opportunities were also provided as follows:

- An Informal Community Workshop was held by FORA on March 29, 2012 which included the status of the Group 3 RI/FS.
- A Former Fort Ord Environmental Cleanup Open House/Bus Tour was held on June 23, 2012, at which an information table included information on the Group 3 MRAs. Portions of the Group 3 areas were also highlighted during the bus tour. The public was provided an opportunity to discuss various aspects of the cleanup program with technical staff of the Army, FORA ESCA Remediation Program representatives, and regulatory agency representatives.
- A former Fort Ord Community Involvement Mobile Workshop was held on August 8, 2012, at which Group 3 MRAs was a presentation topic.
- A former Fort Ord Technical Review Committee meeting was held on August 9, 2012 at which Group 3 MRAs was a presentation topic.

As described in the Proposed Plan, community acceptance, along with State acceptance, is one of the two modifying criteria amongst the nine CERCLA evaluation criteria. Community acceptance is gauged using available public input and reactions to the information presented within the Proposed Plan as summarized in this Responsiveness Summary. The Army acknowledges some members of the community may not accept the Proposed Plan; however, many members of the public accept it and recognize the need for the proposed remedy.

B2: It was commented that distribution of documents associated with the cleanup of the Group 3 MRAs was not sufficient to reach the community for their review.

Response: The Fort Ord Cleanup Program maintains an extensive community outreach program to keep the public informed about the cleanup activities at the former Fort Ord and provide opportunities for the public to participate during the decision-making process. The draft and draft final Group 3 Work Plan were made available for public review and comment, and the comments were considered and incorporated into the Final Group 3 Work Plan, which was issued on November 13, 2009. The draft and draft final Group 3 RI/FS were also provided for review and comment by the public, and the comments were considered and incorporated into the Final Group 3 RI/FS on July 31, 2012. The Proposed Plan for the Group 3 MRAs was made available to the public on January 11, 2013. The Army made these documents available to the public in the following manner:

- California State University Monterey Bay (CSUMB) Tanimura & Antle Family Memorial Library, Divarty Street, CSUMB Campus, Seaside, California
- Seaside Library, 550 Harcourt Avenue, Seaside, California
- Fort Ord Administrative Record, Building 4463, Gigling Road, Room 101, Ord Military Community, California
- www.fortordcleanup.com website
- Approximately 750 copies of the Proposed Plan were mailed out to the Army's mailing list on January 11, 2013
- Over 2,500 e-mail were sent notifying interested community members of the availability of the Group 3 Proposed Plan, the public comment period, and the public meeting

- Copies of the Proposed Plan were distributed at the January 30, 2013 Proposed Plan public meeting

Notices of the availability of the Proposed Plan and the date and location of the Proposed Plan Public Meeting were published in the Monterey County Herald and the Salinas Californian on January 15, 2013. Additionally, notices on the availability of the Proposed Plan were published on the:

- Army's website
- The Fort Ord Reuse Authority (FORA) website
- The FORA ESCA Remediation Program website
- The FORA ESCA Remediation Program Facebook page
- The FORA ESCA Remediation Program email list

B3: A comment was made that the amount of information provided to community members during the Proposed Plan public meeting on January 30, 2013 was very light. It was stated that the presentation lacked information on former Army tank training, residual chemical contamination, and depths of recovered MEC.

Response: The focus of the Group 3 Proposed Plan public meeting presentation was to provide information on the remedial alternatives evaluated for the Group 3 MRAs, describe the preferred alternatives, and to accept public comments on the Proposed Plan. Information regarding the historical uses of the MRAs, previous MEC investigations and removal actions, and general information about MEC recovered during those investigations, were included in the presentation and are presented in more detail in the Group 3 RI/FS (ESCA RP Team 2012).

Similar comments regarding tank training and residual chemical contamination have previously been received during the development of the Group 3 RI/FS, and relevant information was incorporated into the final version as appropriate. Please refer to the responses to comments provided in Appendix F of the Group 3 RI/FS (ESCA RP Team 2012). In addition, the Administrative Record is a source of information on the cleanup of the former Fort Ord. The Fort Ord Administrative Record can be accessed online at www.fortordcleanup.com.

B4: The question was asked as to how community acceptance of the proposed alternative could be acquired when inadequate historical facts and perspective of the Superfund site had been provided to the community. The commenter provided a copy of the comment letter from Fort Ord Community Advisory Group to FORA, dated March 28, 2009 (Administrative Record No. ESCA-0154), regarding the Draft Group 3 RI/FS Work Plan. It was stated that the attachment was provided to convey additional information to the community.

Response: As described in the Group 3 Proposed Plan, community acceptance, along with State acceptance, is one of the two modifying criteria amongst the nine CERCLA evaluation criteria. Community acceptance is gauged using available public input and responses to the information presented within the Proposed Plan during the public comment period. A summary of public comments received on the Proposed Plan and the Army's responses to the comments are provided in the Responsiveness Summary.

As part of the CERCLA process, the available background information and investigation data was reviewed in the Group 3 RI/FS to evaluate if the MRAs had been sufficiently characterized for MEC with respect to human health and the environment based on the intended future uses of the properties. The data were determined to be of known and sufficient quality to be usable in the RI/FS to support completion of the explosives safety risk assessment and the evaluation of remedial alternatives (ESCA RP Team 2012).

As described in response to comments B1 and B2, outreach efforts for the Group 3 RI/FS and Proposed Plan included newspaper and other notices, community presentations, and making relevant documents available for public review and comment.

The letter dated March 28, 2009, provided as part of a comment to the Proposed Plan, was previously received by FORA and was included in the Administrative Record (Administrative Record No. ESCA-0154). The comments provided in the letter were considered and responded to, as provided in Appendix H of the Final Group 3 RI/FS Work Plan (ESCA RP Team 2009). Relevant information was incorporated into the Group 3 RI/FS.

B5: A comment was made to express appreciation for the cooperation of the Army with the speaker and his user group throughout the cleanup process. It was stated that community meetings were informative and that Army staff had been approachable and interactions had been positive.

Response: The comment is acknowledged.

C. Other Comments

C1: A general comment was made expressing concern that community members have a need for healthcare in Monterey County for exposures to toxins.

Response: The environmental cleanup program at the former Fort Ord, being conducted under CERCLA or Superfund, addresses environmental contamination that resulted from the previous use of the site as a military base. Human and ecological exposures to the contaminants are studied, and if warranted, remedial alternatives are developed and evaluated. Regarding healthcare in Monterey County, the Army understands that the local healthcare community implements processes for continually evaluating and addressing the current healthcare needs of the community. The Army regularly provides environmental investigation and cleanup information to healthcare agencies such as Monterey County Health Department and Agency for Toxic Substances and Disease Registry.

