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## Superfund Proposed Plan

# Remedial Action is Proposed For Del Rey Oaks Munitions Response Area, Track 2 Munitions Response Remedial Investigation / Feasibility Study, Former Fort Ord, California

United States Department of the Army

August 27, 2007

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## INTRODUCTION

The United States Department of the Army (Army) is presenting this **Proposed Plan\*** for the public to review and comment on regarding cleanup of the Del Rey Oaks **Munitions Response Area (DRO MRA)**, one of the Track 2 Munitions Response **Remedial Investigation/Feasibility Study** sites (Track 2 MR RI/FS sites) at the former Fort Ord Army base in Monterey County, California (**Figure 1**). Specifically, this Proposed Plan identifies the **Preferred Remedial Alternative** of *Conditions on Soil Disturbance Activities to Minimize MEC Exposure and Residential Use Restriction Including Contingency to Address Proposed Change in Site Reuse* for managing the risk to future land users from any **Munitions and Explosives of Concern (MEC)** that potentially remain in the Del Rey Oaks MRA where MEC investigations and removal actions have been completed. Note: A removal action has been conducted on the entire area of the Del Rey Oaks MRA, and all detected MEC on or below ground surface was removed. The Del Rey Oaks property has already been transferred to the City of Del Rey Oaks through the early transfer process as documented in the Finding of Suitability for Early Transfer (FOSET, Army, 2004). The *Final Track 2 Munitions Response Remedial Investigation/Feasibility Study*,

*Del Rey Oaks Munitions Response Area, Former Fort Ord, California* (Del Rey Oaks MRA RI/FS; MACTEC, 2007) was prepared to complete the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)** or **Superfund** process for the site.

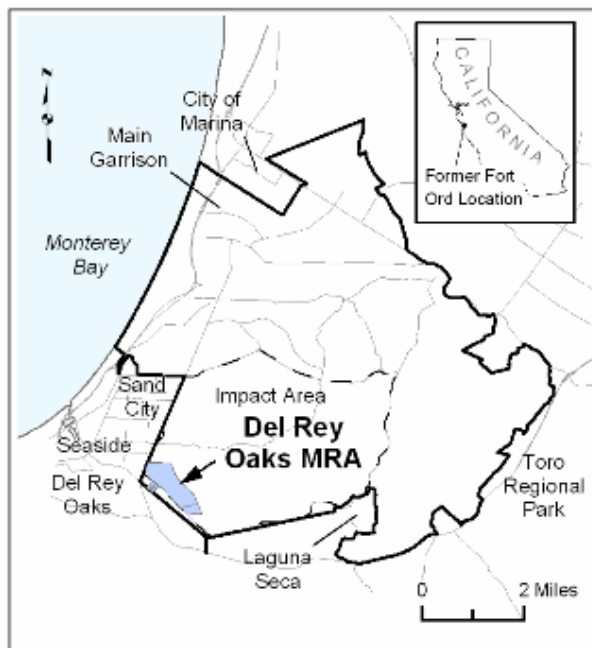


Figure 1. Del Rey Oaks MRA and Fort Ord Location Map

\* The terminology used in this Proposed Plan that first appears in **bold letters** is defined in the **Glossary** found at the back of this document on **pages 13 through 14**. References to **Figures, Tables, and page numbers** also appear in **bold letters**.

Dates to remember:  
**MARK YOUR CALENDAR**  
**PUBLIC COMMENT PERIOD:**  
**August 31 to September 30, 2007**

Comments on the Proposed Plan

**PUBLIC MEETING:**  
**September 12, 2007 6-8 pm**  
**at the Embassy Suites Hotel**  
**1441 Canyon Del Rey, Seaside, California**  
The Army will hold a public meeting to explain the Proposed Plan, listen to comments, and answer questions. Oral and written comments will also be accepted at the meeting.

Written comments may be sent to:

Department of the Army  
Fort Ord Base Realignment and Closure (BRAC)  
Office  
Attn: Gail Youngblood  
BRAC Environmental Coordinator  
P.O. Box 5008, Monterey, CA 93944-5008

This Proposed Plan is based on information presented in the Del Rey Oaks MRA RI/FS (MACTEC, 2007), as well as other documents in the Fort Ord **Administrative Record**. The Administrative Record contains documents used in making decisions for environmental cleanup projects at the former Fort Ord. The Army encourages members of the local community and other interested parties to review these documents and make comments on this Proposed Plan.

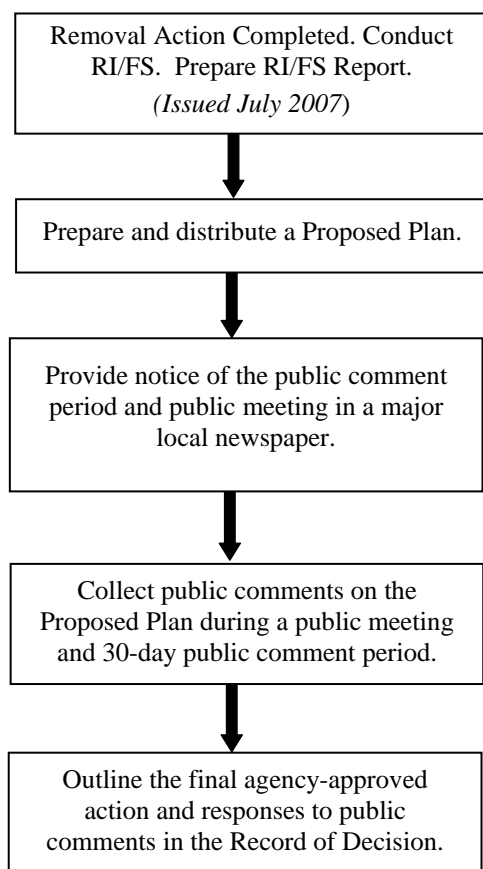
Public comments will be considered before any action is selected and approved. Information on how to comment on this document and the location of the Administrative Record are provided on **pages 11 and 12** of this Proposed Plan.

