Record of Decision
Del Rey Oaks Munitions Response Area
Track 2 Munitions Response Site

Former Fort Ord, California

October 6, 2008

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

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APPENDIX

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 (Plate 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 Del Rey Oaks Munitions Response Area (Del Rey Oaks MRA), one of the Track 2 Munitions Response Remedial Investigation/Feasibility Study (Track 2 MR Remedial Investigation/Feasibility Study) sites at the former Fort Ord Army base in Monterey County, California (Plate 2).

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) and other purposes. Because the military conducted munitions-related activities (e.g., live-fire training) on the facility, military munitions (e.g., UXO, 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. These military munitions items may be present in parts of the former Fort Ord. 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 Munitions Response Program Terms is provided in Appendix A.

Track 2 sites are those sites where MEC was found and a munitions response (MEC removal) action was conducted. The Track 2 site known as the Del Rey Oaks MRA contains portions or all of three 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 removal actions also included Quality Control and Quality Assurance requirements that evaluated the adequacy of the removal action. The munitions response to MEC was designed to address MEC to depths of four feet below ground surface (bgs); however, all anomalies (i.e., ferromagnetic material), even those deeper than four feet bgs, were investigated, with all MEC encountered within the Del Rey Oaks MRA removed. All further statements in this document referring to “removals to four feet bgs” should be understood to include the prosecution of all detected anomalies to resolution, regardless of their depth bgs. 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, resident, or visitor) may encounter MEC at the Del Rey Oaks MRA, the Army conducted the Del Rey Oaks MRA Remedial Investigation/Feasibility Study to evaluate remedial alternatives to address this potential risk, which is considered low, to future land users (*MACTEC, 2007*).

1.2. Basis and Purpose

This decision document presents the selected remedial action for MEC for the Del Rey Oaks MRA MRSs. This remedy was selected in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendment and Reauthorization Act (SARA), 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 United States Department of the Army (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 the EPA have jointly selected the remedy. The California Environmental Protection Agency as represented by the Department of Toxic Substances Control (DTSC) has had an opportunity to review and comment on the ROD.

1.3. Site Assessment

The response action selected in this ROD is necessary to protect public health or welfare or the environment from actual or threatened releases of hazardous substances, or of pollutants or contaminants that may present an imminent and substantial endangerment to public health or welfare.

1.4. Description of the Selected Remedy

The selected remedy described in this ROD addresses risks to human health and the environment from MEC that potentially remains in the Del Rey Oaks MRA. A munitions response (MEC removal) has been completed at the Del Rey Oaks MRA, significantly reducing the risks to human health and the environment. Because detection technologies may not detect all MEC present, the selected remedy includes Land Use Controls (LUCs). These LUCs include: (1) MEC recognition and safety training for those people that use the property and conduct ground disturbing or intrusive activities; (2) construction support by UXO-qualified personnel for ground disturbing or intrusive activities; and (3) restrictions against residential use of the northern and southern parts of the Del Rey Oaks MRA. For the purpose of this ROD, residential use includes, but is not limited to, residences, day care facilities that do not have measures to prevent contact with soil, schools for persons under 21 years of age, and hospitals (other than veterinary hospitals) (*State Covenant to Restrict Use of Property*, described below). A Remedial Design/Remedial Action Work Plan (RD/RAWP) will be developed to: (1) outline the processes for implementing the conditions on soil disturbance activities identified in the remedy; and (2) identify procedures for responding to discoveries of MEC, including coordinating a response to a future discovery of a significant amount of MEC in the Del Rey Oaks MRA. These conditions may be modified in the future based on the five-year review process.

The City of Del Rey Oaks and the Fort Ord Reuse Authority (FORA) requested early transfer of the Del Rey Oaks MRA. The Army conducted a munitions response (MEC removal), developed the Finding of Suitability for Early Transfer (FOSET; *Army, 2004*), and transferred the property under early transfer authority with EPA and the Governor's concurrence. The Army's assessment indicated that with the exception of the approximate 2.5-acre Range 26 berm area consisting of 11 MEC removal grids—hereinafter referred to as the "11-Grid Area"—the property could be transferred with no restriction on land use. However, the Army agreed to enter into a State Covenant to Restrict Use of Property with DTSC, with which the City of Del Rey Oaks agreed. The Covenant excluded the following types of use for the entire Del Rey Oaks MRA: residential use, day care facilities that do not have measures to prevent contact with soil, schools for persons under 21 years of age, and hospitals (other than veterinary hospitals). Pursuant to an agreement with DTSC, the City of Del Rey Oaks has adopted a City Ordinance (City Ordinance 259, Chapter 15.48)—also known as the "Excavation Ordinance"—which addresses the potential explosive safety risks posed by MEC, particularly UXO, by requiring permits for certain soil movement or excavation activities. The City of Del Rey Oaks has designated all real property within the

City's land use jurisdiction, that was formerly part of Fort Ord and identified as a possible location of UXO, as an "Ordnance Remediation District" ("District"). This includes the Del Rey Oaks MRA.

Based on the results of the completed munitions response as identified in the Del Rey Oaks MRA Remedial Investigation and Risk Assessment, additional munitions response actions are not recommended within the Del Rey Oaks MRA (*MACTEC, 2007*). However, a portion of transfer parcels E29a and E29b.1 (11-Grid Area) were transferred with restrictions in accordance with Army Regulation (AR) 405-90, Appendix D-4(b) (*Army, 1985*). The area includes 11 MEC removal grids associated with a berm at Range 26. The Army's assessment of the 11-Grid Area indicated uncertainties associated with the MEC removal due to metallic clutter in the area. The Army will provide construction support within the 11-Grid Area during soil excavation or movement at depths exceeding four feet bgs. All intrusive activities in this area (exceeding a depth of four feet bgs) shall be in accordance with Engineer Pamphlet (EP) 75-1-2 (*USACE, 2004*). The specific location of each of the grids in the 11-Grid Area is delineated on Plate 2.

The selected remedy for the Del Rey Oaks MRA—*Conditions on Soil Disturbance Activities to Minimize MEC Exposure and Residential Use Restrictions Including Contingency to Address Proposed Change in Site Reuse*—was identified as the preferred remedial alternative in the Del Rey Oaks MRA Feasibility Study (Del Rey Oaks MRA Feasibility Study) (*MACTEC, 2007*), and includes the following components:

Conditions on Soil Disturbance Activities to Minimize MEC Exposure

- MEC Recognition and Safety Training—The Army recommends reasonable and prudent precautions be taken when conducting ground disturbing or intrusive activities and will provide MEC recognition and safety training, upon request, for any persons that will be conducting such activities at the MRA. MEC recognition and safety training is required for people conducting ground disturbing or intrusive activities within the 11-Grid Area at depths exceeding four feet bgs. It should be noted that, pursuant to the Del Rey Oaks —DTSC Agreement, no soil disturbance may begin until the Army safety training, or equivalent, has been provided to all construction workers involved in soil disturbance.

- Construction Support in the 11-Grid Area—The Army will provide construction support within the 11-Grid Area during soil excavation or movement at depths exceeding four feet bgs.

- Site-Wide Construction Support—The City of Del Rey Oaks (the current land owner) will provide site-wide construction support in compliance with the Excavation Ordinance throughout the remainder of the MRA as defined in the agreement between the City of Del Rey Oaks and DTSC at the time of early transfer of the property. Although the Army does not believe construction support throughout the entire MRA is necessary based on the results of the Del Rey Oaks MRA Remedial Investigation and Risk Assessment, pursuant to the Del Rey Oaks – DTSC Agreement, the City of Del Rey Oaks agreed to implement this requirement, at its expense, through establishment and maintenance of a city ordinance.

The Army and City of Del Rey Oaks will maintain these LUCs until EPA and DTSC concur that the site is protective of human health and environment without construction support and MEC recognition and safety training on the basis of: (1) further site evaluation incorporating new information (e.g., limited geophysical mapping, site development); and/or (2) where, using construction support, it is determined that the depth of soil disturbance related to development activities is sufficient to address the uncertainty of MEC remaining in soil and any MEC found as part of the development are removed.

Residential Use Restrictions

A residential use restriction is in effect for the Del Rey Oaks MRA since the transfer of the property. The Army does not believe that a residential use restriction is necessary for the Del Rey Oaks MRA. To obtain regulatory agency concurrence on this ROD, the residential use restrictions as part of the selected remedy will be modified as follows:

- The residential use restriction for the central portion of the MRA is no longer required and therefore the existing restrictions on the central portion of the Del Rey Oaks MRA can be modified (Plate 2). DTSC intends to modify the Del Rey Oaks State Covenant to Restrict Use of Property.

- The residential use restriction for the remainder (the northern and southern portions) of the Del Rey Oaks MRA would be modified to allow for residential use, as appropriate, once DTSC has verified that the Residential Protocol has been successfully implemented. In its March 18, 2008 letter to the Army, DTSC enclosed its *Residential Protocol (DTSC, 2008)*. Any proposal for residential development in the Del Rey Oaks MRA where this restriction applies will be subject to regulatory review. Residential use for these specified areas will be prohibited until: (1) the City of Del Rey Oaks (the current land owner) notifies the Army, EPA, and DTSC in writing of its intent to change the designated site use from recreational/commercial to residential, in advance; and (2) DTSC concurs that residential use is appropriate based on successful implementation of the Residential Protocol or further site evaluation incorporating new information (e.g., geophysical mapping, site development). Plate 2 shows the approximate northern and southern portions of the site where the residential use restriction will continue to apply. For the purpose of this ROD, residential use includes, but is not limited to, residences, day care facilities that do not have measures to prevent contact with soil, schools for persons under 21 years of age, and hospitals (other than veterinary hospitals).

As part of the LUC implementation strategy, Long Term Management Measures will be included for all land use areas within the Del Rey Oaks MRA. These measures are comprised of the State Covenant to Restrict Use of Property; a Federal deed; annual letter reporting by the City of Del Rey Oaks pursuant to the Del Rey Oaks—DTSC Agreement; and five-year review reporting by the Army. The current deed informs current and future property owners that MEC was found and removed and outlines appropriate procedures future property owners should follow in the event they encounter MEC. Annually, pursuant to the Del Rey Oaks – DTSC Agreement, the City of Del Rey Oaks will submit a report to the regulatory agencies of any MEC finds and any changes in site conditions that could increase the possibility of encountering MEC. The Army will review the letter reports and consider the information provided during its five-year reviews.

Although the Army determined that there were no potential Federal or State applicable or relevant and appropriate requirements (ARARs) that relate to LUCs at the Del Rey Oaks MRA, LUCs will be implemented in a manner consistent with applicable Federal and State guidance. While the Army does not consider California laws and regulations concerning Land Use Covenants to be potential ARARs, the Army entered into a State Covenant to Restrict Use of Property at the time the property was transferred, and after the Del Rey Oaks MRA ROD is signed, the existing covenant will be modified, if appropriate, to document the land use restrictions included in the selected remedy. Although DTSC and EPA Region IX disagree with the Army's determination that California laws and regulations concerning Land Use Covenants are not potential ARARs, they will agree-to-disagree on this issue since the Army executed the State Covenant to Restrict Use of Property and agrees that it will be modified, if appropriate, to be consistent with the selected remedy, in a manner acceptable to DTSC.

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. A munitions response to MEC, intended to remove the principal threats to human health and the environment at the Del Rey Oaks MRA, has 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 have removed all MEC potentially present within the Del Rey Oaks MRA, 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 2012.

1.6. ROD Data Certification Checklist

The following information is included in the Decision Summary section 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. and Table 1).
- Current and reasonably anticipated future land use assumptions used in the risk assessment and ROD (Section 2.9.).
- The hypothetical baseline and current after-action "Overall MEC Risk Scores" estimated in the risk assessment before and after removal actions were conducted (Section 2.10.).
- The 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 2.12. and 2.13.).
- 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 2.14.3.).
- Key factor(s) that led to selection of the remedy (Section 2.15. and Table 3).

1.7. Authorizing Signatures and Support Agency Acceptance of Remedy

Record of Decision
Del Rey Oaks Munitions Response Area
Track 2 Munitions Response Site
Former Fort Ord, California

Signature Sheet for the foregoing Record of Decision for Del Rey Oaks Munitions Response Area, Track 2 Munitions Response Site, Former Fort Ord, California, among the United States Army, the United States Environmental Protection Agency, and the California Environmental Protection Agency, Department of Toxic Substances Control.

Addison D. Davis, IV
Deputy Assistant Secretary of the Army
Environment, Safety, and Occupational Health

24 OCT 08
Date

Record of Decision
Del Rey Oaks Munitions Response Area
Track 2 Munitions Response Site
Former Fort Ord, California

Signature Sheet for the foregoing Record of Decision for Del Rey Oaks Munitions Response Area, Track 2 Munitions Response Site, Former Fort Ord, California, among the United States Army, the United States Environmental Protection Agency, and the California Environmental Protection Agency, Department of Toxic Substances Control.

Gail Youngblood — 29 Sept 2008

Gail Youngblood
BRAC Environmental Coordinator
Fort Ord BRAC Office
U.S. Department of the Army

Date

Record of Decision
Del Rey Oaks Munitions Response Area
Track 2 Munitions Response Site
Former Fort Ord, California

Signature Sheet for the foregoing Record of Decision for Del Rey Oaks Munitions Response Area, Track 2 Munitions Response Site, Former Fort Ord, California, among the United States Army, the United States Environmental Protection Agency, and the California Environmental Protection Agency, Department of Toxic Substances Control.

Michael M. Montgomery
Assistant Director, Federal Facilities and
Site Cleanup Branch
U.S. Environmental Protection Agency
Region IX

11/21/08
Date

Record of Decision
Del Rey Oaks Munitions Response Area
Track 2 Munitions Response Site
Former Fort Ord, California

Signature Sheet for the foregoing Record of Decision for Del Rey Oaks Munitions Response Area, Track 2 Munitions Response Site, Former Fort Ord, California, among the United States 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.