C2: Concern was raised as to who would be financially responsible if someone is injured from exposure to MEC.

Response: The purpose of the ROD is to select the remedy for the Property, and financial liability from injury is beyond the scope of the ROD. The LUC remedy will be protective of human health by providing MEC recognition and safety training, construction support for intrusive activities, and restricting the property from residential use (i.e. sensitive uses). The selected LUCs are appropriate to address risks from MEC that may potentially remain at the site during reuse.

C3: A question was asked whether Wolf Hill is still leased for use as a parking area for the Laguna Seca Raceway, whether there is a Laguna Seca expansion plan, and whether MRS-270 and MRS-14D are proposed for development. A comment was made that a "1,000-foot wide Official Plan Line given to the State Department of Transportation" (a proposed boundary for a future Highway 68 bypass) was inadequately identified on handouts depicting the DRO/Monterey MRA provided during the Group 3 Proposed Plan public meeting.

Response: FORA is the current property owner for the area containing Wolf Hill (MRS-47); an Army lease agreement for use as a parking area for Laguna Seca Raceway would have expired with property transfer. As indicated in the Proposed Plan, MRS-47 is designated for open space/recreation and continued use for overflow parking along Barloy Canyon Road and South Boundary Road during Laguna Seca Raceway events. FORA has established a right-of-entry agreement process to support this continued use.

The Group 3 RI/FS and Proposed Plan only address the areas included within the Del Rey Oaks/Monterey MRA, Laguna Seca Parking MRA, and MOUT Site MRA. Areas located outside of the three subject MRAs are beyond the scope of the Group 3 RI/FS and Proposed Plan. As described in the Proposed Plan, a northern segment of the Barloy Canyon Road portion of the MOUT Site MRA passes through MRS-27O, and a southern section of Barloy Canyon Road is bordered by MRS-14D to the east. Except for the road right-of-way, property underlying these MRSs is designated as habitat reserve.

As described in the Group 3 RI/FS, Appendix F, the proposed boundary for the future Highway 68 bypass is located outside of the DRO/Monterey MRA and was not shown in the figures provided during the public meeting.

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TABLES

**Table 1. Summary of Munitions Response Site (MRS) Investigations
Record of Decision, Group 3 Munitions Response Areas,
Former Fort Ord, California**

MRS Site Number	Site Acreage ¹	Site Name	Past Use	Site Investigation Status ²
DRO/Monterey MRA				
MRS-43 ³	29	South Boundary Area	Artillery training (37mm projectiles)	MEC removal to 4 feet bgs and/or to depth of detection completed.
Laguna Seca Parking MRA				
MRS-14A	169	Lookout Ridge	Artillery training (projectiles), mortar training (projectiles), troop training, basic maneuvers	MEC removal to 1 foot bgs on western and eastern slopes and to 4 feet bgs in remainder of MRS completed, except in two whole 100- by 100-foot grids, four partial 100- by 100-foot grids, and beneath a paved ditch along Lookout Ridge Road.
MRS-29	21	Laguna Seca Bus Turn Around	Troop training, basic maneuvers	MEC removal to 4 feet bgs completed.
MRS-30	4	Laguna Seca Turn 11	Troop training, basic maneuvers	MEC removal to 4 feet bgs completed.
MRS-47	74	Wolf Hill	Artillery training (projectiles), mortar training (projectiles)	MEC removal to 4 feet bgs completed.
MOUT Site MRA				
MRS-270 ⁴	1	Training Site	Basic maneuvers	MEC removal at ground surface completed.
MRS-28	51	MOUT Training Area	Infantry training, hand grenade training, rocket launcher firing point, hand-to-hand combat, combat pistol training, assault course, squad tactics, night defense training	MEC removal at ground surface and to 4 feet bgs in 13 100- by 100-foot grids completed.

Acronyms

MRA = munitions response area
MRS = munitions response site
DRO = Del Rey Oaks
MOUT = Military Operations in Urban Terrain
MEC = munitions and explosives of concern
bgs = below ground surface
mm = millimeters

Footnotes:

1. Acreage stated is the portion of the MRS contained within the designated MRA.
2. All detected anomalies (i.e., ferromagnetic material) were investigated and all detected MEC were removed during MEC removal actions. This does not apply to the 1-foot removal portion of MRS-14A and the SiteStat/GridStat grids investigated in MRS-28.
3. DRO/Monterey MRA contains a portion of MRS-43.
4. MOUT Site MRA contains a portion of MRS-270.

**Table 2. Summary of Group 3 MRA Transfer Parcels
Record of Decision, Group 3 Munitions Response Areas,
Former Fort Ord, California**

Transfer Parcel No.	Approx. Acreage	Planned Reuse *
DRO/Monterey MRA		
E29.1	23	Business Park / Light Industrial and Office / Research & Development
L6.2	7	Habitat Management
L20.13.1.2	0.245	South Boundary Road and Associated Right of Way
L20.13.3.1	5	South Boundary Road and Associated Right of Way
Laguna Seca Parking MRA		
L20.3.1	44	Open Space / Recreation / Highway 68 Bypass Right of Way
L20.3.2	36	Open Space / Recreation
L20.5.1	131	Open Space / Recreation
L20.5.2	55	Open Space / Recreation / Highway 68 Bypass Right of Way
L20.5.3	10	Open Space / Recreation
L20.5.4	0.51	Open Space / Recreation
MOUT Site MRA		
F1.7.2	51	MOUT Training Area
L20.8	7	Barloy Canyon Road and Associated Right of Way

Acronyms

MRA = munitions response area

DRO = Del Rey Oaks

MOUT = Military Operations in Urban Terrain

Footnotes

* Planned use information obtained from the *FORA Fort Ord Reuse Plan* (FORA 1997).