### What is a Track 2 Site?

Track 2 sites are those sites where MEC was found and a MEC removal action was conducted. The Track 2 site known as 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**. These MRSs were investigated and all detected MEC was removed.

Based on the investigation results, a non-time critical removal action was performed over portions of the Del Rey Oaks MRA. Following the non-time critical removal action, a geophysical investigation was conducted across the entire Del Rey Oaks MRA footprint and all detected MEC was removed. The work was conducted using multiple geophysical instruments, and parts of the Del Rey Oaks MRA were

investigated multiple times. The work also included Quality Control and Quality Assurance requirements to evaluate the adequacy of the removal action. These MEC removal activities were designed to address MEC to depths of four feet below ground surface (bgs). In addition, if anomalies (i.e. metallic material) were detected at depths greater than four feet bgs, the anomalies were investigated, and detected MEC was removed and destroyed. Therefore, MEC is not expected to remain at these MRSs. However, it is possible that some MEC was not detected and remains onsite. Therefore, the potential for a future land user to encounter MEC at the Del Rey Oaks MRA cannot be ruled out. Accordingly, the Army has evaluated **remedial alternatives** to address the risk to future land users from any MEC that might still remain at the site.



**Figure 2. Track 2 Del Rey Oaks MRA Record of Decision Process**

This Proposed Plan contains terms adopted by the Army for the overall Fort Ord **Military Munitions Response Program (MMRP)**, formerly known as the Fort Ord **Ordnance and Explosives (OE)** Cleanup Program. Military munitions terms used in this Proposed Plan are defined in the Glossary found on **pages 13 through 14**. Specifically, the term **munitions and explosives of concern (MEC)** is used in this Proposed Plan in place of two different terms used by the Army in past OE Cleanup Program documents to indicate explosive munitions items: (1) ordnance and explosives (OE), and (2) **unexploded ordnance (UXO)**.

### THE DECISION-MAKING PROCESS

The purposes of this Proposed Plan are to:

- Provide background information about the Del Rey Oaks MRA
- Describe the remedial actions considered
- Identify the Preferred Alternative for remedial action at Del Rey Oaks MRA and explain the reasons for the preference
- Solicit public review of and comment on all of the alternatives described
- Provide information on how the public can be involved in the remedy selection process for the Del Rey Oaks MRA.

The flow chart shown on **Figure 2** summarizes the Del Rey Oaks MRA Track 2 decision-making process that includes public and regulatory agency involvement and approval of the proposed remedy.

The Army is the responsible party and lead agency for investigating, reporting, making cleanup decisions, and taking cleanup actions at the former Fort Ord. This Proposed Plan for the Del Rey Oaks MRA is part of the Army's community relations program, a component of the requirements of Section 117(a) of CERCLA, and follows U.S. Environmental Protection Agency (EPA) guidance (*EPA, 1989*).

Public comments on this Proposed Plan will be accepted during a public meeting and during the 30-day public review and comment period. These comments will be considered when the Army and the EPA, in consultation with the California Environmental Protection Agency (Cal/EPA) Department of Toxic Substances Control (DTSC), make a final decision in a **Record of Decision (ROD)** regarding the selected remedy to be implemented for the Del Rey Oaks MRA to manage the risk to future land users from any potentially remaining MEC. Army responses to public comments on this Proposed Plan will appear in the "Responsiveness Summary" section of the ROD. The flow chart shown on **Figure 2** summarizes the development and public approval process for the Del Rey Oaks MRA Track 2 ROD.

## DEL REY OAKS MRA SITE CHARACTERISTICS

The Del Rey Oaks MRA is approximately 324 acres and is located along the southwestern boundary of the former Fort Ord (**Figure 1**). The land that comprises the Del Rey Oaks MRA was purchased by the government in 1917, and was available for military training until base closure in 1994. The site is currently undeveloped.

The Del Rey Oaks MRA is composed of portions of or all of three Munitions Response Sites—MRS-15 DRO 01, MRS-15 DRO 02, and a portion of MRS-43—as shown on **Figure 3**. Portions of these MRSs

### BACKGROUND

The former Fort Ord is located in northwestern Monterey County, California, approximately 80 miles south of San Francisco (**Figure 1**). The former Army base is made up of approximately 28,000 acres of land next to Monterey Bay and the cities of Seaside, Sand City, Monterey, and Del Rey Oaks to the south and Marina to the north. A Southern Pacific Railroad track and Highway 1 pass through the western portion of former Fort Ord, separating the beach from the rest of the base. Laguna Seca Recreation Area, Toro Park, and Highway 68 border former Fort Ord to the south and southeast.

Since it was established in 1917, Fort Ord served primarily as a training and staging facility for infantry and cavalry troops. From 1947 to 1975, Fort Ord was a basic training center. After 1975, the 7<sup>th</sup> Infantry Division was based at Fort Ord. Fort Ord was selected for closure in 1991. The majority of the soldiers were reassigned to other Army posts in 1993. The Army has retained a portion of former Fort Ord property as the Ord Military Community (OMC) and U.S. Army Reserve Center. The remainder of Fort Ord was identified for transfer to federal, state, and local government agencies and other organizations for reuse.

Because cavalry, field artillery, and infantry units used portions of the installation for training, maneuvers, and other purposes, MEC may be present on lands at the former Fort Ord. Military munitions typically used during these activities include artillery and mortar projectiles; rockets and guided missiles; rifle and hand grenades; land mines; pyrotechnics; bombs; and demolition materials.