Daniel T. Ward

11/25/08

Daniel T. Ward, P.E.
Supervising Hazardous Substances Engineer I
Sacramento Office
Brownfields and Environmental Restoration Program
Department of Toxic Substances Control
California Environmental Protection Agency

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 (Plate 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. The Union Pacific Railroad and State Route 1 pass 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: 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. After 1975, the 7th Infantry Division occupied Fort Ord. 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, historic 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. Some of the property on the installation has 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, guided missiles, rifle and hand grenades, practice land mines, pyrotechnics, bombs, 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 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. The reuse of the former Fort Ord following transfer of property increases the possibility of the public being exposed to explosive hazards. MEC investigation and removal 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 Cal/EPA 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 FORA Fort Ord Base Reuse Plan (*FORA, 1997*) and its updates. All basewide MR Remedial Investigation/Feasibility Study documents have been, or will be, prepared in cooperation with the EPA and DTSC in accordance with the FFA, made available for public review and comment, and placed in the Administrative Record. Primary documents under the FFA are subject to EPA approval (in consultation with DTSC).

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 be involved and provide input regarding munitions response activities.

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) deed or property transfer documentation or letter of transfer notices; (3) MEC incident reporting; (4) MEC recognition and safety training; (5) school education; and (6) community involvement.

The basewide MR Remedial Investigation/Feasibility Study program is organized as a "tracking" process whereby sites with similar characteristics will be grouped to expedite cleanup, reuse, and/or transfer based on current knowledge. A site or area is assigned to a specific "track" (i.e., Track 0, 1, 2, or 3) according to the level of military munitions usage, military munitions investigation, sampling, or removal conducted to date, as described in the OE Remedial Investigation/Feasibility Study Work Plan (*USACE, 2000*). Track 0 areas at the former Fort Ord contain no evidence of MEC and have never been suspected as having been used for military munitions-related activities of any kind. Track 1 sites were

suspected to have been used for military training with military munitions, but based on a remedial investigation, no further action is required. Track 2 sites are areas at the former Fort Ord where MEC items were present, and MEC removal has been conducted. Track 3 sites are those areas where: (1) MEC are suspected or known to exist, but investigations are not yet complete or need to be initiated; or (2) areas identified in the future that meet this definition.

2.4. Community Participation

The Army published the Final Del Rey Oaks MRA Remedial Investigation/Feasibility Study Report on August 24, 2007, and made the Proposed Plan for the Del Rey Oaks MRA available to the public on August 28, 2007. The Proposed Plan presented the preferred alternative, which was selected as the final remedy in this ROD, and summarized the information in the Del Rey Oaks MRA Remedial Investigation/Feasibility Study and other supporting documents in the Administrative Record. The Army made these documents available to the public at the following locations:

- Seaside Branch Library, 550 Harcourt Avenue, Seaside, California.
- California State University Monterey Bay (CSUMB) Library Learning Complex, 100 Campus Center, Building 12, Seaside, California.
- Fort Ord Administrative Record, Building 4463, Gigling Road, Room 101, Ord Military Community, California.
- www.fortordcleanup.com website.

The Army published a notice of the availability of the Proposed Plan in the *Monterey County Herald* and the *Salinas Californian* on August 30, 2007. The initial 30-day public comment period, which was held from August 31 to September 30, 2007, was extended by 30 days at the request of the public, until October 30, 2007. In addition, the Army held a public meeting on September 12, 2007 to present the Proposed Plan to a broader community audience than those already 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. The Army's response to the comments received during this period is included in the Responsiveness Summary, which is part of this ROD.

2.5. Scope and Role of the 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 Del Rey Oaks MRA, where the Army has completed a munitions response as described in the Del Rey Oaks MRA Remedial Investigation/Feasibility Study (*MACTEC, 2007*).

The planned response action for this MRA will be the final remedy for protection of human health and the environment. Remedial Alternative 3 identified in the Proposed Plan is the selected remedy for addressing explosive safety risks posed by MEC at the Del Rey Oaks MRA, and is summarized as follows:

Remedial Alternative 3—Conditions on Soil Disturbance Activities to Minimize MEC Exposure and Residential Use Restrictions Including Contingency to Address Proposed Change in Site Reuse

- **Conditions on Soil Disturbance Activities to Minimize Exposure to MEC:** (1) MEC recognition and safety training for people that will conduct ground disturbing or intrusive activities within the 11-Grid Area (see Section 2.8. and Plate 2) at depths exceeding four feet bgs; (2) construction support by UXO-qualified personnel during ground disturbing or intrusive activities (provided by the Army) within the 11-Grid Area at depths exceeding four feet bgs; and (3) site-wide construction support (provided by the City of Del Rey Oaks) throughout the rest of the MRA.

- **Residential Use Restrictions**: A residential use restriction is in effect for the Del Rey Oaks MRA since the transfer of the property. The residential use restrictions as part of the selected remedy will be modified as follows:

  - The residential use restriction for the central portion of the Del Rey Oaks MRA is no longer required and therefore the existing restrictions on the central portion of the Del Rey Oaks MRA can be modified (Plate 2). DTSC intends to modify the Del Rey Oaks State Covenant to Restrict Use of Property.

  - The residential use restriction for the remainder (the northern and southern portions) of the Del Rey Oaks MRA would be modified to allow for residential use, as appropriate, once DTSC has verified that the Residential Protocol has been successfully implemented. For the purpose of this ROD, residential use includes, but is not limited to, residences, day care facilities that do not have measures to prevent contact with soil, schools for persons under 21 years of age, and hospitals (other than veterinary hospitals).

Munitions constituents associated with small arms and UXO were addressed as part of the Hazardous and Toxic Waste (HTW) Remedial Investigation/Feasibility Study program. Restrictions related to munitions constituents in soil were not recommended after completion of both a soil removal action and post remediation risk assessment.

2.6. Site Characteristics

The Del Rey Oaks MRA is approximately 324 acres in size and located between the southwestern edge of Fort Ord and the Impact Area MRA (Plate 1). The land comprising the Del Rey Oaks MRA was purchased by the Government in 1917. The Del Rey Oaks MRA is primarily undeveloped.

The three MRSs that comprise the Del Rey Oaks MRA (Munitions Response Site [MRS]-15 DRO 01, MRS-15 DRO 02, and a portion of MRS-43) are shown on Plate 2. Portions of these MRSs were used for live-fire training (e.g., artillery, rockets), and other military training that may have included the use of military munitions.

2.7. Del Rey Oaks MRA Track 2 Remedial Investigation Summary

The Del Rey Oaks MRA was evaluated as a Track 2 site. It contains portions or all of three MRSs identified in Table 1 where MEC removals have been conducted. These MRSs are also shown on Plate 2. The Del Rey Oaks MRA Remedial Investigation (*MACTEC, 2007*) is based on the evaluation of previous work conducted for the MRA according to the guidance provided in the *Final Plan for the Evaluation of Previous Work* (*HLA, 2000b*) and the *Track 2 Data Quality Objectives Technical Memorandum* (*MACTEC, 2003*).

The results of the evaluation performed for the Del Rey Oaks MRA indicated there was a strong weight of evidence to support the conclusion that the data are useable for performing a risk assessment

and feasibility study as determined by the Project Team. The Project Team was composed of representatives from the Army, EPA, and DTSC.

This section provides background information on the Del Rey Oaks MRA Remedial Investigation data collection and review (site evaluations) conducted for the MRSs. Table 1 summarizes the results of the site-specific investigations, and Section 2.8. provides a summary of the site evaluations for the MRSs presented in the Del Rey Oaks MRA Remedial Investigation/Feasibility Study (*MACTEC, 2007*).

Scope of Investigations and Removal Actions — The munitions response actions were designed to address MEC to depths of four feet bgs; however, all anomalies (i.e., ferromagnetic material), even those deeper than four feet bgs, were investigated with all detected MEC encountered removed within the Del Rey Oaks MRA. All further statements in this document referring to "removals to four feet bgs" should be understood to include the prosecution of all detected anomalies to resolution, regardless of their depth bgs. The munitions response actions conducted within the Del Rey Oaks MRA focused on addressing explosive safety. According to the U.S. Army Corps of Engineers (USACE) UXO Safety Specialist for the Sacramento District, when non-military munitions related debris was found, it was removed from the excavation and inspected for explosive hazards and for the presence of hazardous wastes. If MEC or hazardous wastes were identified, they were removed and disposed of following the appropriate requirements. After inspection, non-hazardous debris was either left at or removed from the site.

At the Del Rey Oaks MRA, two primary munitions response contractors performed munitions responses to MEC: (1) CMS Environmental, Inc. (CMS), now USA Environmental, Inc. (USA); and (2) Parsons Infrastructure & Technology Group, Inc. (Parsons).

Site Evaluation—Data evaluation for the Del Rey Oaks MRA was documented by completion of a series of checklists, according to procedures described in the *Final Plan for Evaluation of Previous Work* (*HLA, 2000b*). These checklists are available as Appendix A of the Del Rey Oaks MRA Remedial Investigation (*MACTEC, 2007*).

As described in the Del Rey Oaks MRA Remedial Investigation, the MRSs that comprise the MRA were first identified in Archives Searches conducted in 1993, 1994, and 1997. These searches included reviews of historical maps and other documents, as well as interviews with current and former Fort Ord personnel (ASR; *USADESCH, 1993*).

The Army's munitions response contractors completed a MEC removal to four feet bgs within the Del Rey Oaks MRA. Following the removal action, quality assurance (QA) and quality control (QC) surveys were conducted using procedures outlined for each removal action. If additional anomalies were discovered during the QC survey, they were investigated and removed as appropriate. No MEC was found during QC investigations. No quality assurance failures occurred during the Del Rey Oaks MRA removal action. However, the Army's assessment indicated uncertainties associated with the MEC removal in the 11-Grid Area within Range 26 (see Section 2.8.).

2.8. Del Rey Oaks MRA Munitions Response Site Summaries

This section summarizes the munitions response actions conducted for the MRSs identified in the Del Rey Oaks MRA Remedial Investigation (*MACTEC, 2007*). Any MEC encountered during these response actions were destroyed by detonation. Recovered munitions debris (MD) was disposed or recycled after being inspected and determined not to pose an explosive hazard. Table 1 summarizes key information about each MRS. More detailed information is provided in the Del Rey Oaks MRA Remedial Investigation (*MACTEC, 2007*). Some of the investigations discussed below extend beyond the Del Rey

Oaks MRA boundaries; however, only the results that pertain to the Del Rey Oaks MRA are presented below.

Road and Trail Clearance

To facilitate safe travel within the Impact Area, removal actions were performed to depth over 100 percent of the road surface within selected portions of the Impact Area. Many of these roads were informally named for tracking purposes. Canister, Flechette, and Napalm roads are within the northern portion of MRS-15 DRO 01. During this munitions response, neither MEC nor MD was discovered on the three roads (*USA, 2001e)*.

Fuel-Break Removal Action

Between May and July of 1998, 30-foot wide fuel breaks were developed along the eastern boundaries of MRS-15 DRO 01 and MRS-15 DRO 02, as well as along the western and southern borders of the Del Rey Oaks MRA (*USA, 2001c*). The fuel break areas were divided into contiguous 30- by 110-foot grids, and a MEC removal to four feet bgs was conducted. During this munitions response, four MEC items were found and removed. An additional 25 items were recovered, inspected, determined to be MD that did not pose an explosive hazard, and removed (*USA, 2001c*).

Impact Area Grid Investigation

Between October 1997 and January 1998, 41 grids within the Impact Area were investigated to determine the necessity and scope of future removal actions (*USA, 2000*). Of these, seven 100- by 100-foot grids were investigated in MRS-15 DRO 01 and one 100- by 100-foot grid was investigated in MRS-15 DRO 02. These grids were located behind and between range fans. During this investigation, no MEC or MD items were encountered within these grids. No grids were located in MRS-43.

SiteStats/GridStats Sampling

In 1998, 53 grids within MRS-15 DRO 01 and MRS-43 were randomly selected to provide representative data for the Del Rey Oaks MRA. These grids were selected using SiteStats/GridStats software, which statistically selects random sampling locations within grids in order to collect representative data for the site. A further description of the SiteStats/GridStats program is presented in the *Engineering Evaluation/Cost Analysis - Phase 2, Former Fort Ord, Monterey, California* (*Army, 1998*). During this investigation, thirty-four 100- by 200-foot grids within MRS-15 DRO 01 and nineteen 100- by 200-foot grids within MRS-43 were investigated. During this investigation, eight MEC items were found and removed. An additional 86 items were recovered, inspected, determined to be MD that did not pose an explosive hazard, and removed (*USA, 2001f*).

Remediation Activity MEC Removals

Between March 1998 and July 1999, a removal action was conducted within portions of MRS-15 DRO 01 during site preparation for remediation of spent small arms target areas and staging areas in Ranges 24, 25, and 26 (*USA, 2001f*). A removal action was conducted on a total of sixty 100- by 100-foot grids and portions of seven additional grids where it was determined that military munitions other than small arms ammunition may also be present in the vicinity of Range 24. During this munitions response, 60 MEC items were found and removed. An additional 974 items were recovered, inspected and determined to be MD that did not pose an explosive hazard, and removed.

Additional Investigation Activities

Based on the results of investigation and removal actions within portions of the MRA, it was determined that additional investigations of MRS-15 DRO 01, MRS-15 DRO 02, and MRS-43 were necessary (*USA, 2001a)*. An investigation was conducted on a total of one hundred sixty-nine 100- by 100-foot grids and seven 100- by 200-foot sampling grids within MRS-43. The 169 grids were distributed throughout the Del Rey Oaks MRA. Of these 169 grids, two were not investigated because they were located in the 5-acre habitat area within MRS-15 DRO 01. This 5-acre portion of MRS-15 DRO 01 was subdivided from MRS-15 DRO, and is now identified as MRS-15 DRO 01A. MRS-15 DRO 01A was evaluated as a Track 1 plug-in site (*Army, 2005*). During this investigation, 37 MEC items were found and removed. An additional 212 items were recovered, inspected, determined to be MD that did not pose an explosive hazard, and removed.