**Table 3. Summary of Remedial Alternatives Evaluation and Comparison
for Del Rey Oaks/Monterey Munitions Response Area
Record of Decision, Group 3 Munitions Response Areas, Former Fort Ord, California**

Remedial Alternative	EPA'S 9 CERCLA EVALUATION CRITERIA								
	Threshold Criteria		Balancing Criteria					Modifying Criteria	
	Overall Protectiveness of Human Health and the Environment	Compliance with ARARs	Short-Term Effectiveness	Long-Term Effectiveness & Permanence	Reduction of Toxicity, Mobility, or Volume Through Treatment ¹	Implementability	Cost	State Acceptance	Community Acceptance
Alternative 1 - No Further Action	Not protective; does not mitigate potentially remaining MEC risks to surface receptors or intrusive workers	No ARARs identified for this alternative	Not effective in the short-term; no MEC risk mitigation	Not effective in the long-term; no MEC risk mitigation	No reduction in volume because no further MEC removals would be conducted	Not administratively feasible	Minimal	Not acceptable	Not acceptable
Alternative 2 - Land Use Controls	Protective to construction and maintenance workers (intrusive workers); prohibits use for residential reuse	Continued implementation of land use restrictions with no ARARs identified for this alternative	Effective in the short-term; implementation of LUCs to mitigate MEC risk to construction and maintenance workers (intrusive workers)	Required training and construction support would mitigate risks to construction and maintenance workers (intrusive workers) until evaluation determines LUCs no longer necessary	No reduction in volume because no further MEC removals would be conducted	Administratively feasible; moderate technical effort required to implement	\$757,000	Accepted as the preferred alternative	Acceptable to some community members
Alternative 3 - Additional MEC Remediation	Protective of human health and the environment	Implementation would require compliance with ARARs	May be effective in the short-term; MEC removals would be conducted	May or may not be effective in the long-term; additional risk mitigation may be needed after additional MEC remediation	May result in MEC reduction if additional MEC is discovered and removed during remediation	Administratively feasible; high level of technical effort required to implement	\$1,045,000	Not selected	Acceptable to some community members
Alternative 4 - Additional Subsurface MEC Remediation in Selected Areas of the MRA and Land Use Controls	Protective to construction and maintenance workers (intrusive workers); protective of human health and the environment	Implementation would require compliance with ARARs	Effective in the short-term; required training and construction support would mitigate risks to construction and maintenance workers (intrusive workers)	Effective in the long-term; required training and construction support would mitigate risks to construction and maintenance workers (intrusive workers); may reduce MEC risks	May result in MEC reduction if additional MEC is discovered and removed during remediation	Technically and administratively feasible to implement	\$983,000	Not selected	Acceptable to some community members

Acronyms

ARARs = applicable or relevant and appropriate requirements
 CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act
 EPA = U.S. Environmental Protection Agency
 LUCs = Land Use Controls
 MEC = munitions and explosives of concern
 MRA = munitions response area

Footnotes

¹ = Completed MEC removal actions already provide for reduction of volume.

**Table 4. Summary of Remedial Alternatives Evaluation and Comparison
for Laguna Seca Parking Munitions Response Area
Record of Decision, Group 3 Munitions Response Areas, Former Fort Ord, California**

Remedial Alternative	EPA'S 9 CERCLA EVALUATION CRITERIA								
	Threshold Criteria		Balancing Criteria					Modifying Criteria	
	Overall Protectiveness of Human Health and the Environment	Compliance with ARARs	Short-Term Effectiveness	Long-Term Effectiveness & Permanence	Reduction of Toxicity, Mobility, or Volume Through Treatment ¹	Implementability	Cost	State Acceptance	Community Acceptance
Alternative 1 - No Further Action	Not protective; does not mitigate potentially remaining MEC risks to surface receptors or intrusive workers	No ARARs identified for this alternative	Not effective in the short-term; no MEC risk mitigation	Not effective in the long-term; no MEC risk mitigation	No reduction in volume because no further MEC removals would be conducted	Not administratively feasible	Minimal	Not acceptable	Not acceptable
Alternative 2 - Land Use Controls	Protective to construction and maintenance workers (intrusive workers); prohibits use for residential use	Continued implementation of land use restrictions with no ARARs identified for this alternative	Effective in the short-term; implementation of LUCs to mitigate MEC risk to construction and maintenance workers (intrusive workers)	Required training and construction support would mitigate risks to construction and maintenance workers (intrusive workers) until evaluation determines LUCs no longer necessary	No reduction in volume because no further MEC removals would be conducted	Administratively feasible; moderate technical effort required to implement	\$757,000	Accepted as the preferred alternative	Acceptable to some community members
Alternative 3 - Additional MEC Remediation	Protective of human health and the environment	Implementation would require compliance with ARARs	May be effective in the short-term; MEC removals would be conducted	May or may not be effective in the long-term; additional risk mitigation may be needed after additional MEC remediation	May result in MEC reduction if additional MEC is discovered and removed during remediation	Administratively feasible; high level of technical effort required to implement	\$5,767,000	Not selected	Acceptable to some community members

Acronyms

ARARs = applicable or relevant and appropriate requirements
 CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act
 EPA = U.S. Environmental Protection Agency
 LUCs = Land Use Controls
 MEC = munitions and explosives of concern
 MRA = munitions response area

Footnotes

¹ = Completed MEC removal actions already provide for reduction of volume.

**Table 5. Summary of Remedial Alternatives Evaluation and Comparison
for Military Operations in Urban Terrain Site Munitions Response Area
Record of Decision, Group 3 Munitions Response Areas, Former Fort Ord, California**

Remedial Alternative	EPA'S 9 CERCLA EVALUATION CRITERIA								
	Threshold Criteria		Balancing Criteria					Modifying Criteria	
	Overall Protectiveness of Human Health and the Environment	Compliance with ARARs	Short-Term Effectiveness	Long-Term Effectiveness & Permanence	Reduction of Toxicity, Mobility, or Volume Through Treatment ¹	Implementability	Cost	State Acceptance	Community Acceptance
Alternative 1 - No Further Action	Not protective; does not mitigate potentially remaining MEC risks to surface receptors or intrusive workers	No ARARs identified for this alternative	Not effective in the short-term; no MEC risk mitigation	Not effective in the long-term; no MEC risk mitigation	No reduction in volume because no further MEC removals would be conducted	Not administratively feasible	Minimal	Not acceptable	Not acceptable
Alternative 2 - Land Use Controls	Protective to construction and maintenance workers (intrusive workers); prohibits use for residential reuse	Continued implementation of land use restrictions with no ARARs identified for this alternative	Effective in the short-term; implementation of LUCs to mitigate MEC risk to construction and maintenance workers (intrusive workers)	Required training and construction support would mitigate risks to construction and maintenance workers (intrusive workers) until evaluation determines LUCs no longer necessary	No reduction in volume because no further MEC removals would be conducted	Administratively feasible; moderate technical effort required to implement	\$757,000	Accepted as the preferred alternative	Acceptable to some community members
Alternative 3 - Additional MEC Remediation	Protective of human health and the environment	Implementation would require compliance with ARARs	May be effective in the short-term; MEC removals would be conducted	May or may not be effective in the long-term; additional risk mitigation may be needed after additional MEC remediation; may interfere with continued use of area for training	May result in MEC reduction if additional MEC is discovered and removed during remediation	Administratively feasible; high level of technical effort required to implement	\$1,621,000	Not selected	Acceptable to some community members
Alternative 4 - Additional Subsurface MEC Remediation in Selected Areas of the MRA and Land Use Controls	Protective to construction and maintenance workers (intrusive workers); protective of human health and the environment	Implementation would require compliance with ARARs	Effective in the short-term; required training and construction support would mitigate risks to construction and maintenance workers (intrusive workers)	Effective in the long-term; required training and construction support would mitigate risks to construction and maintenance workers (intrusive workers); may reduce MEC risks	May result in MEC reduction if additional MEC is discovered and removed during remediation	Technically and administratively feasible to implement	\$1,148,000	Not selected	Acceptable to some community members