Fort Ord was placed on the National Priorities List (NPL) of Superfund sites by the EPA on February 21, 1990, due to evidence of contaminated soil and groundwater. A Federal Facility Agreement (FFA) was signed in July 1990 by representatives of the Army, EPA, and the DTSC and RWQCB—agencies that are part of Cal/EPA. The FFA established schedules for conducting investigations and requires the cleanup process be conducted as expeditiously as possible. In 1991, the basewide Remedial Investigation / Feasibility Study (RI/FS) for soil and groundwater contamination (hazardous and toxic waste or HTW) began, and Fort Ord was placed on the Base Realignment and Closure (BRAC) List.

Since 1993, MEC-related field investigations, sampling, and removal activities have been conducted at many former Fort Ord sites by the Army's munitions response contractors. This investigation and removal work was focused on addressing explosive safety. In 1998, the Army agreed to evaluate MEC at the former Fort Ord in an MR RI/FS consistent with CERCLA. For the Del Rey Oaks MRA, the Army also reviewed documentation of past MEC-related investigations, sampling, and removal activities on a site-by-site basis. This evaluation was conducted in accordance with a process identified in the Final Plan for Evaluation of Previous Work (*HLA, 2000*) and took into account the quality and quantity of the available data, the work completed, and the intended future land uses. Based on this review, the Del Rey Oaks MRA was determined to be within the 1917 parcel that was used for artillery training and staging. After World War II, the available documentation indicates that the area was used primarily for small arms training and for general training using practice munitions.

were used for training (e.g., hand grenade training and anti-tank training that included the use of military munitions). As described in the Del Rey Oaks MRA RI/FS (MACTEC, 2007), the three Munitions Response Sites were identified in Archives Searches conducted in 1993, 1994, and 1997 that included reviews of historical maps and other documents, as well as interviews with current and former Fort Ord personnel. MRS-15 DRO 01 and MRS-15 DRO 02 were not specifically identified in the Archive Search. However, they were part of the larger MRS-15 that was later subdivided into smaller sites to facilitate land transfer. MRS-15 DRO 01 and MRS-15 DRO 02 were established at that time. A summary of the historical use of these MRSs is presented in **Table 1** found at the back of this Plan. More detailed information regarding the three MRSs is presented in the Del Rey Oaks MRA RI/FS (MACTEC, 2007).