Non-Time Critical Removal Action

Based on previous work, four areas of concern were identified for MEC removal actions as presented in two Notices of Intent (NOIs) (*Army, 1999, 2000*). Removal actions were conducted throughout the two NOI areas using a Schonstedt magnetometer. In addition, each grid within the entire Del Rey Oaks MRA, including the NOI areas and previously investigated grids, was re-surveyed using geophysical equipment (i.e., the EM61, EM61 hand held, Schonstedt magnetometer, or the G-858 magnetometer). The Schonstedt magnetometer was used to survey grids where digital equipment could not be used due to accessibility issues related to terrain or vegetation. The vegetation and terrain of the individual grids dictated the selection of the appropriate geophysical instrument for each grid. During this munitions response, a total of 149 MEC items were found and removed. An additional 2,385 items were recovered, inspected, determined to be MD that did not pose an explosive hazard, and removed (*USA, 2001a)*.

Analog QC audits over ten percent of all completed geophysically surveyed grids were performed using a 4 step plan as presented in the contractor work plan (*USA, 2000b*). No QC deficiencies were noted in the After Action Report (*USA, 2001a*). The USACE UXO Safety Specialists conducted final QA inspections in the Del Rey Oaks MRA. All grids within the Del Rey Oaks MRA passed U.S. Army Engineering Support Center, Huntsville (USAESCH) QA inspection standards and were accepted by the USACE (*USA, 2001a*).

After NOI removals were completed, three additional areas were identified as requiring an additional removal action. These areas, which were the easternmost portion of MRS-15 DRO 01 and MRS-15 DRO 02 (known as the eastern boundary area), the Range 26 berm (known as the 11-Grid Area), and an area to the west of the Range 26 berm (known as the Machine Gun Link Area), are further described below. These areas were identified because: (1) the digital geophysical investigation that was to be completed over transfer parcels E29a and E29b.1 stopped short of the parcel boundaries at the eastern MRS boundary; and (2) it was believed that MEC potentially remained in the subsurface of the 11-Grid Area and Machine Gun Link Area. These additional removal actions are described below.

Eastern Boundary Clearance

A geophysical survey and MEC removal action was completed over a 30-foot wide, 2-mile long strip of land, that included 3.3 acres of the eastern boundary of MRS-15 DRO 02 (*Parsons, 2003*). Schonstedt magnetometers were used to survey the area. During this munitions response, eight MEC items were found and removed. An additional two items were recovered, inspected, determined to be MD that did not pose an explosive hazard, and removed. The area was then re-surveyed using digital geophysical instruments. No MEC was encountered during the re-survey and digital geophysical investigation.

However, over71 pounds of debris was recovered, inspected, determined to be MD that did not pose an explosive hazard, and removed (*Parsons, 2003*).

With the exception of one grid, all 103 grids in the eastern boundary investigation area passed the QC inspections. The grid failure resulted from the finding of the aluminum body of an illumination signal during the QC inspection. This finding, and the items encountered during QC on the 11-Grid Area of the Range 26 berm (described below) that were inspected and determined to be MD that did not pose an explosive hazard, led to a corrective action mandating the use of digital geophysical equipment along with analog equipment to recheck excavations to ensure MEC was removed from the excavated areas.

Range 26 Berm Excavation (11-Grid Area)

Because the Range 26 berm area had previously been determined to be a manmade structure and to have significant amounts of metallic clutter, it was determined that there was a low probability of detecting MEC within four feet bgs and a moderate potential for detecting MEC below four feet bgs. Based on this information, the berm was removed in 1-foot lifts until the Project Team (the Army, EPA, and DTSC) determined that the level of the berm matched the contours of the preexisting terrain. Approximately five feet of soil from the berm was removed and deposited over an area covering 22 grids north and east of the berm. The Range 26 berm work area (comprised of the berm [11 grids] and the adjacent areas where the berm material was deposited [22 grids]—[33 grids total]) was then investigated using digital geophysical equipment to detect and locate potential subsurface MEC. All anomalies encountered were investigated; one MEC item was found and 7,941 pounds of range-related debris that was inspected, and determined not to pose and explosive hazard (*Parsons, 2003*) were removed. During the anomaly excavations that followed the removal of the berm material, layers of machine gun links were found below the newly exposed surface in some areas. This indicated that an insufficient amount of soil had been removed, and that the newly exposed surface did not match the contour of the original terrain (before the berm was first constructed) in some areas.

During QC, items that were inspected and determined to be MD that did not pose an explosive hazard were found and removed. It was determined that the metallic clutter in the berm material covering the areas adjacent to the berm prevented the QC equipment from detecting larger anomalies near the clutter. These findings led to a corrective action mandating the use of digital geophysical equipment along with analog equipment to recheck excavations to ensure that any MEC present and detected was removed.

The Army's assessment of the removal data and QC/QA information indicated that the 11-Grid Area within Range 26 had uncertainties associated with the removal due to metallic clutter in the area.

Machine Gun Link Clearance

Machine gun links were removed from approximately 2.5 acres comprising 12 grids in the western portion of Range 26 within MRS-15 DRO 01, immediately west of the berm area (*Parsons, 2003*). The area was excavated to between three and four feet below the original surface, until links were no longer visible. During this work, links were observed in grids north and west of the work area, and the original 9-grid work area was expanded to include three additional grids.

After excavation, the 12 grids were digitally surveyed and the resulting anomalies were investigated. No MEC was found. Three pounds of debris that was recovered, inspected, determined to be MD that did not pose an explosive hazard, and 2,740 pounds of range-related debris was removed.

As mentioned previously, the individual investigations and removals described in this section may have only covered a portion of the Del Rey Oaks MRA; however, after these actions had been completed, the entire Del Rey Oaks MRA had been surveyed, with all MEC detected removed.

2.9. Current and Potential Future Land and Resource Uses

Currently, the land comprising the Del Rey Oaks MRA is undeveloped. The planned future land uses are primarily based upon the FORA Fort Ord Base Reuse Plan (*FORA, 1997*) and the Installation-Wide Multispecies Habitat Management Plan for Fort Ord (*USACE, 1997*).

The Reuse Plan identified approximately 20 land-use categories for the former Fort Ord (*FORA, 1997*). These include habitat management, open space/recreation, institutional/public facilities, commercial, industrial/business park, residential, tourism, mixed use, and other uses. The Reuse Plan for the Del Rey Oaks MRA, which was put forth when the area was identified for early transfer, includes a visitor serving area, an office park, a business park, and a light industrial area, although the specific development plan was not presented.

The City of Del Rey Oaks and FORA requested early transfer of the Del Rey Oaks MRA. The Army conducted munitions response actions, developed the FOSET, and transferred the property under early transfer authority with EPA and State concurrence. As part of this early transfer, the Army entered into a State Covenant to Restrict Use of Property with DTSC, with which the City of Del Rey Oaks agreed. This Covenant prevented the following types of use for the entire Del Rey Oaks MRA: residential use, day care facilities that do not have measures to prevent contact with soil, schools for persons under 21 years of age, and hospitals (other than veterinary hospitals). More recently, DTSC and the City of Del Rey Oaks have discussed removing the restriction on residential use. As part of the environmental review process, the City of Del Rey Oaks issued the *Draft Initial Study and Mitigated Negative Declaration for the City of Del Rey Oaks Housing Element and Amendments to the General Plan, Redevelopment Plan, and Zoning Ordinance* in 2006 (*Duffy & Associates, 2006*); however, the City of Del Rey Oaks is now preparing an Environmental Impact Report for that project.

Transfer parcels E29a and E29b.1, which correspond to parcels MRS-15 DRO 01 and MRS-15 DRO 02, respectively, are identified as Borderland Development Areas along a Natural Resources Management Area (NRMA) Interface in the *Installation-Wide Multispecies Habitat Management Plan for Former Fort Ord, California* (HMP; *USACE, 1997*). Therefore, future property owner(s) must comply with specific use restrictions and/or conservation, management, monitoring, and reporting requirements, as outlined in the early-transfer Deed. Currently, the proposed reuse of these parcels includes the development of a resort hotel and golf course and associated infrastructure (*Army, 2004*). This land use is expected to include recreational uses, including golfing. Residential reuse within portions of the Del Rey Oaks MRA is also being considered. Construction workers (e.g., maintenance workers) are expected to be involved in each of these reuses.

Commercial/retail facilities and offices are planned for the portion of MRS-43 within the Del Rey Oaks MRA. For this land use type, indoor workers, and outdoor construction and maintenance workers are anticipated.

2.10. Summary of Site Risks

A munitions response has been completed at the Del Rey Oaks MRA, significantly reducing the potential risks to human health and the environment from the explosive hazards associated with MEC.

Because detection technologies may not detect all MEC present, a future land user may encounter MEC. This risk was evaluated in a risk assessment as part of the Remedial Investigation/Feasibility Study.

For the basewide MR Remedial Investigation/Feasibility Study being conducted at the former Fort Ord, the Project Team (the Army, EPA, and DTSC) developed the Fort Ord Ordnance and Explosives (OE) Risk Assessment Protocol (*Malcolm Pirnie, 2002*) to qualitatively estimate the potential explosive safety risks posed by MEC at MRSs on the former Fort Ord. Because MEC removals had been completed, the Project Team evaluated "Baseline" (prior to MEC removal) and "After-Action" (after MEC removal) land use conditions. The Project Team developed "Overall MEC Risk Scores" for each area for the baseline scenarios, after-action use scenarios, and multiple anticipated "receptors" that the team assumed would use these areas. The MEC risk assessment did not establish acceptable remediation levels, but was used to develop and evaluate remedial alternatives during the Feasibility Study.

The MEC Risk Assessment Protocol results are based on three key factors (MEC Hazard Type, Accessibility, and Exposure) that were assigned reuse-specific values and weighted in importance. These factors were used to develop an Overall MEC Risk Score for each potential receptor 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 for the Del Rey Oaks MRA Feasibility Study (*MACTEC, 2007*).

The receptors evaluated as part of the Risk Assessment are based on the proposed future land uses for the MRA, including a visitor serving area, a business park, and light industrial and office park uses (*Army, 2004*). In addition, residential uses were also considered. Based on these proposed land uses, a recreational user (golfer), indoor worker, outdoor maintenance worker, construction worker, and adult/child resident were evaluated as potential receptors in the Risk Assessment.

In general, the results of the risk assessment for the Del Rey Oaks MRA indicated that the completed MEC investigation and removal actions decreased the overall risks. For the identified reuse-specific receptors (recreational user, indoor worker, outdoor maintenance worker, construction worker, and adult/child resident), Overall MEC Risk Scores were assigned the lowest score (A). Although the risk is scored as an A for all receptors, it is not possible to confirm that all MEC has been removed from the site. It is anticipated that those people who conduct ground disturbing or intrusive activities (e.g., construction workers, outdoor maintenance workers, and residents) would have a greater chance of encountering any MEC potentially present than those people who do not conduct such activities.

In particular, review of the Remedial Investigation data indicated that the majority of the high hazard "Type 3" items (37mm projectiles and 2.36-inch rockets) were removed from the northern and southern portions of the Del Rey Oaks MRA. In addition, penetrating projectiles (primarily 75mm Shrapnel, and 37mm), both as MEC and MD, were found primarily in the northern and southern portions of the Del Rey Oaks MRA. Because these items, if encountered and disturbed, may pose the highest hazard, and are more likely to be found in the subsurface, greater uncertainty is associated with the removal in these areas. These data and the qualitative Overall MEC Risk Scores estimated for these receptors were used in the Del Rey Oaks MRA Feasibility Study (*MACTEC, 2007*) to guide the development and evaluation of response alternatives for the Del Rey Oaks MRA during both development and the reasonably anticipated future land uses.

The response action selected in this Record of Decision is necessary to protect the public health or welfare from the possible presence of MEC.

2.11. Remedial Action Objectives

The primary remedial action objectives (RAOs) for the Del Rey Oaks MRA, based on EPA's Remedial Investigation/Feasibility Study Guidance (*EPA, 1989*), are to achieve the EPA's threshold criteria of "Overall Protection of Human Health and the Environment" and "Compliance with ARARs". As described in EPA's *Land Use in the CERCLA Remedy Selection Process* (*EPA, 2000*), "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 300.43.0 (a)(l)(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…."

Consistent with EPA's guidance: (1) the principal threats at the Del Rey Oaks MRA have already been treated (i.e., MEC removal actions have been completed); and (2) institutional controls (hereinafter referred to as land use controls or LUCs) were considered in the development of response alternatives for managing the risk from MEC that potentially remains at the MRA.

Although the Army determined that there were no potential Federal or State ARARs that relate to LUCs at the Del Rey Oaks MRA, LUCs will be implemented in a manner consistent with applicable Federal and State guidance. While the Army does not consider California laws and regulations concerning Land Use Covenants to be potential ARARs, the Army entered into a State Covenant to Restrict Use of Property at the time the property was transferred, and after the Del Rey Oaks MRA ROD is signed, the existing covenant will be modified as appropriate to document the land use restrictions that are selected as part of the remedy. Although DTSC and EPA Region IX disagree with the Army's determination that California laws and regulations concerning Land Use Covenants are not potential ARARs, they will agree-to-disagree on this issue since the Army executed the State Covenant to Restrict Use of Property and agrees that it will be modified, to be consistent with the selected remedy, in a manner acceptable to DTSC.

2.12. Description of Alternatives

Remedial alternatives for the Del Rey Oaks MRA were evaluated in the Del Rey Oaks MRA Feasibility Study (*MACTEC, 2007*). Long Term Management Measures that will be implemented as part of the LUC implementation strategy at the Del Rey Oaks MRA include: (1) the State Covenant to Restrict Use of Property; (2) a Federal deed; (3) annual letter reporting by the City of Del Rey Oaks pursuant to the Del Rey Oaks—DTSC Agreement; and (4) five-year review reporting by the Army. These measures, which are considered part of the implementation and management aspects of the remedial alternatives, rather than specific mitigation measures, are described further in Section 2.14.2. The costs associated with implementing these measures for the entire Del Rey Oaks MRA over a period of 30 years are approximately $97,000.

The following three remedial alternatives were developed to mitigate the potential risk from MEC that potentially remains in the Del Rey Oaks MRA for future reusers identified as requiring additional risk management (i.e., workers conducting ground disturbing or intrusive activities) (*MACTEC, 2007*):

- **Alternative 1: No Further Action**—Provided as a baseline for comparison to the other remedial alternatives as required under CERCLA and the National Contingency Plan (NCP). This alternative assumes no further action would be taken related to MEC at the Del Rey Oaks MRA, and existing LUCs placed at the time the property was transferred would be removed. The Federal deed and State Covenant to Restrict Use of Property would be modified to remove construction support in the 11-Grid Area and residential use restrictions.