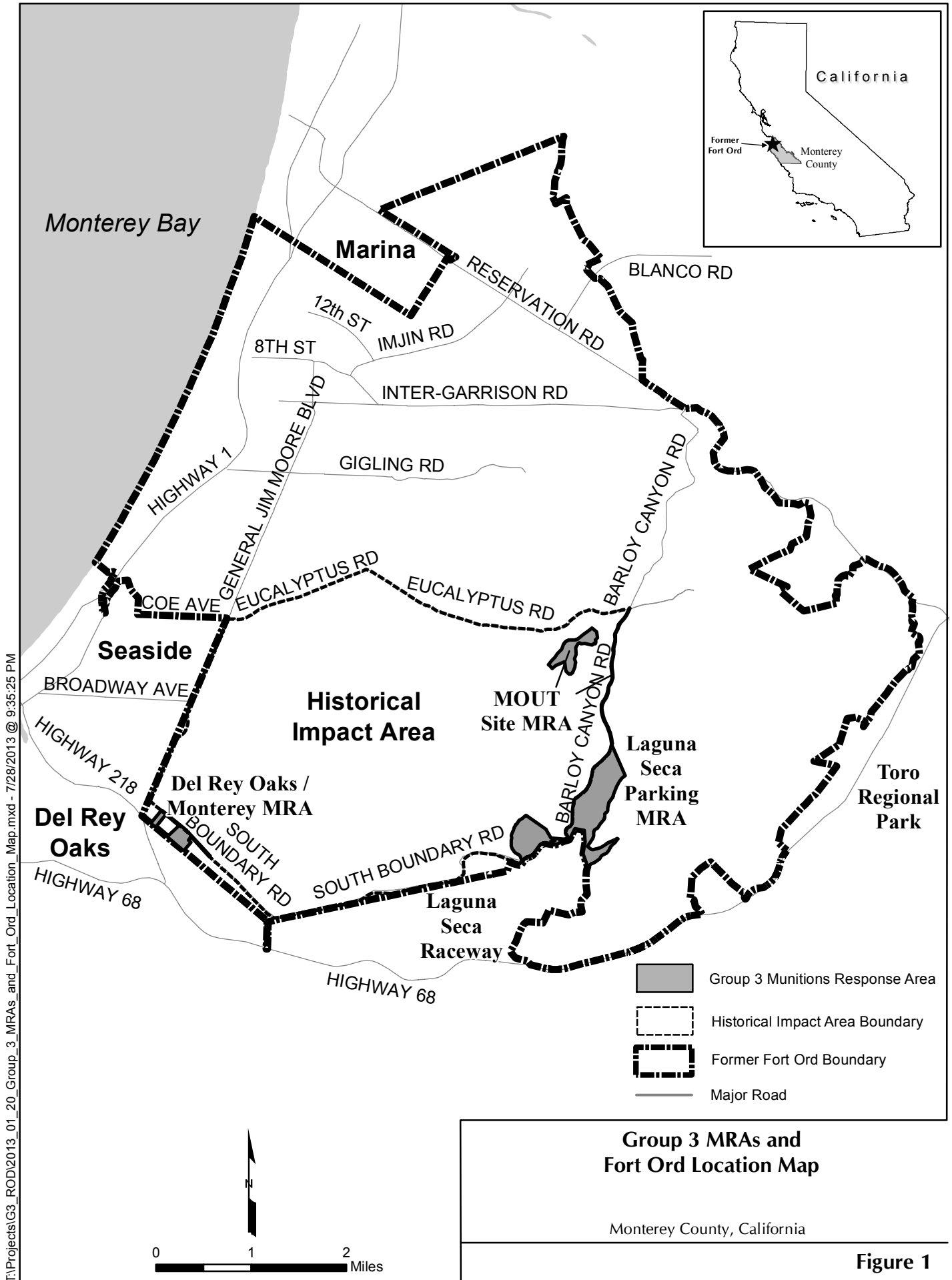
Acronyms

ARARs = applicable or relevant and appropriate requirements
 CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act
 EPA = U.S. Environmental Protection Agency
 LUCs = Land Use Controls
 MEC = munitions and explosives of control
 MOUT = Military Operations in Urban Terrain
 MRA = munitions response area