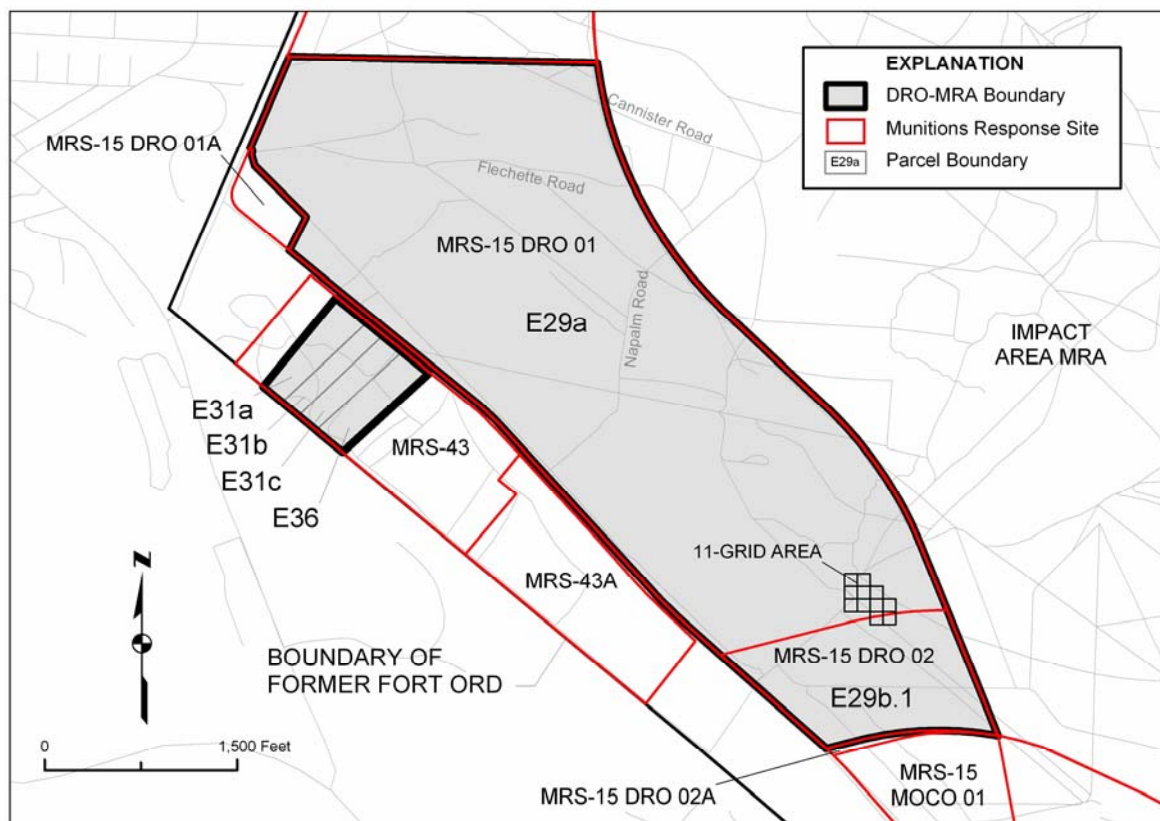


Figure 3. Del Rey Oaks MRA Site Map

The entire area that comprises the Del Rey Oaks MRA was investigated through sampling, and several MEC removal actions were conducted. Following these investigations and MEC removals, a geophysical investigation of the entire MRA was conducted and all detected MEC was removed. As a result, portions of the site were investigated multiple times. The investigation and MEC removal was completed by the Army’s munitions response contractors in accordance with contractual and/or work plan requirements, and the work plan was reviewed by the regulatory agencies. The work was conducted using Schonstedt GA-52Cx hand held magnetometers, Geonics EM-61 metal detectors, Geometrics G858 magnetometers, or a combination of these instruments. In addition, anomalies detected deeper than four feet bgs were investigated and any MEC that was found was removed and destroyed. Quality control procedures employed after each removal action indicated the removal work met project requirements, with the exception of the “11 grid area” shown on **Figure 3**. The 11 grid area, which contained numerous machine gun links, was re-investigated and cleared to meet project objectives. However, the possibility that MEC still exists in the 11 grid area cannot be entirely ruled out because metallic clutter remaining in this area may create additional interference not identified in other parts of the Del Rey Oaks MRA that could affect the ability to detect any potentially remaining MEC.

Table 2. Summary of Del Rey Oaks MRA Transfer Parcels Included in this Proposed Plan

| Transfer Parcel | Munitions Response Sites | Acres | Proposed Reuse*                                               |
|-----------------|--------------------------|-------|---------------------------------------------------------------|
| E29a            | MRS-15 DRO 01            | 272   | Visitor Serving Center / Business Park                        |
| E29b.1          | MRS-15 DRO 02            | 34    | Right-of-Way / Business Park / Light Industrial / Office Park |
| E31a            | MRS-43 (portion)         | 5     | Business Park / Light Industrial / Office Park                |
| E31b            | MRS-43 (portion)         | 3     | Business Park / Light Industrial / Office Park                |
| E31c            | MRS-43 (portion)         | 4     | Business Park / Light Industrial / Office Park                |
| E36             | MRS-43 (portion)         | 6     | Business Park / Light Industrial / Office Park                |

\* Proposed reuse information from the *Finding of Suitability for Early Transfer (FOSET)* (Army, 2004).

The Del Rey Oaks MRA land was transferred from the Army to Fort Ord Reuse Authority in 2005, and then to the City of Del Rey Oaks. The Del Rey Oaks MRA land was transferred to the City of Del Rey Oaks as six individual transfer parcels (**Table 2**). Transfer parcels E29a and E29b.1 are comprised of MRS-15 DRO 01 and MRS-15 DRO 02, respectively. The portion of MRS-43 that is included in the Del Rey Oaks MRA is subdivided into four transfer parcels: E31a, E31b, E31c, and E36. The proposed reuse for the transfer parcels is summarized in **Table 2** and is presented in more detail in the Del Rey Oaks MRA RI/FS (*MACTEC, 2007*). Identified reuse includes a visitor serving area, a business park, light industrial, and office park. The specific reuse of the visitor serving area was not identified; however, intended reuses reportedly include a golf course, lodging, and retail. At the time of early transfer of the property, reuse requirements were specified in the deed to the property that include: (1) a prohibition on unrestricted/residential reuse; and (2) a requirement for construction support during any soil disturbing (intrusive) activities below 4 feet in the “11 grid area” shown on **Figure 3**. Although a residential use prohibition currently exists for the property, residential use is being considered by the City of Del Rey Oaks.

## SUMMARY OF SITE RISKS

A qualitative risk assessment was performed to evaluate the risk associated with the post-MEC removal, or current site conditions. The risk assessment was performed using the Fort Ord Ordnance and Explosives Risk Assessment Protocol (*Malcolm Pirnie, 2002*) that was developed to estimate the risk to future land users of the property from any MEC potentially remaining at the site in terms of an “Overall MEC Risk Score”. The Overall MEC Risk Scores are expressed in letters A through E, with A representing the lowest risk and E representing the highest risk.

Receptors evaluated in the risk assessment included a recreational user, an indoor worker, a construction worker, an outdoor maintenance worker, and an adult or child resident as described in the Del Rey Oaks MRA Risk Assessment (*MACTEC, 2007*). All receptors evaluated received a score of “A” or lowest risk. However, because of uncertainties identified in the risk assessment, it is not possible to confirm that all MEC has been removed from the site. Therefore, the risk from any MEC potentially remaining at the Del Rey Oaks MRA, although considered very low, was addressed in the Del Rey Oaks MRA Feasibility Study (*MACTEC, 2007*). It is anticipated that receptors that intrude below the ground surface (e.g., construction workers, outdoor maintenance workers, and residents) would have a greater chance of encountering any potentially remaining MEC than non-intruding receptors. To reduce the possibility of an encounter, remedial alternatives were evaluated in the Del Rey Oaks MRA Feasibility Study (*MACTEC, 2007*). In particular, review of the RI data indicated that the majority of the high hazard items (37mm projectiles and

2.36-inch rockets) were removed from the northern and southern sections of the Del Rey Oaks MRA. In addition, penetrating projectiles, both as MEC and munitions debris, were found primarily in the northern and southern portions of the Del Rey Oaks MRA. Because these items represent the highest hazard if encountered, and are more likely to be found in the subsurface, greater uncertainty is associated with the removal in these areas. These data were considered further when evaluating remedial alternatives in the Del Rey Oaks MRA Feasibility Study summarized below (MACTEC, 2007).

## REMEDIAL ACTION OBJECTIVES

The primary Remedial Action Objectives (RAOs) for the Del Rey Oaks MRA are to (1) reduce risks to human health and the environment and (2) comply with **Applicable or Relevant and Appropriate Requirements (ARARs)**, such as federal and state laws and regulations that can be used to set cleanup standards. The principal threats at the Del Rey Oaks MRA have already been treated (i.e., MEC removal actions have been completed), significantly reducing the risks to human health and the environment. However, no MEC detection method is 100 percent accurate. Therefore, to manage the risk to future land users from any MEC that potentially remains at the site, remedial action alternatives were evaluated for the Del Rey Oaks MRA in the Feasibility Study (MACTEC, 2007) as summarized in the following sections.