- **Alternative 2: Conditions on Soil Disturbance Activities to Minimize MEC Exposure**—Includes MEC recognition and safety training for people conducting ground disturbing or intrusive activities and construction support for ground disturbing or intrusive activities, which would be described in further detail in the RD/RAWP.

- **Alternative 3: Conditions on Soil Disturbance Activities to Minimize MEC Exposure and Residential Use Restrictions Including Contingency to Address Proposed Change in Site Reuse**—Includes MEC recognition and safety training for people conducting ground disturbing or intrusive activities and construction support for ground disturbing or intrusive activities, and a residential use restriction that would be modified, as appropriate, once DTSC has verified successful implementation of the Residential Protocol.

Remedial Alternatives 2 and 3 are described in further detail below:

Alternative 2: Conditions on Soil Disturbance Activities to Minimize MEC Exposure

This alternative was developed to address the uncertainty regarding the detection efficiency for the geophysical equipment that is not assumed to be 100 percent, rather than to mitigate a known risk posed by MEC, which is not expected to be present at the site. The costs associated with implementing the conditions described below over a period of 30 years are estimated to be a total of $67,000. The following conditions on soil disturbance activities would be implemented and maintained for the Del Rey Oaks MRA:

- MEC Recognition and Safety Training for Entire MRA—The Army recommends reasonable and prudent precautions be taken when conducting ground disturbing or intrusive activities and will provide MEC recognition and safety training, upon request, for any persons that will be conducting such activities at the MRA. MEC recognition and safety training is required for people conducting ground disturbing or intrusive activities at depths exceeding four feet bgs within the 11-Grid Area. It should be noted that, pursuant to the Del Rey Oaks —DTSC Agreement, no soil disturbance may begin until the Army safety training, or equivalent, has been provided to all construction workers involved in soil disturbance.

- Construction Support in the 11-Grid Area—The Army will provide construction support within the 11-Grid Area during ground disturbing or intrusive activities, such as soil excavation or movement, at depths exceeding four feet bgs.

- Site-Wide Construction Support—The City of Del Rey Oaks (the current land owner) will provide site-wide construction support in compliance with the Excavation Ordinance everywhere else at the site as defined in the agreement between the City of Del Rey Oaks and DTSC at the time of early transfer of the property. Although the Army does not believe site-wide construction support is necessary based on the results of the Remedial Investigation and Risk Assessment, pursuant to the Del Rey Oaks – DTSC Agreement, the City of Del Rey Oaks agreed to implement this requirement, at its expense, through establishment and maintenance of a city ordinance.

These conditions on soil disturbance activities would be implemented in accordance with LUC guidelines, and would be described in further detail in the RD/RAWP. The Army and City of Del Rey Oaks would maintain these LUCs until EPA and DTSC concur that the site is protective of human health and environment without construction support and MEC recognition and safety training on the basis of: (1) further site evaluation incorporating new information (e.g. limited geophysical mapping, site development) and/or (2) where, using construction support, it is determined that the depth of soil disturbance related to development activities is sufficient to address the uncertainty of MEC remaining in soil and any MEC found as part of the development are removed.

As part of the five-year review, the Army or its representatives would evaluate the effectiveness of each of the conditions on soil disturbance activities. If information indicates that MEC has not been encountered during development, redevelopment, or reuse of an area, the conditions may, with regulatory approval, be modified or terminated.

The standard procedure for reporting any encounter with a known or suspected military munitions (UXO, DMM) item in transferred former Fort Ord property is to report the encounter immediately to local law enforcement. The local law enforcement agency will promptly request Department of Defense (DoD) support for response (e.g., an Explosive Ordnance Disposal [EOD] unit). If the response involves a MEC item the Army will reassess the probability of encountering MEC and notify EPA and DTSC. If Army and EPA, in consultation with DTSC, determine that the probability of encountering MEC remains low, construction may resume with construction monitoring. If Army and EPA, in consultation with DTSC, determine that the probability is moderate or high, then a MEC removal will be conducted in the construction footprint before construction can resume. Pursuant to the Del Rey Oaks – DTSC Agreement, the City of Del Rey Oaks will immediately notify the Army, EPA, and DTSC if any MEC or MEC-like item is found at the site. The Army will also conduct five-year reviews, and will review and consider this information during the five-year reviews. If, upon such review, any additional evaluation or work, or modification of the remedy is proposed, the Army will submit the proposal to EPA and DTSC for consultation, consistent with Section 27.2 of the FFA.

Alternative 3: Conditions on Soil Disturbance Activities to Minimize MEC Exposure and Residential Use Restrictions Including Contingency to Address Proposed Change in Site Reuse

This alternative was also developed to address the uncertainty regarding the detection efficiency for the geophysical equipment that is not assumed to be 100 percent, rather than to mitigate a known risk posed by MEC which is not expected to be present at the site.

This alternative was developed assuming that a modified Residential Use Restriction would be implemented and maintained in specified areas of the Del Rey Oaks MRA to address proposed changes in the site's use. For the purpose of this ROD, residential use includes, but is not limited to, residences, day care facilities that do not have measures to prevent contact with soil, schools for persons under 21 years of age, and hospitals (other than veterinary hospitals). The Residential Use Restriction would only apply to specified areas in the northern and southern portions of the Del Rey Oaks MRA that regulatory agency review of the Remedial Investigation data indicated contained:

- The majority of the high hazard "Type 3" items (37mm projectiles and 2.36-inch rockets); and
- Penetrating projectiles (primarily 75mm Shrapnel, and 37mm), both as MEC and MD.

Because these munitions represent the highest hazard if encountered and disturbed, and are more likely to be found in the subsurface, the regulatory agencies expressed a greater uncertainty associated with the completeness of the MEC removals in these areas. Plate 2 shows the approximate northern and southern

portions of the site where, based on discussions with the Army and EPA, DTSC determined the residential use restriction would apply until DTSC has verified successful implementation of the Residential Protocol.

The Residential Use Restrictions are included in Alternative 3 in addition to the conditions on soil disturbance activities described for Alternative 2 above. Alternative 3 is further described below.

Conditions on Soil Disturbance Activities to Minimize Exposure to MEC

- MEC Recognition and Safety Training—The Army recommends reasonable and prudent precautions be taken when conducting ground disturbing or intrusive activities and will provide MEC recognition and safety training, upon request, for any persons that will be conducting such activities at the site. MEC recognition and safety training is required for people conducting ground disturbing or intrusive activities at depths exceeding four feet bgs within the 11-Grid Area. It should be noted that, pursuant to the Del Rey Oaks —DTSC Agreement, no soil disturbance may begin until the Army safety training, or equivalent, has been provided to all construction workers involved in soil disturbance.

- Construction Support in the 11-Grid Area—The Army will provide construction support within the 11-Grid Area during ground disturbing or intrusive activities, such as soil excavation or movement, at depths exceeding four feet bgs.

- Site-Wide Construction Support—The City of Del Rey Oaks (the current land owner) will provide site-wide construction support in compliance with the Excavation Ordinance everywhere else at the site as defined in the agreement between the City of Del Rey Oaks and DTSC at the time of early transfer of the of the property. Although the Army does not believe site-wide construction support is necessary based on the results of the Remedial Investigation and Risk Assessment, pursuant to the Del Rey Oaks – DTSC Agreement, the City of Del Rey Oaks agreed to implement this requirement, at its expense, through establishment and maintenance of a city ordinance.

The Army and City of Del Rey Oaks would maintain these LUCs until EPA and DTSC concur that the site is protective of human health and environment without construction support and MEC recognition and safety training on the basis of: (1) further site evaluation incorporating new information (e.g. limited geophysical mapping, site development); and/or (2) where, using construction support, it is determined that the depth of soil disturbance related to development activities is sufficient to address the uncertainty of MEC remaining in soil and any MEC found as part of the development are removed.

Residential Use Restrictions

A residential use restriction is in effect for the Del Rey Oaks MRA since the transfer of the property. The residential use restrictions as part of the selected remedy will be modified as follows:

- The residential use restriction for the central portion of the Del Rey Oaks MRA is no longer required and therefore the existing restrictions on the central portion of the Del Rey Oaks MRA can be modified (Plate 2). DTSC intends to modify the Del Rey Oaks State Covenant to Restrict Use of Property.

- The residential use restriction for the remainder (the northern and southern portions) of the Del Rey Oaks MRA would be modified to allow for residential use, as appropriate, once DTSC has verified that the Residential Protocol has been successfully implemented. Any proposal for residential development in the Del Rey Oaks MRA where this restriction applies will be subject to regulatory review. Residential use for these specified areas will be prohibited until: (1) the City of Del Rey

Oaks (the current land owner) notifies the Army, EPA and DTSC in writing of its intent to change the designated site use from recreational/commercial to residential, in advance; and (2) DTSC concurs that residential use is appropriate based on successful implementation of the Residential Protocol or further site evaluation incorporating new information (e.g., geophysical mapping, site development). For the purpose of this ROD, residential use includes, but is not limited to, residences, day care facilities that do not have measures to prevent contact with soil, schools for persons under 21 years of age, and hospitals (other than veterinary hospitals).

As part of the five-year review, the Army or its representatives would evaluate the effectiveness of each of the conditions on soil disturbance activities. If MEC has not been encountered during development, redevelopment, or reuse of an area, the conditions may, with regulatory approval, be modified or terminated.

The standard procedure for reporting any encounter with a known or suspected military munitions (UXO, DMM) item in transferred former Fort Ord property is to report the encounter immediately to local law enforcement. The local law enforcement agency will promptly request DoD support for response (e.g., an EOD unit). If the response involves a MEC item the Army will reassess the probability of encountering MEC and notify EPA and DTSC. If Army and EPA, in consultation with DTSC, determine that the probability of encountering MEC remains low, construction may resume with construction monitoring. If Army and EPA, in consultation with DTSC, determine that the probability is moderate or high, then a MEC removal will be conducted in the construction footprint before construction can resume. Pursuant to the Del Rey Oaks – DTSC Agreement, the City of Del Rey Oaks will immediately notify the Army, EPA, and DTSC if any MEC or MEC-like item is found at the site. The Army will also conduct five-year reviews, and will review and consider this information during the five-year reviews. If, upon such review, any additional evaluation or work, or modification of the remedy is proposed, the Army will submit the proposal to EPA and DTSC for consultation, consistent with Section 27.2 of the FFA.

2.13. Principal Threat Wastes

A munitions response has been completed at the Del Rey Oaks MRA. The principal threats at the Del Rey Oaks MRA have already been treated (i.e., MEC removal actions have been conducted), significantly reducing the risks to human health and the environment. Because detection technologies may not detect all MEC present, the selected remedy includes LUCs. The source material constituting the principal threats at the Del Rey Oaks MRA are MEC that potentially remain present at the MRA.

The selected remedy will address the threat through implementing:

- Conditions on Soil Disturbance Activities to Minimize Exposure to MEC: MEC recognition and safety training for people conducting ground disturbing or intrusive activities; and construction support by UXO-qualified personnel during ground disturbing or intrusive activities, such as soil excavation or movement, to address the possibility that MEC may be encountered.

- Residential Use Restrictions: A residential use restriction in the northern and southern portions of the Del Rey Oaks MRA until DTSC has verified successful implementation of the Residential Protocol.

2.14. Selected Remedy

2.14.1. Summary of the Rationale for the Selected Remedy

Each alternative developed for the Del Rey Oaks MRA was assessed against the nine EPA evaluation criteria described in Table 3. Using the results of this assessment, the Army compared the alternatives and selected a remedy for the Del Rey Oaks MRA. The remedy that best meets the nine EPA evaluation criteria is Remedial Alternative 3 (Conditions on Soil Disturbance Activities to Minimize MEC Exposure and Residential Use Restrictions Including Contingency to Address Proposed Change in Site Reuse). This remedy is consistent with the anticipated reuse at the time the property was transferred, and a munitions response that is consistent with that anticipated use has been performed. In addition, the remedy accommodates the proposed change in reuse by the current property owner, and is acceptable to DTSC.

This remedy was selected because it is protective of human health for all future land users, and will be effective in the short and long-term at mitigating the risk to people performing ground disturbing or intrusive activities from MEC potentially remaining at the site. The remedy, which will require a moderate level of effort to implement and administer over time, is cost effective. The remedy can be implemented in a manner consistent with applicable Federal and State guidance. The Army has determined that there were no potential Federal or State ARARs that relate to LUCs at the Del Rey Oaks MRA. Although DTSC and EPA Region IX disagree with the Army's determination that California laws and regulations concerning Land Use Covenants are not potential ARARs, they will agree-to-disagree on this issue since the Army executed the State Covenant to Restrict Use of Property and agrees that it will be modified, to be consistent with the selected remedy, in a manner acceptable to DTSC.

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

Community acceptance is discussed in the Responsiveness Summary (Section 3.). The selected remedy is further described below.

2.14.2. Description of the Selected Remedy

Remedial Alternative 3: Conditions on Soil Disturbance Activities to Minimize MEC Exposure and Residential Use Restrictions Including Contingency to Address Proposed Change in Site Reuse—is the selected remedy for the Del Rey Oaks MRA that was identified as the preferred remedial alternative in the Del Rey Oaks MRA Feasibility Study (*MACTEC, 2007)* and Proposed Plan (*Army, 2007*). These conditions and restrictions, and the LUC Implementation Strategy, are presented below.

Conditions on Soil Disturbance Activities to Minimize Exposure to MEC

- MEC Recognition and Safety Training—The Army recommends reasonable and prudent precautions be taken when conducting ground disturbing or intrusive activities and will provide MEC recognition and safety training, upon request, for any persons that will be conducting such activities at the MRA. Ground disturbing or intrusive activities within the 11-Grid Area at depths exceeding four feet bgs are prohibited without MEC recognition and safety training. It should be noted that, pursuant to the Del Rey Oaks —DTSC Agreement, no soil disturbance may begin until the Army safety training, or equivalent, has been provided to all construction workers involved in soil disturbance.