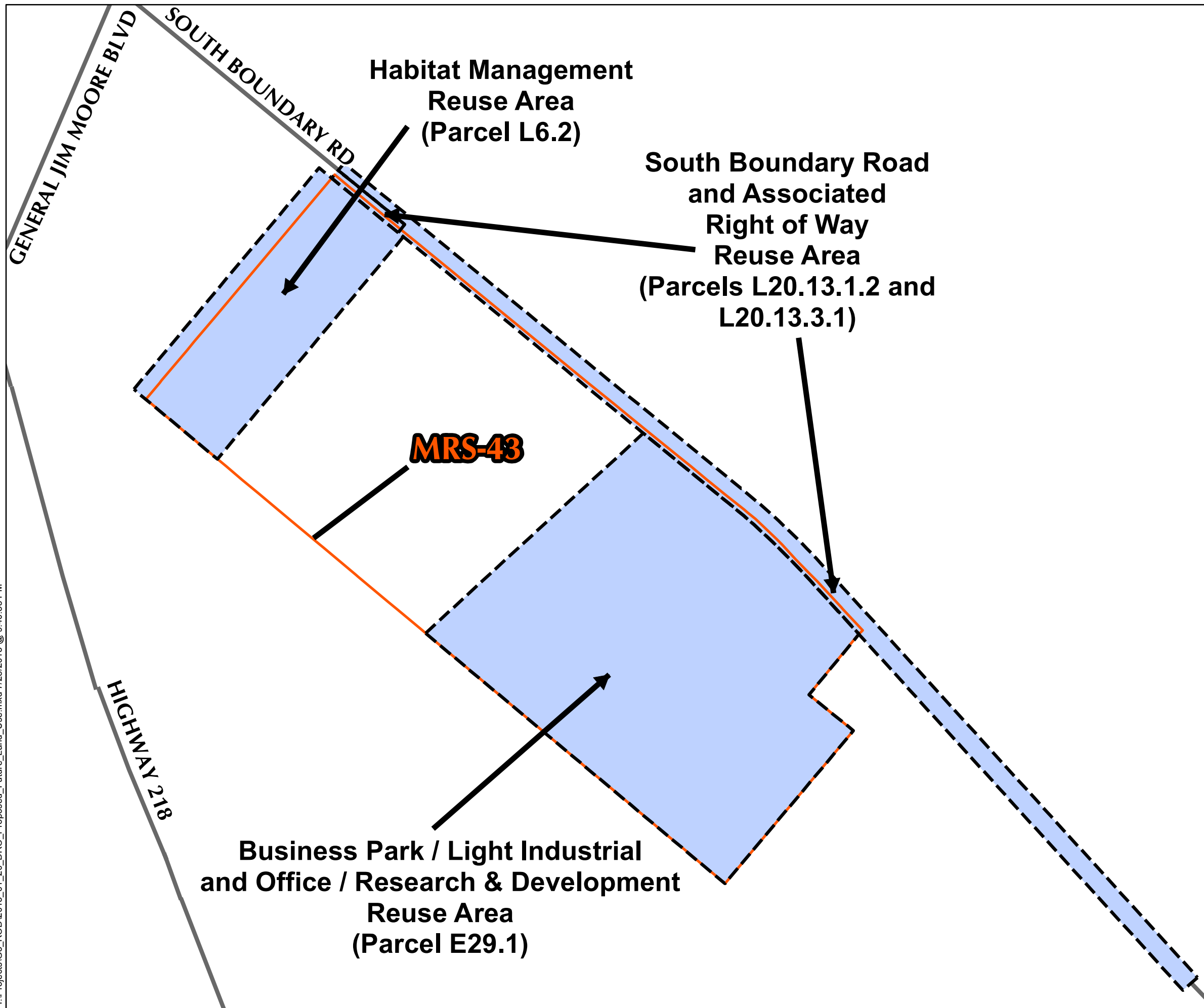
Footnotes

¹ = Completed MEC removal actions already provide for reduction of volume.

FIGURES

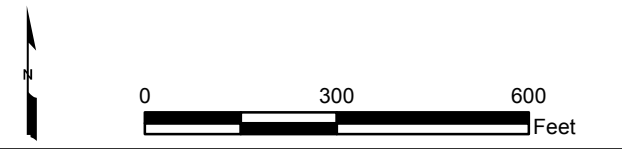
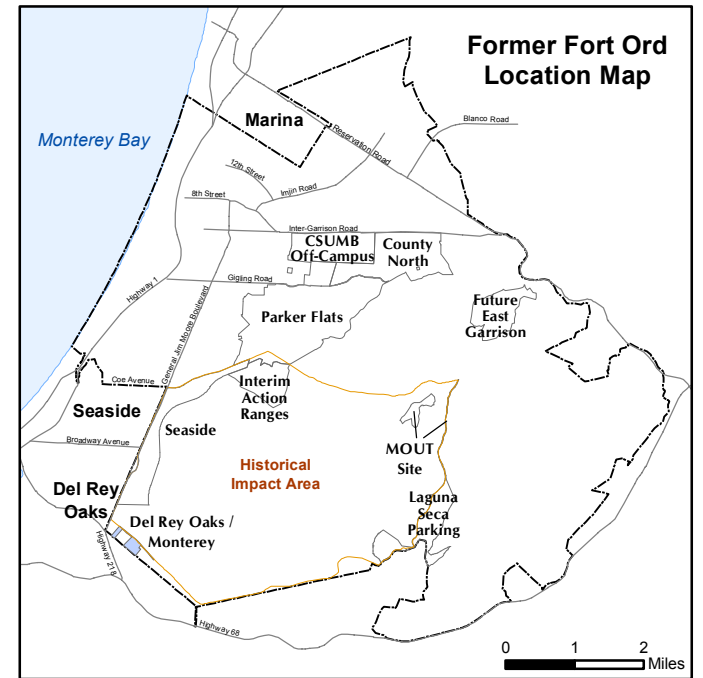


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Legend

- Munitions Response Area (area subject to Land Use Controls)
- USACE Parcel
- MRS-43
- Major Road