## SUMMARY OF REMEDIAL ACTION ALTERNATIVES

Three remedial alternatives were evaluated to address risks from any MEC that potentially remains in the Del Rey Oaks MRA during development and in the future following development and reuse of the area. In addition, long term management measures that will be implemented for the Del Rey Oaks MRA include: a deed restriction, annual letter reporting by the City of Del Rey Oaks, unless a variance has been granted pursuant to the 2004 DTSC agreement, and five-year review reporting by the Army. These measures are considered as implementation and management aspects of the remedial alternatives, rather than specific mitigation measures. It should be noted that (1) grading activities are part of redevelopment activities and are not considered part of the remedial alternatives; and (2) compliance with environmental requirements associated with redevelopment would be the reuser's responsibility.

- Alternative 1: No Further Action
- Alternative 2: Conditions on Soil Disturbance Activities to Minimize MEC Exposure
- Alternative 3: Conditions on Soil Disturbance Activities to Minimize MEC Exposure and Residential Use Restriction Including Contingency to Address Proposed Change in Site Reuse

These remedial alternatives are described in further detail as follows:

**Alternative 1: No Further Action**—This alternative is provided, as required under CERCLA and the National Contingency Plan (NCP), as a baseline for comparison to the other proposed remedial alternatives. This alternative assumes no further action would be taken related to MEC at the Del Rey Oaks MRA, and existing **land use controls** in place at the site at the time the property was transferred would be removed. The federal deed and state Land Use Covenant would be modified to remove construction support in the 11 grids in the Range 26 berm area and unrestricted/residential use restrictions.

**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. MEC is not expected to be present at the site. 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 Site—The Army recommends reasonable and prudent precautions be taken when conducting intrusive operations and will provide MEC recognition and safety training, upon request, for any persons that will be conducting such activities. MEC recognition and safety training is required for workers involved in soil disturbance activities within the 11 grid area at depths exceeding 4 feet.

- Construction Support in 11-Grid Area—The Army will provide construction support within the 11 grid area during soil excavation or movement at depths exceeding 4 feet.
- Site-Wide Construction Support—The City of Del Rey Oaks (the 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. The Army does not believe site-wide provision for construction support is necessary based on the results of the RI and RA; however, pursuant to the Del Rey Oaks – DTSC Agreement, the City of Del Rey Oaks agreed to implement this requirement, at the transferee’s expense, through establishment and maintenance of a city ordinance.

These conditions on soil disturbance activities would be implemented in accordance with the Remedial Design/Remedial Action Work Plan (RD/RAWP). Under the Federal Facility Agreement (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 signature of the ROD, the current federal deed and state Land Use Covenant would be modified, if necessary, to be consistent with the final remedy.

These conditions on soil disturbance activities would 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.

At the time of five-year reviews, the Army will evaluate the effectiveness of each of the conditions on soil disturbance activities. If experience indicates that no MEC items have been found during the course of development, redevelopment, or reuse of an area, it is anticipated that the conditions may, with the approval of the regulatory agencies, be modified or discontinued.

In the event that a MEC item is discovered at the site, the reuser is to immediately report to the local law enforcement agency. In accordance with established procedures, the local law enforcement agency will in turn request a response by authorized UXO-qualified personnel (e.g., an Explosive Ordnance Disposal [EOD] unit) who will promptly be dispatched to destroy or otherwise take control of the reported military munitions item.

**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 developed assuming that a modified Residential Use Restriction would be implemented and maintained in specified areas of the Del Rey Oaks MRA in order to address proposed changes in site reuse until the DTSC’s 2004 *Draft Protocol for Authorizing Residential Uses at Del Rey Oaks* (Residential Quality Assurance Protocol; *MACTEC, 2007*) was successfully implemented, as verified by DTSC. 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. For the purpose of this document, residential use includes, but is not limited to, residences, schools, daycare facilities, hospitals, and hospices. The Residential Use Restriction would only apply to specified areas where regulatory agency review of the RI data indicated the northern and southern portions of the Del Rey Oaks MRA contained:

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

Because these items represent the highest hazard if encountered, 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.



The Residential Use Restrictions are included in Alternative 3 in addition to the conditions on soil disturbance activities described for Alternative 2 above, as follows:

**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 intrusive operations and will provide MEC recognition and safety training, upon request, for any persons that will be conducting such activities. MEC recognition and safety training is required for workers involving soil disturbance activity within the 11 grid area at depths exceeding 4 feet.
- **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 4 feet.
- **Site-Wide Construction Support**—The City of Del Rey Oaks (the 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. The Army does not believe site-wide provision for construction support is necessary based on the results of the RI and RA; however, pursuant to the Del Rey Oaks – DTSC Agreement, the City of Del Rey Oaks agreed to implement this requirement, at the transferee’s expense, through establishment and maintenance of a city ordinance.

These land use controls would 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 recognitions 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**

- The Army believes that a residential use restriction is not necessary for the Del Rey Oaks MRA, but based on regulatory agency input regarding explosive items that were present in the northern and southern parts of the Del Rey Oaks MRA, a residential use restriction in these portions of the site will be required. In the central portion of the MRA, the regulatory agencies do not believe that the residential use restriction must continue; therefore, the existing deed limiting the property with those restrictions would need to be modified. The residential use restriction on the remainder of the Del Rey Oaks MRA would be modified to allow for residential use if the Residential Quality Assurance Protocol is successfully implemented, as verified by DTSC. 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 land owner (currently the City of Del Rey Oaks) 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 is satisfied that residential use is appropriate, on the basis of the Residential Quality Assurance Protocol or further site evaluation incorporating new information (e.g., geophysical mapping, site development etc.).