- Site-Wide Construction Support—Soil disturbance activities in the entire Del Rey Oaks MRA are prohibited without construction support.

    - The Army will provide construction support within the 11-Grid Area during soil excavation or movement at depths exceeding four feet bgs.

    - The City of Del Rey Oaks (the current landowner) will provide construction support everywhere else within the Del Rey Oaks MRA.

The Army and the City of Del Rey Oaks will maintain these LUCs until EPA and DTSC concur that the site is protective of human health and environment without construction support and MEC recognition and safety training on the basis of: (1) further site evaluation incorporating new information (e.g. limited geophysical mapping, site development); and/or (2) where, using construction support, it is determined that the depth of soil disturbance related to development activities is sufficient to address the uncertainty of MEC remaining in soil and any MEC found as part of the development are removed.

Residential Use Restrictions

A residential use restriction is in effect for the Del Rey Oaks MRA since the transfer of the property. The residential use restrictions as part of the selected remedy will be modified as follows:

- The residential use restriction for the central portion of the Del Rey Oaks MRA is no longer required and therefore the existing restrictions on the central portion of the Del Rey Oaks MRA can be modified (Plate 2). DTSC intends to modify the Del Rey Oaks State Covenant to Restrict Use of Property.

- The residential use restriction for the remainder (the northern and southern portions) of the Del Rey Oaks MRA would be modified to allow for residential use, as appropriate, once DTSC has verified that the Residential Protocol has been successfully implemented. Any proposal for residential development in the Del Rey Oaks MRA where this restriction applies will be subject to regulatory review. Residential use for these specified areas will be prohibited until: (1) the City of Del Rey Oaks (the current land owner) notifies the Army, EPA and DTSC in writing of its intent to change the designated site use from recreational/commercial to residential, in advance; and (2) DTSC concurs that residential use is appropriate based on successful implementation of the Residential Protocol or further site evaluation incorporating new information (e.g., geophysical mapping, site development). For the purpose of this ROD, residential use includes, but is not limited to, residences, day care facilities that do not have measures to prevent contact with soil, schools for persons under 21 years of age, and hospitals (other than veterinary hospitals).

The conditions on soil disturbance activities will be implemented in accordance with LUC guidelines, and will be described in further detail in the RD/RAWP. Under the FFA between the Army, EPA, and DTSC, a schedule for preparation of the RD/RAWP for the Del Rey Oaks MRA will be submitted within 21 days of signature of the ROD. After the ROD's signature, the current Federal deed and State Covenant to Restrict Use of Property will be modified as appropriate to remove the residential use restriction from the central portion of the Del Rey Oaks MRA and provide that the residential restriction on the remainder of the Del Rey Oaks MRA will apply until DTSC has verified successful implementation of the Residential Protocol.

As part of the five-year review, the Army or its representatives will evaluate the effectiveness of each of the conditions on soil disturbance activities. If MEC has not been encountered during development,

redevelopment, or reuse of an area, the conditions may, with regulatory approval, be modified or terminated.

The regulatory agencies identified the Residential Protocol as a suitable mechanism to terminate the residential use restriction once DTSC has verified successful implementation of the Residential Protocol, which will confirm that the subject area is suitable for residential use. During development activities by the property owner, initial grading of the top layer of soil would be followed by a geophysical investigation, as described in DTSC's Residential Protocol to confirm that MEC are not present in those areas. Because residential reuse was not part of the designated use at the time the property was transferred from the Army, any cost associated with changing the reuse by implementing this or any other activity will be the reuser's responsibility.

Land Use Control Implementation Strategy

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

- **MEC recognition and safety training:** (1) to ensure that current land users conducting 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 the encounter to the appropriate authority. It should be noted that, pursuant to the Del Rey Oaks —DTSC Agreement, no soil disturbance may begin until the Army safety training, or equivalent, has been provided to all construction workers involved in soil disturbance.

- **Construction support:** to ensure that projects where ground disturbing or intrusive activities will be conducted are coordinated with UXO-qualified personnel so that discoveries of potential MEC are handled appropriately.

- **Restrictions against residential use:** to prevent residential development on the Del Rey Oaks MRA until modifications to residential restrictions are approved by DTSC with an opportunity to comment by EPA and the Army. For the purpose of this ROD, residential use includes, but is not limited to, residences, day care facilities that do not have measures to prevent contact with soil, schools for persons under 21 years of age, and hospitals (other than veterinary hospitals).

The Army and the City of Del Rey Oaks will maintain these LUCs until EPA and DTSC concur that the site is protective of human health and the environment without construction support and MEC recognition and safety training on the basis of: (1) further site evaluation incorporating new information (e.g., limited geophysical mapping, site development) and/or (2) where, using construction support, it is determined that the depth of soil disturbance related to development activities is sufficient to address the uncertainty of MEC remaining in soil and any MEC found as part of the development are removed.

The residential use restriction for the central portion of the Del Rey Oaks MRA is no longer required and therefore the existing restrictions on the central portion of the Del Rey Oaks MRA can be modified. DTSC intends to modify the Del Rey Oaks State Covenant to Restrict Use of Property. The residential use restriction for the remainder (the northern and southern portions) of the Del Rey Oaks MRA would be modified to allow for residential use, as appropriate, once DTSC has verified that the Residential Protocol has been successfully implemented. Any proposal for residential development in the Del Rey Oaks MRA where this restriction applies will be subject to regulatory review. Residential use for these specified areas will be prohibited until: (1) the City of Del Rey Oaks (the current land owner) notifies the Army, EPA and DTSC in writing of its intent to change the designated site use from recreational/commercial to residential, in advance; and (2) DTSC concurs that residential use is appropriate based on successful

implementation of the Residential Protocol or further site evaluation incorporating new information (e.g., geophysical mapping, site development).

The selected LUCs will be explained in more detail in the RD/RAWP. The RD/RAWP will also include plans for implementing, monitoring, and enforcing the selected LUCs. As part of the implementation plan, the RD/RAWP will also describe the following long-term management measures:

Federal Deed: The property has already been transferred. The deed will be modified to be consistent with the final remedy to expressly prohibit activities inconsistent with the performance measure goals and objectives. The Federal deed also includes instructions for reporting possible MEC items if such is found on the property.

Covenants to Restrict Use of Property (CRUPs): The Army entered into a State Covenant to Restrict Use of Property at the time the property was transferred. After this ROD is signed, the existing State Covenant to Restrict Use of Property will be modified, if appropriate, to be consistent with the final remedy to expressly prohibit activities inconsistent with the performance measure goals and objectives. The applicability of, and requirements for CRUPs, are described in California Code of Regulations Section 67391.1 and California Civil Code Section 1471.

Annual monitoring and reporting: Annually, pursuant to the Del Rey Oaks – DTSC Agreement, the City of Del Rey Oaks, as property owner, will submit a report to the regulatory agencies of any MEC finds or changes in site conditions that could increase the possibility of encountering MEC. The annual letter reports will be provided to EPA and DTSC. If MEC is encountered during reuse, then (1) a MEC incident report will be submitted; (2) the City of Del Rey Oaks will notify the Army, EPA, and DTSC, as soon as practicable; and (3) the Army, EPA, and DTSC will assess the need for re-evaluation of the protectiveness of the current remedy for the area. It should be noted that there are similar monitoring and reporting requirements in the DTSC/FORA Memorandum of Agreement.

Five-year review reporting: Five-year reviews will be conducted in accordance with CERCLA Section 121(c) and the Fort Ord FFA. In its review, the Army will consider the information provided in the annual letter reports. The five-year reviews will evaluate the protectiveness of the selected remedy. Based on the evaluation, the selected LUCs may, with regulatory approval, be modified or terminated.

The standard procedure for reporting any encounter with a known or suspected military munitions (UXO, DMM) item in transferred former Fort Ord property is to report the encounter immediately to local law enforcement. The local law enforcement agency will promptly request DoD support for response (e.g., an EOD unit). If the response involves a MEC item the Army will reassess the probability of encountering MEC and notify EPA and DTSC. If Army and EPA, in consultation with DTSC, determine that the probability of encountering MEC remains low, construction may resume with construction monitoring. If Army and EPA, in consultation with DTSC, determine that the probability is moderate or high, then a MEC removal will be conducted in the construction footprint before construction can resume. Pursuant to the Del Rey Oaks – DTSC Agreement, the City of Del Rey Oaks will immediately notify the Army, EPA and DTSC if any MEC or MEC-like item is found at the site. The Army will also conduct five-year reviews, and will review and consider this information during the five-year reviews. If, upon such review, any additional evaluation or work, or modification of the remedy is proposed, the Army will submit the proposal to EPA and DTSC for consultation, consistent with Section 27.2 of the FFA.

The Army is responsible for implementing, monitoring, maintaining, enforcing, and reporting on LUCs. Although the Army transferred procedural responsibilities to the City of Del Rey Oaks, the Army shall retain ultimate responsibility for remedy integrity. Future landowners are responsible for acting in accordance with the LUCs as specified in the CRUP and the deed(s).

Pursuant to Section 8.3 of the FFA, within 21 days of issuance of this ROD, the Army will submit to EPA and DTSC proposed deadlines for submitting the RD/RAWP. The RD/RAWP will be subject to EPA and DTSC review in accordance with the FFA and will include implementation and maintenance actions, and periodic inspections.

2.14.3. Summary of the Estimated Remedy Costs

For the purposes of evaluating and comparing alternatives as specified in EPA's Remedial Investigation/Feasibility Study Guidance (*EPA, 1989*), a period of 30 years is used for estimating long term operations and maintenance (O&M) costs for those alternatives whose life-cycle is indeterminate or exceeds 30 years. For the Del Rey Oaks MRA, 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 the selected remedy of *Conditions on Soil Disturbance Activities to Minimize MEC Exposure and Residential Use Restrictions Including Contingency to Address Proposed Change in Site Reuse* under Remedial Alternative 3 are estimated at a total of approximately $67,000 for the entire Del Rey Oaks MRA. Capital and long term O&M costs for implementing and maintaining Long Term Management Measures (State Covenant to Restrict Use of Property, Federal Deed, Annual Letter Reporting, Five-Year Review Reporting) are estimated at approximately $97,000 for the entire Del Rey Oaks MRA. Therefore, the total estimated 30-year Net Present Value cost of the remedy is approximately $164,000. The following costs are assumed by the property owner/developer (City of Del Rey Oaks): (1) annual letter reporting pursuant to the Del Rey Oaks —DTSC Agreement; (2) construction support within the entire Del Rey Oaks MRA (except for depths greater than four ft bgs in the 11-Grid Area, which are Army costs) pursuant to the Del Rey Oaks —DTSC Agreement; and (3) application of DTSC's Residential Protocol in applicable areas. Long term O&M costs are based on a 3.1 percent real interest rate. A detailed, activity-based breakdown of the estimated costs associated with implementing and maintaining the remedy is provided in the Del Rey Oaks MRA Feasibility Study (*MACTEC, 2007*).

2.14.4. Expected Outcomes of Selected Remedy

The expected outcomes of the selected remedy would be protection of human health and the environment through implementation of *Conditions on Soil Disturbance Activities to Minimize MEC Exposure and Residential Use Restrictions Including Contingency to Address Proposed Change in Site Reuse*. These conditions will be maintained by the developer/property owner to protect subsequent landowners and reusers conducting ground disturbing or intrusive activities on the property, except in the approximately 2.5 acre 11-Grid Area, where the Army will be responsible for construction support at depths greater than four feet bgs.

If residential development is planned for the Del Rey Oaks MRA, the plans will be subjected to regulatory review. Residential use for specified areas will be prohibited until the landowner (currently the City of Del Rey Oaks) provides advance notification to the Army, EPA, and DTSC of its intent to change a designated area's use to residential, and until DTSC concurs that residential use is appropriate. DTSC's evaluation may consider the Residential Protocol or further site evaluation incorporating new information (e.g., geophysical mapping, site development).

2.15. Statutory Determinations

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

- Protection of Human Health and the Environment: The selected remedy provides protection for both human health and the environment through implementation of LUCs (conditions and restrictions) to mitigate the risk from any MEC that potentially remains present.

- Compliance with Applicable or Relevant and Appropriate Requirements: Although the Army determined that there were no potential Federal or State ARARs that relate to LUCs at the Del Rey Oaks MRA, LUCs will be implemented in a manner consistent with applicable Federal and State guidance. While the Army does not consider California laws and regulations concerning Land Use Covenants to be potential ARARs, the Army entered into a State Covenant to Restrict Use of Property at the time the property was transferred, and after the Del Rey Oaks MRA ROD is signed, the existing covenant will be modified, if appropriate, to document the land use restrictions included in the selected remedy. Although DTSC and EPA Region IX disagree with the Army's determination that California laws and regulations concerning Land Use Covenants are not potential ARARs, they will agree-to-disagree on this issue since the Army executed the State Covenant to Restrict Use of Property and agrees that it will be modified, to be consistent with the selected remedy, in a manner acceptable to DTSC.

- Cost Effectiveness: The selected remedy is a cost-effective solution for reducing risks to human health and the environment. The net present value of the total estimated costs (including Long Term Management Measures costs of $97,000) are $97,000 for the No Action alternative (Alternative 1 has no costs associated with its implementation), and approximately $164,000 for both the selected remedy of *Conditions on Soil Disturbance Activities to Minimize MEC Exposure and Residential Use Restrictions Including Contingency to Address Proposed Change in Site Reuse* (Alternative 3), and *Conditions on Soil Disturbance Activities to Minimize MEC Exposure* (Alternative 2).

- Use of Permanent Solutions and Alternative Treatment (or Resource Recovery) Technologies to the Maximum Extent Practicable: The principal threats at the Del Rey Oaks MRA have already been treated (i.e., MEC removal actions) using 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 Del Rey Oaks MRA have already been treated (i.e., MEC removal actions have been conducted), 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 present at the Del Rey Oaks MRA, a statutory review will be conducted 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 any contamination that might be left at the site. The next five-year review will occur in 2012.