Del Rey Oaks / Monterey MRA Reuse Areas and Munitions Response Sites

Monterey County, California

Figure 2

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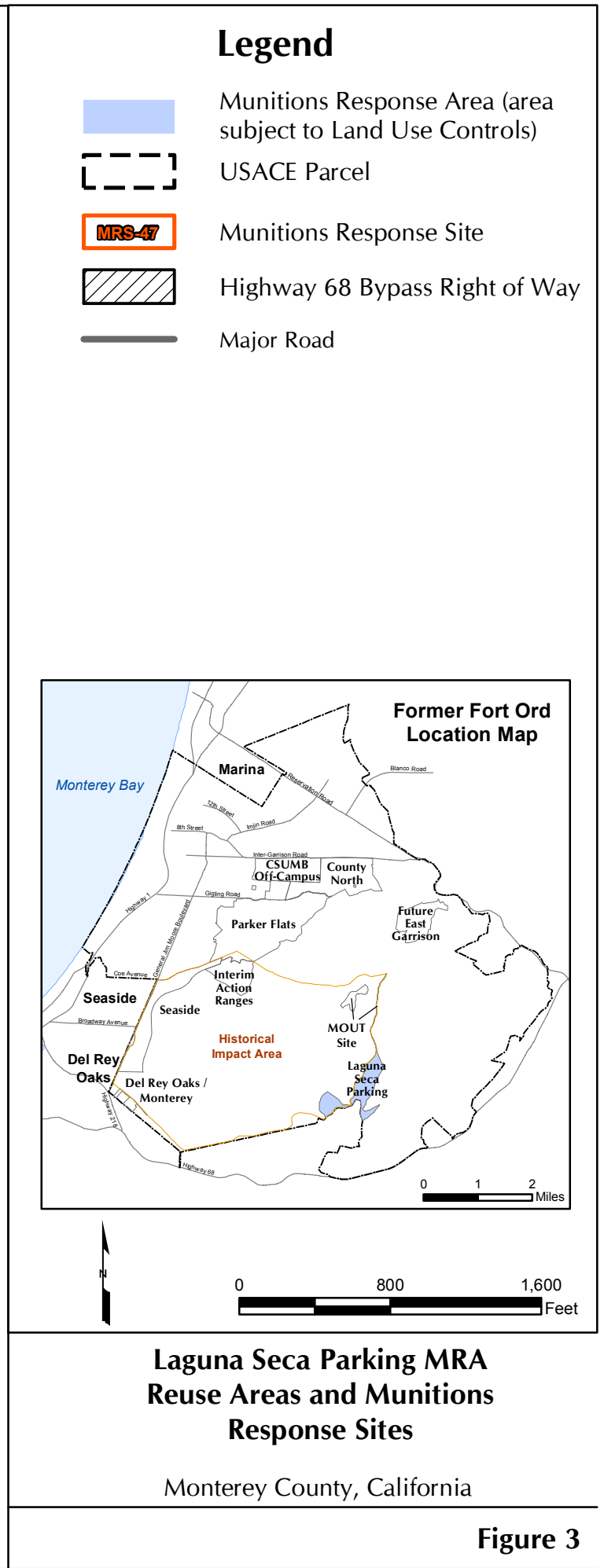
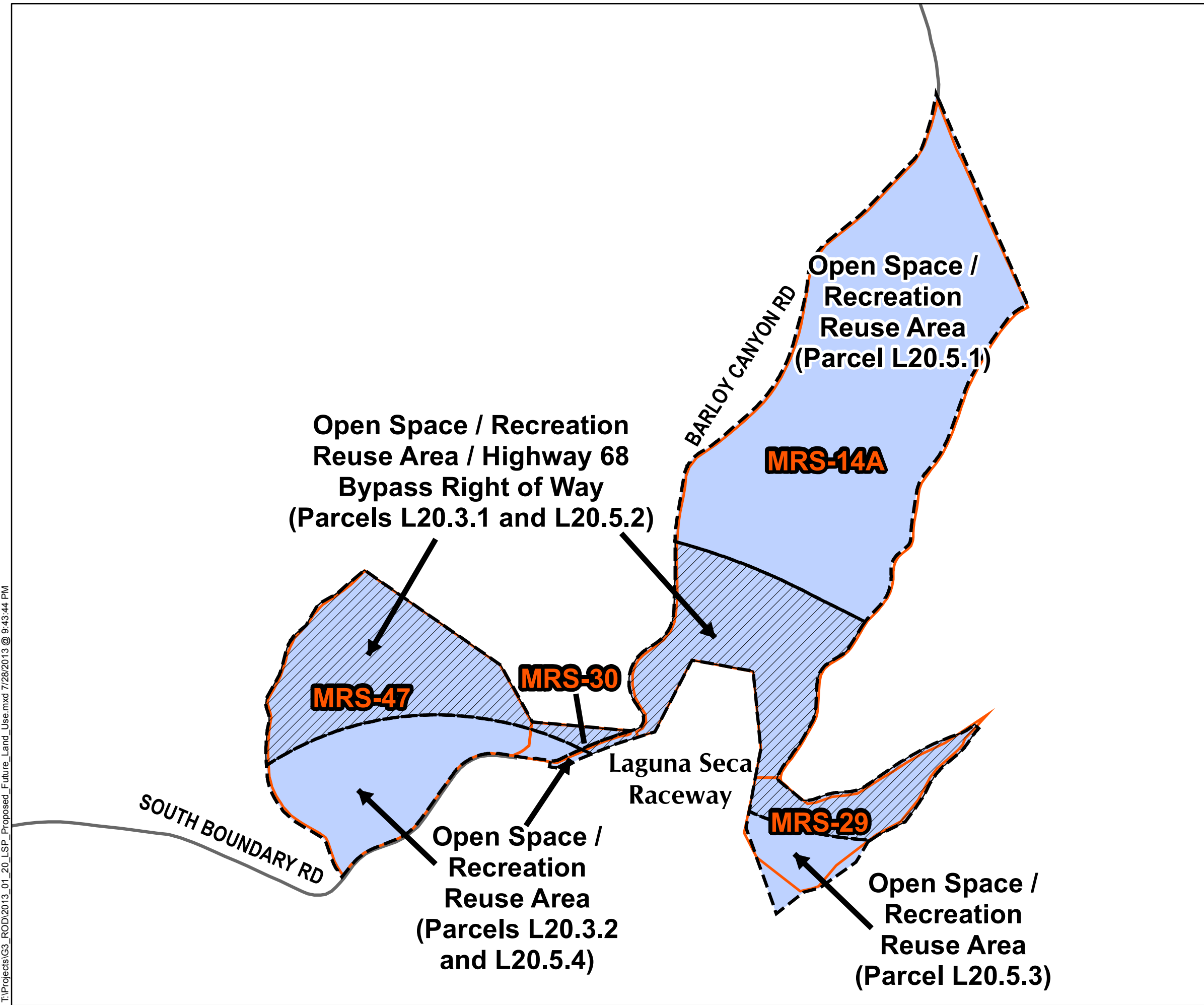
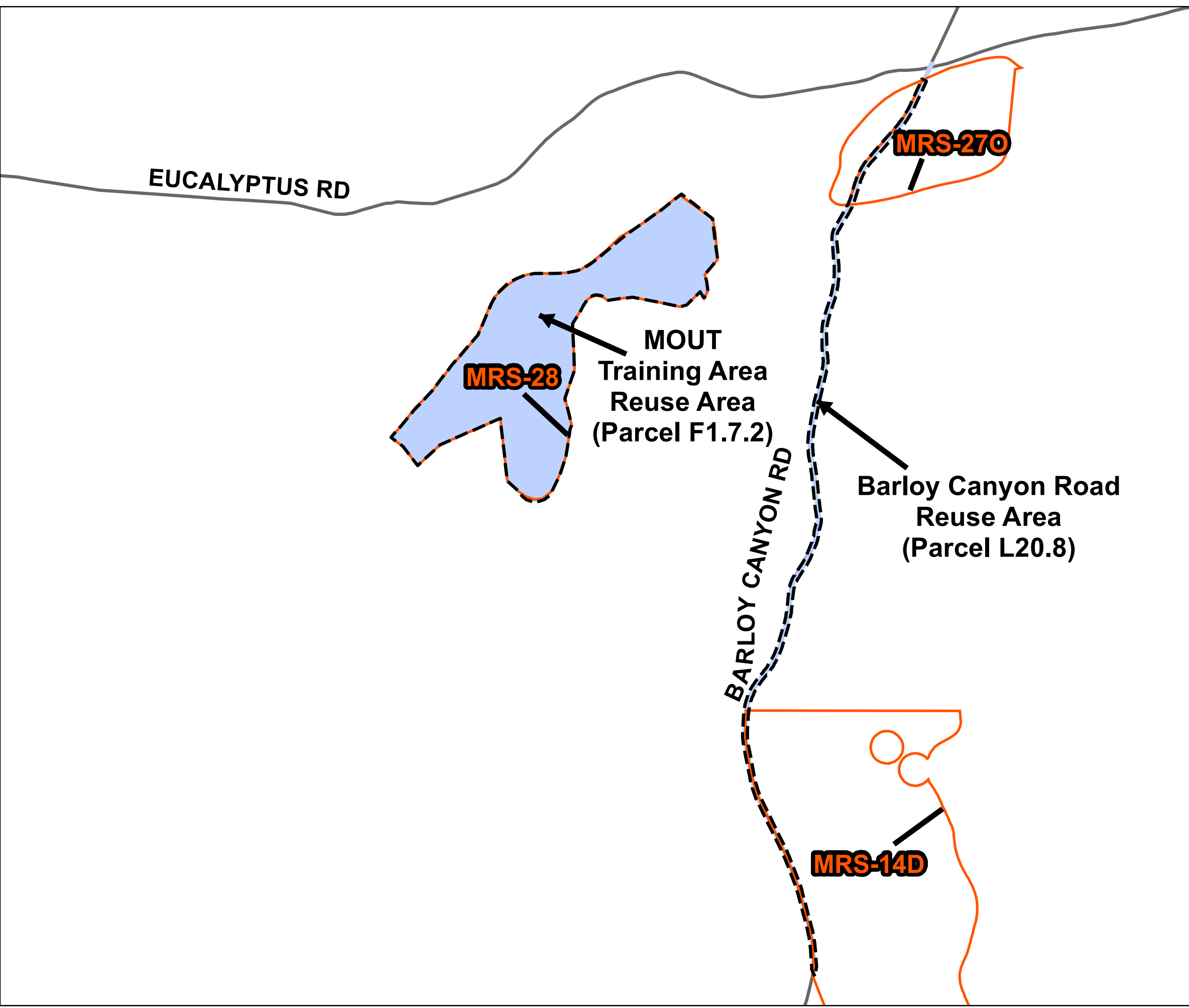