The above conditions on soil disturbance activities, excluding the residential use restrictions, would be implemented and be described in further detail in the Remedial Design/Remedial Action Work Plan (RD/RAWP). Under the Federal Facility Agreement (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 signature of the ROD, the current federal deed and state Land Use Covenant would be modified, if necessary, to be consistent with the final remedy.

At the time of five-year reviews, the Army will evaluate the effectiveness of each of the conditions on soil disturbance activities. If experience indicates that no MEC items have been found in the course of



development, redevelopment, or reuse of an area, it is anticipated that the conditions may, with the approval of the regulatory agencies, be modified or discontinued.

In the event that a MEC item is discovered at the site, the reuser is to immediately report to the local law enforcement agency. In accordance with established procedures, the local law enforcement agency will in turn request a response by authorized UXO-qualified personnel (e.g., an Explosive Ordnance Disposal [EOD] unit) who will promptly be dispatched to destroy or otherwise take control of the reported military munitions item.

## EVALUATION AND COMPARISON OF ALTERNATIVES

Remedial alternatives were evaluated based on EPA's nine evaluation criteria specified in EPA's *Guidance for Conducting Remedial Investigations/Feasibility Studies Under CERCLA (EPA, 1989)*. The evaluation and comparison of the alternatives is summarized in **Table 3** at the back of this Proposed Plan. No potential federal and state ARARs were determined to apply for land use controls at the Del Rey Oaks MRA; however, remedial alternatives will be implemented in compliance with land use control guidelines. While the Army does not consider California laws and regulations concerning Land Use Covenants to be potential ARARs, the Army has entered into a state Land Use Covenant at the time the property was transferred, and after the Del Rey Oaks MRA ROD is signed, the existing covenant will be modified to document the land use restrictions that are selected as part of the remedy. Although the DTSC and EPA 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 if the existing covenant is modified to be consistent with the ROD and the modifications are acceptable to the DTSC. Land Use Covenants signed by the Army and the State of California in the past restricting the reuse of the property were acceptable to the DTSC.

In summary, the evaluation and comparison of alternatives indicates:

- Alternative 1—No Further Action would not provide overall protection of human health and the environment in terms of managing risks to future land users from any potentially remaining MEC. No ARARs were identified for this alternative. Cost: \$97,000 for long term management measures.
- Alternative 2—Conditions on Soil Disturbance Activities to Minimize MEC Exposure would provide overall protection of human health, be easy to implement and moderately easy to maintain, and have a minimal cost. No ARARs were identified for this alternative; however, land use control guidelines were considered in the development of the alternative, and would be followed during implementation. Cost: \$67,000, and \$97,000 for long term management measures.
- Alternative 3—Conditions on Soil Disturbance Activities to Minimize MEC Exposure and Residential Use Restrictions Including Contingency to Address Proposed Change in Site Reuse would provide overall protection of human health, have a moderate level of effort to implement and maintain, and have a minimal cost. This alternative provides an additional layer of protection by maintaining and implementing a Residential Use Restriction in specified areas and address proposed changes in site reuse. No ARARs were identified for this alternative; however, land use control guidelines were considered in the development of the alternative, and would be followed during implementation. Because unrestricted 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 would be the reuser's responsibility. Cost: \$67,000, and \$97,000 for long term management measures.

## PREFERRED ALTERNATIVE

The Army proposes Alternative 3—Conditions on Soil Disturbance Activities to Minimize MEC Exposure and Residential Use Restrictions Including Contingency to Address Proposed Change in Site Reuse, as the preferred alternative for the Del Rey Oaks MRA. These conditions on soil disturbance activities and residential use restrictions would be protective of human health for future land users, and would be effective in the short- and long-term at mitigating the risk to future reusers conducting intrusive activities from any MEC that might still remain at the site. This remedial alternative would require a low level of effort to implement, a moderate level of effort to administer over time, and would be cost effective. No ARARs were identified for this alternative; however, land use controls would be implemented in a manner consistent with federal and state guidance. The Army finds Alternative 3—Conditions on Soil Disturbance Activities to Minimize MEC Exposure and Residential Use Restrictions Including Contingency to Address Proposed Change in Site Reuse, for the Del Rey Oaks MRA is consistent with the anticipated reuse at the time the property was transferred, and that a MEC cleanup has been performed that is consistent with that anticipated reuse. In addition, this alternative accommodates the proposed change in reuse by the current property owner, and is expected to be acceptable to DTSC.

In the event that a suspected MEC item is discovered at the site, the reuser is to immediately report to the local law enforcement agency. In accordance with established procedures, the local law enforcement agency will in turn request a response by authorized UXO-qualified personnel (e.g., an EOD unit) who will promptly be dispatched to destroy or otherwise take control of the reported military munitions item.

Long Term Management Measures comprised of a deed restriction, annual letter reporting by the City of Del Rey Oaks, unless a variance has been granted pursuant to the 2004 DTSC agreement, and five-year review reporting will be implemented for the Del Rey Oaks MRA. These measures will be implemented to: (1) warn property owners of potential MEC risks associated with intrusive activities, (2) monitor and report any MEC-related data during development or reuse, and (3) assess and manage information regarding the continued protectiveness of these alternatives over time. These measures are considered as implementation and management aspects of the remedial alternatives, rather than specific mitigation measures.