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

As described in Section 2.4., the Proposed Plan for the Del Rey Oaks MRA was released for public comment on August 31, 2007, and a public meeting was held on September 12, 2007. This Proposed

Plan identified a preferred remedial alternative for the Del Rey Oaks MRA that has been selected as the final remedy in this ROD. Comments collected over the 60-day public comment period between August 31 and October 30, 2007 did not identify significant changes to the conclusions or procedures outlined in the Del Rey Oaks MRA Remedial Investigation/Feasibility Study and Del Rey Oaks MRA Proposed Plan.

3. RESPONSIVENESS SUMMARY

This Responsiveness Summary is organized as follows:

- Section 3.1.—Overview;
- Section 3.2.—Background on Community Involvement;
- Section 3.3.—Summary of Comments Received During the Public Comment Period and Department of the Army Responses.

3.1. Overview

In the *Final Del Rey Oaks Munitions Response Area Remedial Investigation/Feasibility Study, Former Fort Ord, California*, dated August 24, 2007, and the Proposed Plan for the Del Rey Oaks MRA, dated August 27, 2007, the Army identified a preferred remedial alternative, *Remedial Alternative 3: Conditions on Soil Disturbance Activities to Minimize MEC Exposure and Residential Use Restrictions Including Contingency to Address Proposed Change in Site Reuse*. That alternative is documented as the selected remedy in this ROD and provides that:

- MEC recognition and safety training within the 11-Grid Area in the Range 26 berm area will be provided by the Army;
- Site-wide construction support:

  -- Construction support in the 11-Grid Area below four feet bgs will be provided by the Army.

  -- Construction support everywhere else within the Del Rey Oaks MRA will be provided by the City of Del Rey Oaks (the current land owner).

- Residential use restrictions in the northern and southern portions of the MRA.

In addition, Long Term Management Measures considered as implementation and management aspects of the remedial alternatives, rather than as specific mitigation measures, will also be implemented, including the State Covenant to Restrict Use of Property, a Federal deed, annual letter reporting, and five-year review reporting.

3.2. Background on Community Involvement

In 1991, the former Fort Ord was added to the Base Realignment and Closure (BRAC) list. The economic impact of the former Fort Ord's closure has created much community interest regarding the potential economic reuse of portions of the former Fort Ord. The Del Rey Oaks MRA is currently undeveloped; the City of Del Rey Oaks plans to develop the site for commercial and recreational uses. Residential reuse within portions of the Del Rey Oaks MRA is also being considered.

Focused community involvement regarding the Proposed Plan has most recently involved the public's review of the Army's Proposed Plan for the Del Rey Oaks MRA. The notice of the availability of the Proposed Plan was published in the *Monterey County Herald* and the *Salinas Californian* on August 30, 2007. A 30-day public comment period began August 31, 2007 and was extended to 60 days at the request of the public, closing on October 30, 2007. In addition, a public meeting was held on September

12, 2007 to present the Proposed Plan to a broader community audience than those 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. Copies of the comments received on the Proposed Plan and a transcript of the public meeting are available in the former Fort Ord Administrative Record, and on the website www.fortordcleanup.com.

This Responsiveness Summary responds to written comments received during the public comment period as well as oral comments expressed during the public meeting conducted on September 12, 2007.

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

Public comments submitted during the Del Rey Oaks MRA 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 September 12, 2007; and (2) in written comments received during the 60-day public comment period from August 31 to October 30, 2007.

Comment 1: Several members of the public requested a 30-day extension to the public comment period for the Del Rey Oaks MRA Proposed Plan.

Response: A 30-day public comment period began on August 31, 2007 and was extended to 60 days at the request of the public, closing on October 30, 2007. Comments made during the public comment period and at the Proposed Plan public meeting on September 12, 2007 are addressed within this Responsiveness Summary. Copies of the comments received on the Proposed Plan, and a transcript of the public meeting are available in the former Fort Ord Administrative Record, and on the web site www.fortordcleanup.com.

Comment 2: A general comment was made that questioned how public input on the Army's cleanup decisions at the former Fort Ord was used, and requested that the Army provide examples of where and when public comments have made a difference in the Army's cleanup decisions.

Response: 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 that are considered and incorporated in decision documents. Public comments are considered before any action is selected and approved. The Army in conjunction with the regulatory agencies, takes all comments into consideration and responds and incorporates changes as appropriate. A recent example of how and when public comments made a difference in the remedy selected by the Army for implementation occurred in 2006. The Army issued a Proposed Plan for Munitions Response Site 16 (MRS-16) that proposed to eliminate the temporary voluntary relocation program during the prescribed burn from the proposed remedy. In response to public comments requesting that the Army continue the temporary relocation program for the prescribed burn, and in coordination with the regulatory agencies, the Army revised the proposed remedy for MRS-16, and the selected remedy included the temporary relocation program.

Comment 3: Several comments were made regarding the uncertainties in the completeness of the MEC cleanup conducted at the Del Rey Oaks MRA over many years, which consisted of several phases of MEC removals to varying depths. Although the limitations on the accuracy of current MEC detection and removal methodologies were acknowledged, concerns were raised that the previous removal actions conducted and detection equipment used by the Army did not extend to

the maximum possible detection depth or identify all potential MEC that may be present. A request was made for the Army to provide maps showing the areas and depths where the Army removed 100% of the unexploded ordnance (UXO). Suggestions were also made that additional variations on the remedial alternatives should have been considered to address the uncertainty and risk, rather than implementing long term land use controls and measures, such as 100% confidence cleanups to 9 foot depths or to the maximum depth everywhere for UXO, and an additional geophysical survey in the 11-Grid Area that could provide better assurances regarding the risk from MEC that potentially remains present. In addition, a question was posed whether the implementability of Alternatives 2 and 3 should be described differently in Table 3 of the Proposed Plan that summarized the evaluation of alternatives.

Response: The Army acknowledges public concerns regarding the uncertainties in the completeness of the MEC cleanup conducted at the Del Rey Oaks MRA, and recognizes that MEC detection at the Del Rey Oaks MRA could not be shown to be 100 percent effective throughout the subsurface due to equipment limitations, site conditions, etc. However, the entire Del Rey Oaks MRA was investigated and all detected MEC was removed. Maps and data tables describing the areas and depths where UXO and other MEC items and MD were detected and removed were provided in the Del Rey Oaks MRA Remedial Investigation/Feasibility Study. The work also included Quality Control and Quality Assurance requirements to evaluate the adequacy of the MEC removal actions. These munitions response actions were designed to address MEC to depths of four feet bgs; however, even anomalies (i.e., ferromagnetic material) deeper than four feet bgs, were investigated, and all detected MEC was removed within the Del Rey Oaks MRA regardless of the depth. Although MEC is not expected at the Del Rey Oaks MRA because all detected MEC was investigated and removed, the Army acknowledges that it is likely that some MEC was not detected and remains onsite. Therefore, to manage the risk to future land users from MEC that potentially remains in the property, remedial action alternatives were evaluated for the Del Rey Oaks MRA.

As described in the Del Rey Oaks Remedial Investigation/Feasibility Study, as stated in the EPA's *Land Use in the CERCLA Remedy Selection Process* (*EPA, 2000*), "*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 300.43.0 (a)(l)(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….*" In keeping with EPA's guidance: (1) the principal threats at the Del Rey Oaks MRA have already been treated (i.e., MEC removal actions have been conducted), and (2) institutional controls (referred to as land use controls or LUCs) were considered in the development of alternatives for managing the risk from MEC that potentially remains at the site.

The Army and regulatory agencies have determined that development and reuse at the Del Rey Oaks MRA can occur safely with the selected remedy (i.e., *Conditions on Soil Disturbance Activities to Minimize MEC Exposure and Residential Use Restrictions Including Contingency to Address Proposed Change in Site Reuse*). To manage the risk to future land users from MEC that potentially remains in the property, the selected remedy also includes the following land use controls (LUCs): (1) MEC recognition and safety training for reusers conducting ground disturbing or intrusive activities; (2) construction support by UXO-qualified personnel during ground disturbing or intrusive activities, such as soil excavation or movement; and (3) restrictions against residential use. After this ROD documenting the selected remedy is signed, a RD/RAWP will be developed to: (1) outline the processes for implementing the conditions on soil disturbance activities identified in the remedy; and (2) identify procedures for

responding to unexpected circumstances, such as a future discovery of MEC in the Del Rey Oaks MRA. These conditions may be modified in the future based on the five-year review process.

Regarding the question whether the implementability of Alternatives 2 and 3 should be different, under the CERCLA evaluation criteria, the technical and administrative aspects of the Army implementing the remedy would be the same. The components of these two alternatives are the same; the only difference is that Alternative 3 also includes the "*Contingency to Address Proposed Change in Site Reuse"* that would allow for the property owner (City of Del Rey Oaks) to change the current site reuse (described in Alternative 2) if certain conditions are met, that are consistent with the selected remedy, in a manner acceptable to DTSC.

Comment 4: A comment was made that DTSC imposed a State Covenant to Restrict Use of Property for early transfer of the property to the City of Del Rey Oaks with residential use restrictions because of the uncertainty of how much ordnance still remains. The comment also stated that the original covenant allows for the development and occupation of condominiums, with the assumed premise that condominium occupants would be temporary residents and not likely to dig below the surface. However, gardeners and maintenance workers for the condominiums could be exposed to MEC, so it is not appropriate to put in condominiums if there is a residential restriction. A concern was also expressed that meetings have been held outside Monterey County with the Army, agencies, and developer to make preliminary determinations about lifting safety precautions and allowing residential use on this property after performing an additional partial cleanup. A request was also made for the Army to provide the total cost of the cleanup for the Del Rey Oaks MRA to date.

Response: The Army entered into a State Covenant to Restrict Use of Property with DTSC, which was agreed to by the City of Del Rey Oaks, at the time the property was transferred, which included residential use restrictions. The Covenant excluded the following types of use for the entire Del Rey Oaks MRA: residential use, day care facilities that do not prevent contact with soil, schools for persons under 21 years of age, and hospitals (other than veterinary hospitals). Condominiums have not been developed at the site; however, residential development, potentially including condominiums, is planned in the future. After this ROD is signed, the existing State Covenant to Restrict Use of Property will be modified to be consistent with the final remedy to expressly prohibit activities inconsistent with the performance objectives. The selected remedy also includes the following land use controls (LUCs): (1) MEC recognition and safety training for reusers conducting ground disturbing or intrusive activities; (2) construction support by UXO-qualified personnel during ground disturbing or intrusive activities, such as soil excavation or movement; and (3) restrictions against residential use. Restrictions against residential use will prevent residential development in the northern and southern portions of the Del Rey Oaks MRA until modifications to residential restrictions are approved by DTSC with an opportunity to comment by EPA and the Army. For the purpose of this ROD, residential use includes, but is not limited to, residences, day care facilities that do not have measures to prevent contact with soil, schools for persons under 21 years of age, and hospitals (other than veterinary hospitals).

The above conditions on soil disturbance activities, excluding the residential use restrictions, will be maintained by the Army and City of Del Rey Oaks until EPA and DTSC concur that the site is protective of human health and environment without construction support and MEC recognition and safety training on the basis of: (1) further site evaluation incorporating new information (e.g., limited geophysical mapping, site development) and/or (2) where, using construction support, it is determined that the depth of soil disturbance related to development activities is sufficient to address the uncertainty of MEC remaining in soil and any MEC found as part of the development are removed.

A residential use restriction is no longer required in for the central portion of the MRA; therefore, the existing restrictions for this portion of the MRA will be modified. The residential use restriction on the remainder of the Del Rey Oaks MRA will be modified to allow for residential use, as appropriate, once DTSC has verified that the Residential Protocol has been successfully implemented. Any proposal for residential development in the Del Rey Oaks MRA where this restriction applies will be subject to regulatory review. Residential use for these specified areas will be prohibited until: (1) the City of Del Rey Oaks (the current land owner) notifies the Army, EPA and DTSC in writing, in advance of its intent to change the designated site use from recreational/commercial to residential; and (2) DTSC concurs that residential use is appropriate based on successful implementation of the Residential Protocol or further site evaluation incorporating new information (e.g., geophysical mapping, site development).

Regarding the concern expressed that meetings have been held outside Monterey County to make preliminary cleanup decisions, the development and evaluation of remedial alternatives and decisions regarding selection of the remedy were conducted under the CERCLA process and with public and regulatory agency involvement and meetings, as summarized in the Proposed Plan.

Regarding the request for the Army to provide the total cost of the cleanup for the Del Rey Oaks MRA to date, over the two phases of work during which MEC removals were conducted at the site, the Army estimates the cost at approximately $4.5 million.

Comment 5: A comment was made that 'notes' have indicated the presence of tanks within the Del Rey Oaks MRA, and this information was not included in the Remedial Investigation/Feasibility Study analysis.

Response: Based on the Army's archival, historical, and MEC-related data evaluation conducted in the Del Rey Oaks MRA Remedial Investigation/Feasibility Study, there was no evidence regarding the presence or use of tanks at the site. Regarding the comment suggesting that tanks may have been present at the site, it is the Army's current understanding that if tanks were used onsite, they would have been present for use as targets in areas where anti-tank training was conducted, and were not operational in terms of being a potential source of MEC. The entire Del Rey Oaks MRA was investigated and all detected MEC was removed as described in the Del Rey Oaks MRA Remedial Investigation/Feasibility Study. The work also included Quality Control and Quality Assurance requirements to evaluate the adequacy of the MEC removal actions, regardless of the use of tanks or other types of targets or equipment uses at the site. The Army and regulatory agencies have determined that development and reuse at the Del Rey Oaks MRA can occur safely with the selected remedy (i.e., *Conditions on Soil Disturbance Activities to Minimize MEC Exposure and Residential Use Restrictions Including Contingency to Address Proposed Change in Site Reuse*) to manage the risk to future land users from MEC that potentially remains in the property.

Comment 6: A comment was made that a process-oriented conceptual site model that looks at a wide range of factors beyond the 'operational' Track model used at the former Fort Ord, was presented in the Stockholders Report, Oakridge, TN Reservation, and may provide value to the community in understanding all the aspects of the overall cleanup process.

Response: The conceptual site model used for the different Tracks under the MMRP program for the former Fort Ord (and for Track 2 sites such as the Del Rey Oaks MRA) was developed based on CERCLA requirements; in cooperation with the regulatory agencies; and using site-specific data related to the MEC cleanup process. The Army appreciates the information regarding the referenced document, and will continue to strive to provide clear information to the community regarding the MEC cleanup process as part of the community participation and involvement process at the former Fort Ord.