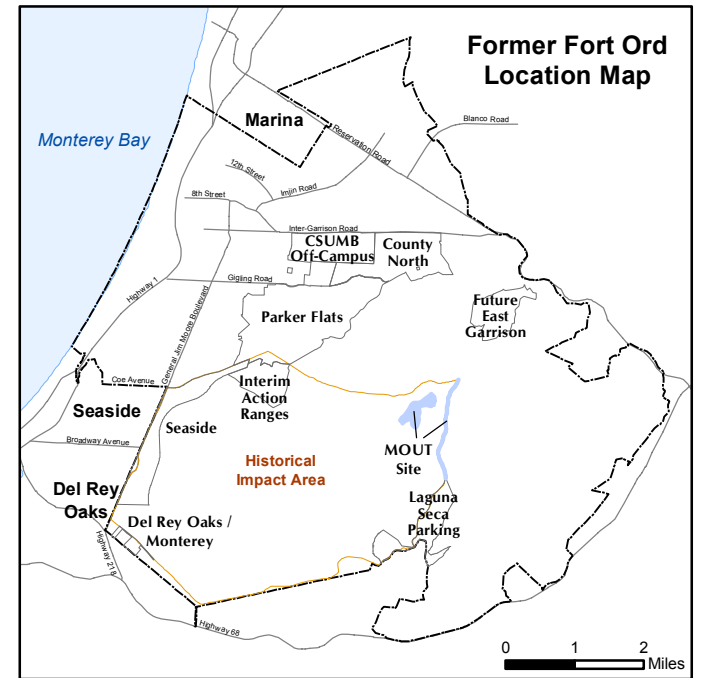
Figure 3

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Legend

- Munitions Response Area (area subject to Land Use Controls)
- USACE Parcel
- Munitions Response Site
- Major Road



MOUT Site MRA Reuse Areas and Munitions Response Sites

Monterey County, California

Figure 4

APPENDIX A

GLOSSARY OF MILITARY MUNITIONS RESPONSE PROGRAM TERMS

APPENDIX A

Glossary of Military Munitions Response Program Terms

Administrative Record – A compilation of all documents relied upon to select a remedial action pertaining to the investigation and cleanup of the former Fort Ord. *Source:* (1).

After Action Report (AAR) – A report presenting the results of munitions and explosives of concern (MEC) investigation, sampling and/or removal actions conducted at a site pertaining to the investigation and cleanup of the former Fort Ord. *Source:* (1).

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, otherwise known as Superfund) – CERCLA authorizes federal action to respond to the release or threatened release of hazardous substances into the environment or a release or threatened release of a pollutant or contaminant into the environment that may present an imminent or substantial danger to public health or welfare. *Source:* (1).

Construction Support – Assistance provided by the Department of Defense (DOD), explosive ordnance disposal (EOD) or unexploded ordnance (UXO)-qualified personnel and/or by personnel trained and qualified for operations involving chemical agents (CA), regardless of configuration, during intrusive construction activities on property known or suspected to contain UXO, other munitions that may have experienced abnormal environments (e.g., discarded military munitions [DMM]), munitions constituents in high enough concentrations to pose an explosive hazard, or CA, regardless of configuration, to ensure the safety of personnel or resources from any potential explosive or CA hazards. *Source:* (3).

Discarded Military Munitions (DMM) – Military munitions that have been abandoned without proper disposal or removed from storage in a military magazine or other storage area for the purpose of disposal. The term does not include unexploded ordnance (UXO), military munitions that are being held for future use or planned disposal, or military munitions that have been properly disposed of consistent with applicable environmental laws and regulations. (10 U.S.C. 2710(e)(2)).

For the purposes of the basewide Military Munitions Response Program (MMRP) being conducted at the former Fort Ord, DMM does not include small arms ammunition (.50 caliber and below).

Engineering Control (EC) – A variety of engineered remedies to contain and/or reduce contamination, and/or physical barriers intended to limit access to property. Some examples of ECs include fences, signs, guards, landfill caps, soil covers, provision of potable water, slurry walls, sheet pile (vertical caps), pumping and treatment of groundwater, monitoring wells, and vapor extraction systems. *Source:* (5).

Expended – The state of munitions debris (MD) in which the main charge has been expended leaving the inert carrier. *Source:* (1).

Feasibility Study (FS) – An evaluation of potential remedial technologies and treatment options that can be used to clean up a site. *Source:* (1).

Historical Impact Area – The historical impact area consists of approximately 8,000 acres in the southwestern portion of former Fort Ord, bordered by Eucalyptus Road to the north, Barloy Canyon Road to the east, South Boundary Road to the south, and North-South Road (renamed General Jim Moore Boulevard) to the west. *Source:* (1).

Institutional Control (IC) – (a) Non-engineered instruments such as administrative and/or legal controls that minimize the potential for human exposure to contamination by limiting land or resource use; (b) are

generally to be used in conjunction with, rather than in lieu of, engineering measures such as waste treatment or containment; (c) can be used during all stages of the cleanup process to accomplish various cleanup-related objectives; and (d) should be “layered” (i.e., use multiple ICs) or implemented in a series to provide overlapping assurances of protection from contamination. *Source:* (6).