After the Record of Decision is signed for the Del Rey Oaks MRA, a Remedial Design/Remedial Action Work Plan (RD/RAWP) will be developed. The RD/RAWP will outline the processes for implementing the conditions and restrictions that are selected as part of the remedy, and will also include procedures for responding to and coordinating unexpected circumstances

### **The Preferred Alternative**

Conditions on Soil Disturbance Activities to Minimize MEC Exposure and Residential Use Restriction Including Contingency to Address Proposed Change in Site Reuse to Protect Reusers During Development and Reuse:

- MEC Recognition and Safety Training
- Construction Support by UXO-qualified personnel
- Residential Use Restrictions

### In Addition

*Implementation and management aspects of the preferred alternative include Long Term Management Measures to Protect Future Land Users:*

- Deed Restriction
- Annual Letter Reporting
- 5-Year Review Reporting

*Based on information currently available, the lead agency believes the Preferred Alternative meets the threshold criteria and provides the best approach among the remedial alternatives with respect to the balancing and modifying criteria. The lead agency expects the Preferred Alternative to satisfy the following statutory requirements of CERCLA §121(b): 1) be protective of human health and the environment; 2) comply with ARARs (or justify a waiver); 3) be cost-effective; 4) utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and 5) satisfy the preference for treatment as a principal element (or justify not meeting the preference). MEC removal actions ("treatment") that have already been completed are considered in the development of alternatives and remedy selection. Therefore, the Conditions on Soil Disturbance Activities to Minimize MEC Exposure and Residential Use Restrictions Including Contingency to Address Proposed Change in Site Reuse alternative is selected "post-treatment" as the Preferred Alternative to address the risk that any remaining MEC presents to future users of the property.*

such as a future discovery of significant number of MEC in the Del Rey Oaks MRA. Any MEC finds or incidents will be reported immediately to the regulatory agencies and will be documented in the annual and 5-Year Review reports. The conditions and restrictions that are selected as part of the remedy may be modified in the future based on the 5-Year Review process.

## HOW TO MAKE COMMENTS

The Army is the responsible party and lead agency for investigating, reporting, making cleanup decisions, and taking cleanup actions at the former Fort Ord. The Army, as lead agency, is soliciting public comments on the Preferred Alternative of Conditions on Soil Disturbance Activities to Minimize MEC Exposure and Residential Use Restrictions Including Contingency to Address Proposed Change in Site Reuse, as well as other remedial action alternatives evaluated to manage the risk from any MEC that may potentially remain at the Del Rey Oaks MRA described in this Proposed Plan. The Track 2 Munitions Response RI/FS for the Del Rey Oaks MRA (*MACTEC, 2007*) provides a detailed site report that describes the information gathered during the literature review and site investigations, as well as a more detailed description of the reasons for the Army's recommendations of Conditions on Soil Disturbance Activities to Minimize MEC Exposure and Residential Use Restrictions Including Contingency to Address Proposed Change in Site Reuse related to MEC. These reports are available for review at the Information Repositories and the Administrative Record listed below.

Public comments will be considered before any action is selected and approved. Written and oral comments on this Del Rey Oaks MRA Proposed Plan will be accepted at the public meeting scheduled on September 12, 2007 from 6:00 p.m. to 8:00 p.m. at the Embassy Suites Hotel, 1441 Canyon Del Rey, Seaside, California. Representatives from the Army, EPA, and DTSC will be present at this meeting to explain the Del Rey Oaks MRA Proposed Plan, listen to comments, answer questions, and accept public comments.

Written comments will be accepted throughout the 30-day public comment period from August 31 to September 30, 2007. Correspondence should be postmarked no later than September 30, 2007 and sent to the attention of the U.S. Army representative at the following address (*Please reference the Del Rey Oaks MRA Proposed Plan in your correspondence*):

**Department of the Army  
Fort Ord Base Realignment and Closure (BRAC) Office  
ATTN: Gail Youngblood  
BRAC Environmental Coordinator  
P.O. Box 5008  
Monterey, California 93944-5008**

## INFORMATION ACCESS

### **U.S. Army Representative**

Department of the Army

Fort Ord Base Realignment and Closure (BRAC) Office

P.O. Box 5008

Monterey, California 93944-5008

Contact: Gail Youngblood, BRAC Environmental Coordinator

(831) 393-1284 FAX: (831) 393-9188

Hours: 8:00 am - 5:00 pm

### **Regulatory Representatives**

U.S. Environmental Protection Agency, Region IX

Superfund Federal Facilities Cleanup Branch

75 Hawthorne Street, Mail Code SFD-8-3

San Francisco, California 94105

Contact: Judy Huang (415) 972-3681

Hours: 8:00 am - 5:00 pm

Cal/EPA Department of Toxic Substances Control, Region 2

Site Mitigation/Office of Military Facilities

8800 Cal Center Drive

Sacramento, California 95826

Contact: Roman Racca (916) 255-6407

Hours: 8:00 am - 5:00 pm

### **INFORMATION REPOSITORIES**

California State University Monterey Bay (CSUMB) Library Learning Complex

100 Campus Center, Bldg. 12

Seaside, California 93955 (831) 582-3733

For current library hours, call or visit <http://library2.csumb.edu/about/hours.php>

Seaside Branch Library

550 Harcourt Avenue

Seaside, California 93955 (831) 899-2537

Hours: Mon-Thurs 10:00 am-8:00 pm; Fri/Sat 10:00 am-5:00 pm

### **Administrative Record Department Location**

Fort Ord Administrative Record ([www.fortordcleanup.com](http://www.fortordcleanup.com))

Building 4463 Gigling Road, Room 101

Ord Military Community, California 93944-5008 (831) 393-9186

Hours: Mon-Fri 9:00 am-4:00 pm. Other hours by appointment. Closed daily, 12:00 pm-1:30 pm & Federal holidays.

## REFERENCES

Harding Lawson Associates (HLA; now MACTEC), 2000. *Final Plan for Evaluation of Previous Work, Ordnance and Explosives Remedial Investigation/Feasibility Study, Former Fort Ord, California*. Report prepared for USACE. December 4.