Comment 7: Several people expressed concerns that chemicals in soil from munitions and lead from small arms ammunition, and small caliber items may still remain in portions of the site. It was also suggested that the cleanup evaluation for the site should be updated/reevaluated regarding non-MEC related contamination. There were also questions regarding the definition of MEC, and whether it includes small caliber items.

Response: The Del Rey Oaks MRA Remedial Investigation/Feasibility Study and Proposed Plan only address the physical, explosives risk from MEC. Potential human health and ecological risks related to any soil contamination from small arms and small caliber items (less than .50 caliber), and military munitions ranges are being addressed under the Basewide Range Assessment and the Site 39 Feasibility Study Addendum, which are components of the Hazardous Toxic Waste (HTW) Remedial Investigation/Feasibility Study program, separate from the Munitions Response (MR) Remedial Investigation/Feasibility Study program. No restrictions related to munitions constituents in soil were recommended following completion of both a soil removal action and post remediation risk assessment.

For clarification purposes, as described in the Del Rey Oaks MRA Remedial Investigation/Feasibility Study and Proposed Plan Glossaries of Munitions Responses Program (MRP) terms, and for all MR Remedial Investigation/Feasibility Study sites at the former Fort Ord, Munitions and Explosives of Concern (MEC) are defined as follows:

"Distinguishes specific categories of military munitions that may pose unique explosives safety risks, such as: UXO, as defined in 10 U.S.C. 101 (e) (5); discarded military munitions, as defined in 10 U.S.C. 2710 (e) (2); or munitions constituents (e.g., TNT, Cyclotrimethylene trinitramine [RDX]), as defined in 10 U.S.C. 2710 (e) (3), present in high enough concentrations to pose an explosive hazard. (*Source: Department of Defense Explosive Safety Board Technical Paper 18 (Minimum Qualification for Unexploded Ordnance [UXO]. Technicians and Personnel). December 20, 2004.*)

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

Comment 8: A question was raised whether a large part of the ordnance removed from the Del Rey Oaks MRA has been placed in the Ft Ord landfills.

Response: The Army did not place any MEC or MD generated from the Del Rey Oaks MRA munitions response actions in the Fort Ord Operable Unit 2 (OU2) landfill. Any MEC encountered during response actions at the Del Rey Oaks MRA were destroyed by detonation. All recovered MD generated during the response actions was transported offsite to a certified recycler after being inspected and determined not to pose an explosive hazard. Lead contaminated soils and spent small arms bullets from portions of the Del Rey Oaks MRA that occur within Site 39 were removed during the remediation of soil contamination at ranges associated with that site, and are the only materials placed in the OU2 landfill that were removed from the Del Rey Oaks MRA.

Comment 9: The MEC recognition and safety training the Army conducts is an important part of the remedy, and should be required for all workers performing intrusive activities at the Del Rey Oaks MRA.

Response: At the former Fort Ord, MEC recognition and safety training is recommended and available for anyone who requests it as a reasonable precaution. In areas such as the Del Rey Oaks MRA, this training is offered to anyone upon request, and the Army will require MEC safety training for all workers conducting ground disturbing or intrusive activities within the 11-Grid Area at depths below four feet bgs, where greater uncertainty remains regarding the potential for MEC to remain. It should be

noted that, pursuant to the Del Rey Oaks —DTSC Agreement, no soil disturbance may begin until the Army safety training, or equivalent, has been provided to all construction workers involved in soil disturbance. Based on the results of the Del Rey Oaks MRA Remedial Investigation/Feasibility Study, these and other Land Use Controls (LUCs) (e.g., site-wide construction support) are intended to address the risk to future property users, and will be in place indefinitely unless periodic reviews indicate that they are no longer necessary.

Comment 10: A comment was made that the *Installation-Wide Multispecies Habitat Management Plan for Former Fort Ord, California* (HMP) should be completed for the Del Rey Oaks MRA, and a biological opinion is needed.

Response: The *Installation-Wide Multispecies Habitat Management Plan for Former Fort Ord, California* (HMP; *USACE, 1997*) for the former Fort Ord has been completed. The HMP and additional requirements (*USFWS, 1999, 2002, 2005)* prescribe certain management actions and mitigation measures for predisposal actions (environmental cleanup and munitions response) at the former Fort Ord. The Del Rey Oaks MRA is within an area designated for development, and portions of the Del Rey Oaks MRA are identified as Borderland Development Areas along a Natural Resources Management Area (NRMA) Interface in the HMP. The 2005 Biological Opinion issued by the U.S. Department of the Interior, Fish and Wildlife Service (USFWS) (*USFWS, 2005)* addresses requirements of the Endangered Species Act (ESA) for reuse of the Del Rey Oaks MRA property. Therefore, future property owner(s) must comply with specific use restrictions and/or conservation, management, monitoring and reporting requirements, as outlined in the early-transfer Deed. As part of the environmental review process, the City of Del Rey Oaks issued the *Draft Initial Study and Mitigated Negative Declaration for the City of Del Rey Oaks Housing Element and Amendments to the General Plan, Redevelopment Plan, and Zoning Ordinance* in 2006 (*Duffy & Associates, 2006*); however, the City of Del Rey Oaks is now preparing an Environmental Impact Report for that project.

Comment 11: A comment was made that the Del Rey Oaks MRA ROD should clarify that the Federal deed will be modified, consistent with the selected remedy, so that: (1) residential use without further regulatory action is permitted in the central portion of the property; and (2) residential use on the remainder of the property is permitted so long as implementation of the Residential Protocol has been successfully verified or based on further site evaluation by DTSC.

Response: Comment acknowledged. Sections 1.4., 2.5., and 2.14. of this ROD include a description of the deed modifications that are consistent with the commenter's concerns and will be implemented under the selected remedy.

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Footnote: Identifiers that appear in [brackets] at the end of a reference are the Fort Ord Administrative Record number for that document.

TABLES

Table 1. Summary of Munitions Response Site Investigations
Record of Decision, Del Rey Oaks Munitions Response Area,
Former Fort Ord California

MRS Site Number	Acreage*	Historical Ranges within MRS Boundary	MEC and/or MD Removed	Site Investigation Status**
MRS-15 DRO 01	272	Ranges 24, 25, and 26, AR Table VIII Range, Machine Gun Familiarization Range, Austin Anti-tank Range.	Practice rockets, various projectiles up to 76mm (including illumination and practice), practice antitank and smoke rifle grenades, hand grenades and hand grenade fuzes (including practice), practice trench mortars, ground signals, antitank mine fuzes (including practice).	4-foot removal complete.
MRS-15 DRO 02	34	Range 26 (portion).	2.36-inch practice rockets, 37mm and 40mm projectiles, hand grenades and hand grenade fuzes (including practice), ground signals.	4-foot removal complete.
MRS-43 (portion)	18	No known ranges.	Practice antitank rifle grenades, hand grenade fuzes (including practice), 37mm projectiles.	4-foot removal complete.

* The acreage is of the portion of the MRS site contained within the Del Rey Oaks MRA. The Del Rey Oaks MRA Contains only a portion of MRS-43, but contains all of MRS-15 DRO 01 and MRS-15 DRO 02.

** Anomalies deeper than four feet bgs were also intrusively investigated.

Table 2. Summary of Del Rey Oaks MRA Transfer Parcels
Record of Decision, Del Rey Oaks Munitions Response Area,
Former Fort Ord California

Transfer Parcel	Acres	Planned Use*
E29a	272	Visitor Serving Center / Business Park
E29b.1	34	Right-of-Way / Business Park / Light Industrial /Office Park
E31a	5	Business Park / Light Industrial / Office Park
E31b	3	Business Park / Light Industrial / Office Park
E31c	4	Business Park / Light Industrial / Office Park
E36	6	Business Park / Light Industrial / Office Park

* Planned use information from the *Finding of Suitability for Early Transfer (FOSET)* (*Army, 2004*).

Table 3. Summary of Remedial Alternatives Evaluation and Comparison
Record of Decision, Del Rey Oaks Munitions Response Area,
Former Fort Ord California

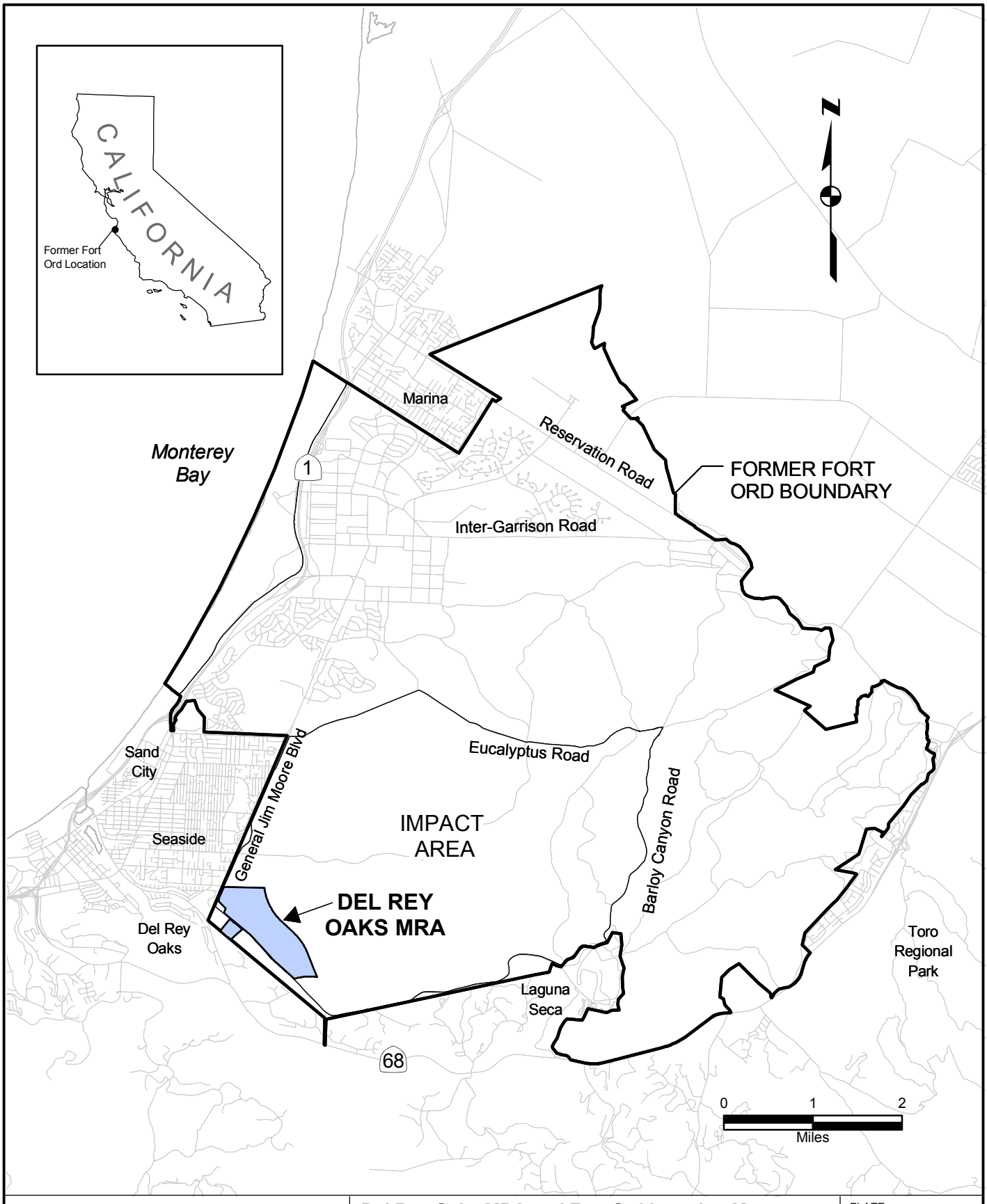
REMEDIAL ALTERNATIVE	EPA's 9 CERCLA EVALUATION CRITERIA								
	Threshold Criteria		Balancing Criteria					Modifying Criteria	
	Overall Protection of Human Health & Environment	Compliance with ARARs	Short-Term Effectiveness	Long-Term Effectiveness & Permanence	Reduction of Toxicity, Mobility, and Volume Through Treatment	Implementability	Total Cost*	State Acceptance	Community Acceptance
(1) No Further Action	Not protective. Does not mitigate the risk to future users from any MEC potentially remaining at the site	No ARARs were identified for this alternative**	Not effective. No MEC risk mitigation measures	Not effective. No MEC risk mitigation measures	Reduction has already taken place during munitions response actions that have been completed	Not administratively feasible	No costs	Not acceptable	Not acceptable based on public comments on the Proposed Plan
(2) Conditions on Soil Disturbance Activities to Minimize MEC Exposure	Protective. Mitigates risk to future users from any MEC potentially remaining at the site	No ARARs were identified for this alternative**	Effective. MEC recognition and safety training would be required during ground disturbing or intrusive activities in the 11-Grid Area, and site-wide construction support would be provided	Effective. MEC recognition and safety training would be required during ground disturbing or intrusive activities in the 11-Grid Area, and site-wide construction support would be provided	Reduction has already taken place during munitions response actions that have been completed	Administratively feasible Low level of effort to implement Moderate level of effort to maintain and administrate over time	$67,000	Acceptable for current reuse	Acceptable for current reuse based on public comments on the Proposed Plan
(3) Conditions on Soil Disturbance Activities to Minimize MEC Exposure and Residential Use Restrictions Including Contingency to Address Proposed Change in Site Reuse	Protective. Mitigates risk to future users from any MEC potentially remaining at the site	No ARARs were identified for this alternative**	Effective. MEC recognition and safety training would be required during ground disturbing or intrusive activities in the 11-Grid Area and site-wide construction support would be provided	Effective. MEC recognition and safety training would be required during ground disturbing or intrusive activities in the 11-Grid Area and site-wide construction support would be provided	Reduction has already taken place during munitions response actions that have been completed	Administratively feasible Moderate level of effort to implement for the reuser, but would allow unrestricted use Moderate level of effort to maintain and administrate over time	$67,000	Acceptable; accommodates the proposed change in reuse by the current property owner	Acceptable; accommodates the proposed change in reuse by the current property owner based on public comments on the Proposed Plan

Footnotes:

* These costs are in addition to an estimated $97,000 for Long Term Management Measures (State Covenant to Restrict Use of Property, Federal Deed, Annual Letter Reporting, Five-Year Review Reporting) for the entire Del Rey Oaks MRA. The following costs are assumed by the property owner/developer: (1) annual letter reporting; (2) construction support within the entire Del Rey Oaks MRA (except for depths greater than four ft bgs in the approximate 2.5 acre 11-Grid Area, which are included as Army costs above); and (3) application of DTSC's Residential Protocol in applicable areas.