Land Use Controls (LUCs) – LUC are physical, legal, or administrative mechanisms that restrict the use of, or limit access to, real property, to manage risks to human health and the environment. Physical mechanisms encompass a variety of engineering remedies to contain or reduce contamination and/or physical barriers to limit access to real property, such as fences or signs. *Source:* (3).

Magnetometer – An instrument used to detect ferromagnetic (iron-containing) objects. Total field magnetometers measuring the strength of the earth’s natural magnetic field at the magnetic sensor location. Gradient magnetometers, sensitive to smaller near-surface metal objects, use two sensors to measure the difference in magnetic field strength between the two sensor locations. Vertical or horizontal gradients can be measured. *Source:* (4).

Military Munitions – Military munitions means all ammunition products and components produced for or used by the armed forces for national defense and security, including ammunition products or components under the control of the Department of Defense (DOD), the Coast Guard, the Department of Energy, and the National Guard. The term includes confined gaseous, liquid, and solid propellants, explosives, pyrotechnics, chemical and riot control agents, smokes, and incendiaries, including bulk explosives and chemical warfare agents, chemical munitions, rockets, guided and ballistic missiles, bombs, warheads, mortar rounds, artillery ammunition, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers, demolition charges, and devices and components of the above.

The term does not include wholly inert items, improvised explosive devices, and nuclear weapons, nuclear devices, and nuclear components, other than non-nuclear components of nuclear devices that are managed under the nuclear weapons program of the Department of Energy after all required sanitization operations under the Atomic Energy Act of 1954 (42 U.S.C. 2011 et seq.) have been completed. (10 U.S.C. 101(e)(4)(A through C)).

Military Munitions Response Program (MMRP) – Department of Defense (DOD)-established program to manage the environmental, health and safety issues presented by munitions and explosives of concern (MEC). *Source:* (1).

Mortar – Mortars typically range from approximately 1 inch to 11 inches in diameter or larger, and can be filled with explosives, toxic chemicals, white phosphorus or illumination flares. Mortars generally have thinner metal casing than projectiles but use the same types of fuzing and stabilization. *Source:* (2).

Munitions Constituents (MC) – Any materials originating from unexploded ordnance (UXO), discarded military munitions (DMM), or other military munitions, including explosive and non-explosive materials, and emission, degradation, or breakdown elements of such ordnance or munitions (10 U.S.C. 2710 (e) (3)).

Munitions Debris (MD) – Remnants of munitions (e.g., fragments, penetrators, projectiles, shell casings, links, fins) remaining after munitions use, demilitarization, or disposal. *Source:* (3).

Munitions and Explosives of Concern (MEC) – Distinguishes specific categories of military munitions that may pose unique explosives safety risks, such as: (A) unexploded ordnance (UXO), as defined in 10 U.S.C. 101(e)(5)(A through C); (B) discarded military munitions (DMM), as defined in 10 U.S.C. 2710 (e) (2); or (C) munitions constituents (e.g., Trinitrotoluene [TNT], Cyclotrimethylene trinitramine

[RDX]), as defined in 10 U.S.C. 2710(e)(3), present in high enough concentrations to pose an explosive hazard. (32 CFR 179.3).

For the purposes of the basewide Military Munitions Response Program (MMRP) being conducted for the former Fort Ord, MEC does not include small arms ammunition (.50 caliber and below).

Munitions Response Area (MRA) – Any area on a defense site that is known or suspected to contain unexploded ordnance (UXO), discarded military munitions (DMM), or munitions constituents (MC). Examples are former ranges and munitions burial areas. A MRA comprises of one or more munitions response sites (MRSs). (32 CFR 179.3).

Munitions Response Site (MRS) – A discrete location within a Munitions Response Area (MRA) that is known to require a munitions response. (32 CFR 179.3).

No Further Action – Determination following a remedial investigation or action that a site does not pose a significant risk and so requires no further activity under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). *Source:* (1).

Projectile – An object projected by an applied force and continuing in motion by its own inertia, as a bullet, bomb, shell, or grenade. Also applied to rockets and to guided missiles. *Source:* (2).

Proposed Plan – A plan that identifies the preferred alternative for a site cleanup, and is made available to the public for comment. *Source:* (1).

Record of Decision (ROD) – A ROD is the document used to record the remedial action decision made at a National Priorities List property. The ROD will be maintained in the project Administrative Record and project file. *Source:* (1).

Remedial Investigation (RI) – The RI is intended to “adequately characterize the site for the purpose of developing and evaluating an effective remedial alternative” (NCP, 40 CFR 300.430[d]). In addition, the RI provides information to assess the risks to human health, safety, and the environment that were identified during risk screening in the site investigation. *Source:* (1).

Superfund – See Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) above.

Unexploded Ordnance (UXO) – Military munitions that: (A) have been primed, fuzed, armed, or otherwise prepared for action; (B) have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installations, personnel, or materials; and (C) remain unexploded, whether by malfunction, design, or any other cause. (10 U.S.C. 101(e)(5)(A through C)).

For the purposes of the basewide Military Munitions Response Program (MMRP) being conducted for the former Fort Ord, UXO does not include small arms ammunition (.50 caliber and below).

UXO-Qualified Personnel – Personnel who have performed successfully in military explosives ordnance disposal (EOD) positions, or are qualified to perform in the following Department of Labor, Service Contract Act, Directory of Occupations, contractor positions: Unexploded Ordnance (UXO) Technician II, UXO Technician III, UXO Safety Officer, UXO Quality Control Specialist or Senior UXO Supervisor. *Source:* (3)

Sources:

(1) Non-standard definition developed to describe Fort Ord-specific items, conditions, procedures,

- principles, etc. as they apply to issues related to the munitions and explosives of concern (MEC) cleanup.
- (2) U.S. Department of Defense Environment, Safety and Occupational Health Network and Information Exchange. 1996. Unexploded Ordnance (UXO): An Overview. October.
 - (3) U.S. Department of Defense Manual Number 6055.09-M, Volume 8, SUBJECT: DoD Ammunition and Explosives Safety Standards: Glossary, Administratively Reissued. August 4, 2010.
 - (4) Survey of Munitions Response Technologies, June 2006. ITRC with ESTCP (Environmental Security and Technology Certification Program) and SERDP (Strategic Environmental Research and Development Program).
 - (5) Compendium of Department of Defense Acronyms, Terms, and Definitions. The Interstate Technology and Regulatory Council (ITRC) Work Group (Unexploded Ordnance Work Team), December 2000.
 - (6) Institutional Controls: A Site Managers' Guide to Identifying, Evaluating, and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanups. US EPA Office of Solid Waste and Emergency Responses (OSWER) 9355.0-74FS-P, EPA 540-F-00-005. September, 2000.