** Although DTSC and EPA Region IX disagree with the Army's determination that California laws and regulations concerning Land Use Covenants are not potential ARARs, they will agree-to-disagree on this issue since the Army executed the State Covenant to Restrict Use of Property and agrees that it will be modified, to be consistent with the selected remedy, in a manner acceptable to DTSC.

PLATES



UNITED STATES DEPARTMENT OF THE ARMY	**Del Rey Oaks MRA and Fort Ord Location Map** Record of Decision Del Rey Oaks Munitions Response Area Track 2 Munitions Response Site Former Fort Ord, California		PLATE **1**
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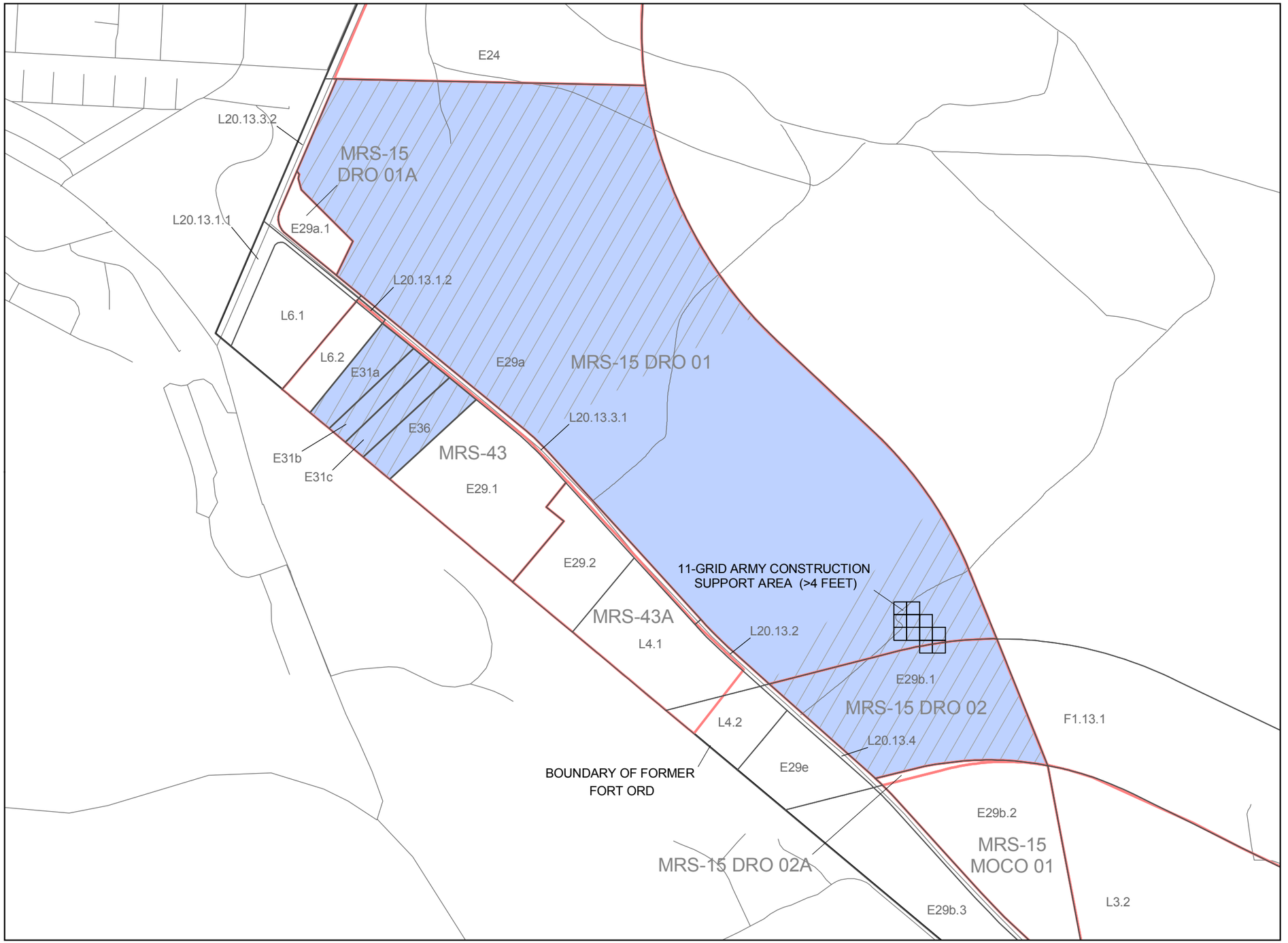

EXPLANATION

- Reuse Areas Evaluated in the Risk Assessment and Feasibility Study
- Areas Requiring Residential Use Restriction
- MRS Site Boundary

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DRAWN: TJH	PROJECT NO: 4088074345 12		**UNITED STATES DEPARTMENT OF THE ARMY**	Record of Decision Del Rey Oaks Munitions Response Area Track 2 Munitions Response Site Former Fort Ord, California	Del Rey Oaks Munitions Response Areas and Munitions Response Sites	PLATE **2**
ENGINEER:	SCALE: AS SHOWN					
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APPENDIX A

GLOSSARY OF MUNITIONS RESPONSE PROGRAM TERMS

APPENDIX A

Glossary of 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 Fort Ord. *Source:* (1).

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

Closed Range – A military range that has been taken out of service and either has been put to new uses that are incompatible with range activities or is not considered by the military to be a potential range area. A closed range is still under the control of a Department of Defense (DoD) component. *Source:* (2).

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, otherwise known as Superfund) – A Federal law that addresses the funding for and cleanup of abandoned or uncontrolled hazardous waste sites. This law also establishes criteria for the creation of decision documents such as the Remedial Investigation, Feasibility Study, Proposed Plan, and ROD. *Source:* (1).

Construction Support – Assistance provided by DoD, EOD or 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., 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: (5).

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, 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)). *Source*: (6).

For the purposes of the basewide Military Munitions Response Program 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:* (10).

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

Explosive Soil – Explosive soil refers to mixtures of explosives in soil, sand, clay, or other solid media at concentrations such that the mixture itself is explosive.

(a) The concentration of a particular explosive in soil necessary to present an explosion hazard depends on whether the particular explosive is classified as “primary” or “secondary.” Guidance on whether an explosive is classified as “primary” or “secondary” can be obtained from the MM CX.

(b) Primary explosives are those extremely sensitive explosives (or mixtures thereof) that are used in primers, detonators, and blasting caps. They are easily detonated by heat, sparks, impact, or friction. Examples of primary explosives include Lead, Azide, Lead Styphnate, and Mercury Fulminate.

(c) Secondary explosives are bursting and boostering explosives (i.e., they are used as the main bursting charge or as the booster that sets off the main bursting charge). Secondary explosives are much less sensitive than primary explosives. They are less likely to detonate if struck or when exposed to friction or electrical sparks. Examples of secondary explosives include Trinitrotoluene (TNT), Composition B, and Ammonium Picrate (Explosive D).

(d) Soil containing 10 percent or more by weight of any secondary explosive or mixture of secondary explosives is considered "explosive soil." This determination was based on information provided by the USAEC as a result of studies conducted and reported in USAEC Report AMXTH-TE-CR 86096.

(e) Soil containing propellants (as apposed to primary or secondary high explosives) may also present explosion hazards. (ER 1110-1-8153). *Source* (4).

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

Impact Area – The 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 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:* (11).

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:* (6).

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:* (8).

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 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 thereof.

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)). *Source:* (7).

Military Munitions Response Program (MMRP) – 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:* (3).

Munitions Constituents (MC) – Any materials originating from unexploded ordnance (UXO), discarded military munitions (DMM), or other military munitions, including explosive and nonexplosive materials, and emission, degradation, or breakdown elements of such ordnance or munitions (10 U.S.C. 2710 (e) (3)). *Source:* (6).

Munitions Debris – Remnants of munitions (e.g., fragments, penetrators, projectiles, shell casings, links, fins) remaining after munitions use, demilitarizations, or disposal. *Source* (7).

Munitions and Explosives of Concern (MEC) – Distinguishes specific categories of military munitions that may pose unique explosives safety risks, such as: UXO, as defined in 10 U.S.C. 101 (e) (5); discarded military munitions, as defined in 10 U.S.C. 2710 (e) (2); or munitions constituents (e.g., TNT, Cyclotrimethylene trinitramine [RDX]), as defined in 10 U.S.C. 2710 (e) (3), present in high enough concentrations to pose an explosive hazard. *Source:* (7).

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

MEC Sampling – Performing MEC searches within a site to determine the presence of MEC. *Source:* (1).

Munitions Response Area (MRA) – Any area on a defense site that is known or suspected to contain UXO, DMM, or MC. Examples are former ranges and munitions burial areas. A MRA comprises of one or more munitions response sites. *Source* (7).

Munitions Response Site (MRS) – A discrete location within MRA that is known to require a munitions response. *Source:* (7).

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 CERCLA. *Source:* (2).

Operating Grids – Typically, 100-foot by 100-foot parcels of land as determined by survey and recorded by Global Positioning System (GPS), marked at each corner with wooden stakes. Sites are divided into operating grids prior to the commencement of work by brush removal or OE sweep teams. A single grid may be occupied by only one team at any time, and the grid system facilitates the maintenance of safe distances between teams. They are identified sequentially using an alpha-numeric system (e.g., E-5). *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:* (3).

Proposed Plan – A plan that identifies the preferred alternative for a site cleanup, and is made available to the public for comment. *Source:* (2).

Range-Related Debris – Debris, other than munitions debris, collected from operational ranges or from former ranges (e.g., target debris, military munitions packaging and crating material). *Source:* (5).

Record of Decision (ROD) – A report documenting the final action, approved by the regulatory agencies, that is required at Superfund sites. *Source:* (2).

Remedial Investigation (RI) – Exploratory inspection conducted at a site to delineate the nature and extent of chemicals, and in this case OE, present at the site. *Source:* (2).

Removal Depth – The depth below ground surface to which all ordnance and other detected items are removed. *Source:* (1).

SiteStats/GridStats – Programs developed by QuantiTech for the Huntsville Corps of Engineers to predict the density of ordnance on sites with spatially random dispersal of ordnance. *Source:* (9).

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

Surface Removal – Removal of MEC from the ground surface by UXO teams using visual identification sometimes aided by magnetometers. *Source:* (1).

Track 2 Sites – Sites at the former Fort Ord where MEC items were present, and MEC removal has been conducted (i.e., Del Rey Oaks MRA). These areas are evaluated in area-specific Remedial Investigation/Feasibility Studies to assess whether they are in a protective state based on their reasonably anticipated future land uses. Possible outcomes of a Track 2 Remedial Investigation/Feasibility Study and ROD could include no further action, Land Use Controls (LUCs), and/or additional MEC removal. *Source:* (1).

Transferred Range – A military range that is no longer under military control and has been leased, transferred, or returned to another entity, including Federal entities. This includes a military range that is no longer under military control but was used under the terms of a withdrawal, executive order, special-use permit or authorization, right-of-way, public land order, or other instrument issued by the Federal land manager. *Source:* (2).

Transferring Range – A military range that is proposed to be leased, transferred, or returned from the DoD to another entity, including Federal entities. This includes a military range that is used under the terms of a withdrawal, executive order, special-use permit or authorization, right-of-way, public land order, or other instrument issued by the Federal land manager. An active range will not be considered a "transferring range" until the transfer is imminent. *Source:* (2).

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. (100 U.S.C. 101 (c)(5)). *Source:* (6).

For the purposes of the basewide Military Munitions Response Program 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 EOD positions, or are qualified to perform in the following Department of Labor, Service Contract Act, Directory of Occupations, contractor positions: UXO Technician II, UXO Technician III, UXO Safety Officer, UXO Quality Control Specialist or Senior UXO Supervisor. *Source:* (7)

Sources:

(1) Non-standard definition developed to describe Fort Ord-specific items, conditions, procedures, principles, etc. as they apply to issues related to the MEC cleanup.

(2) Management Guidance for the Defense Environmental Restoration Program published by the office of the Under Secretary of Defense (Installations and Environment), September 2001.

(3) "Unexploded Ordnance (UXO): An Overview", October 1996. DENIX.

(4) Ordnance and Explosives Response Engineer Manual (EM) 1110-1-4009. U.S. Army Corps of Engineers, June 15, 2007.

(5) Memorandum for the Assistant Chief of Staff for Installation Management, Subject: Munitions Response Terminology (April 21, 2005).

(6) Federal Register/Volume 70. No. 192/Wednesday, October 5, 2005/Rules and Regulations, 32 CFR Part 179, Munitions Response Site Prioritization Protocol, Department of Defense, Final Rule. October 2005.

(7) Department of Defense Explosive Safety Board Technical Paper 18 (Minimum Qualification for Unexploded Ordnance [UXO]. Technicians and Personnel). December 20, 2004.

(8) Survey of Munitions Response Technologies, June 2006. ITRC with ESTCP (Environmental Security and Technology Certification Program) and SERDP (Strategic Environmental Research and Development Program).

(9) Evaluation of Statistical Methodologies used in U.S. Army Ordnance and Explosive Work September 1999. Ostrouchov, George, Zimmerman, Gregory P., Beauchamp, John J., Federov, Valerii V., and Downing, Darryl J. Prepared by Oak Ridge National Laboratory for the U.S Army Engineering and Support Center.

(10) Compendium of Department of Defense Acronyms, Terms, and Definitions. The Interstate Technology and Regulatory Council (ITRC) Work Group (Unexploded Ordnance Work Team), December 2000.

(11) 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.