MACTEC Engineering and Consulting, Inc. (MACTEC), 2007 (formerly HLA and Harding ESE). *Final Track 2 Munitions Response Remedial Investigation/Feasibility Study Del Rey Oaks Munitions Response Area Former Fort Ord, California*. August.

Malcolm-Pirnie, 2002. *Final Fort Ord Ordnance and Explosives Risk Assessment Protocol*. October.

U.S. Department of the Army (Army), 2004. *Finding of Suitability for Early Transfer (FOSET) with CERCLA 120(h)(3) Covenant Deferral DEL REY OAKS Parcels*. July 28.

United States Environmental Protection Agency (EPA), 1989. *Guidance for Conducting Remedial Investigation/Feasibility Studies Under CERCLA. Interim Final*. EPA 540/G-89/001. October.

## GLOSSARY

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

**Applicable or Relevant and Appropriate Requirements (ARARs)** – Federal and State laws and regulations pertaining to environmental cleanups that can be specific to the chemicals found at a site, the potential actions proposed to address contamination at a site, or the location of the site.

**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 key cleanup documents such as the Remedial Investigation (RI), Feasibility Study (FS), Proposed Plan, and Record of Decision (ROD).

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

**Land Use Controls** – Land use controls 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 include fences, pavement, or signs. Legal mechanisms include deed restrictions that limit how the property is used. Administrative mechanisms include providing munitions recognition training for workers who may perform intrusive activities (i.e., perform work in the subsurface).

**Military Munitions** [formerly OE] – Generally, all ammunition products and components produced for or used by the armed forces for national defense and security, including ammunition products or components under the control of the Department of Defense, the U.S. 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)).

**Military Munitions Response Program** [formerly OE Cleanup Program] – Program established by the Department of Defense to manage environmental, health and safety issues presented by MEC.

**Munitions Debris** [formerly OE Scrap] – Remnants of munitions (e.g., fragments, penetrators, projectiles, shell casings, links, fins) remaining after munitions use, demilitarization or disposal. Munitions debris is confirmed inert by technically-qualified personnel.

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

**Munitions Response Area (MRA)** – Any area on a defense site that is known or suspected to contain UXO, DMM, or MC. A munitions response area is made up of one or more munitions response sites.

**Munitions Response Site (MRS)** [formerly OE Site] – A discrete location within a MRA that is known to require a munitions response.

**Ordnance and Explosives (OE)** – Consists of either (1) or (2) below:

(1) Ammunition, ammunition components, chemical or biological warfare materiel or explosives that have been abandoned, expelled from demolition pits or burning pads, lost, discarded, buried, or fired. Such ammunition, ammunition components, and explosives are no longer under accountable record control of any Department of Defense organization or activity.

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

**Preferred Remedial Alternative** – The remedial alternative that, when compared to other potential alternatives, was determined to best meet the nine CERCLA evaluation criteria in the Feasibility Study, and is proposed for implementation at a site.

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

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

**Remedial Alternatives** – Potential remedies to address contamination (in this case, MEC).

**Remedial Investigation (RI)** – Exploratory inspection conducted at a site to define the nature and extent of chemicals, and in this case, MEC present.

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

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

**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.

Table 1. Summary of Munitions Response Site (MRS) Investigations  
Del Rey Oaks Munitions Response Area, Former Fort Ord California

| MRS Site Number                         | Site Acreage | Past Use                                                                                                                                                                                                                                                                                                                          | Site Investigation Status** |
|-----------------------------------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| MRS-15 DRO 01                           | 272          | Several ranges existed for small arms training, automatic rifle training, antitank (AT) 35mm subcaliber training, and practice 40mm grenade training, and 2.36-inch rocket training. Based on MEC and munitions debris identified during removal actions 37mm gun training, and 3.5-inch rocket training, may also have occurred. | 4-foot removal complete     |
| MRS-15 DRO 02                           | 34           | Some ranges from MRS-15 DRO-1 overlapped slightly with MRS-15 DRO-2 (see above).                                                                                                                                                                                                                                                  | 4-foot removal complete     |
| Portion of MRS-43 (South Boundary Area) | 18*          | Used as a backstop for rifle grenade training, hand grenade training, and shoulder launched projectiles.                                                                                                                                                                                                                          | 4-foot removal complete     |

Footnotes: \* The acreage listed is for the portion of the MRS included in the Del Rey Oaks MRA. The Del Rey Oaks MRA contains only a portion of MRS-43, but all of MRS-15 DRO 01 and MRS-15 DRO 02.

\*\* Anomalies deeper than 4 feet below ground surface were also intrusively investigated.



Table 3. Summary of Remedial Alternatives Evaluation and Comparison  
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                                       |
| <b>(1) No Further Action</b>                                                                                                                                                  | Not protective; does not mitigate the risk from MEC that potentially remains to intrusive workers | 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 MEC removals that have been conducted | Not administratively feasible                                                                                                                                                          | No costs    | Not likely acceptable | Army will evaluate based on comments on this Proposed Plan |
| <b>(2) Conditions on Soil Disturbance Activities to Minimize MEC Exposure</b>                                                                                                 | Protective; mitigates risk to future users from any potentially remaining MEC at the site         | No ARARs were identified for this alternative** | Effective. MEC recognition and safety training & construction support would be required during intrusive activities in the 11 grid area | Effective. MEC recognition and safety training & construction support would be required during intrusive activities in the 11 grid area | Reduction has already taken place during MEC removals that have been conducted | Administratively feasible<br>Low level of effort to implement<br>Moderate level of effort to maintain and administrate over time                                                       | \$67,000    | May be acceptable     | Army will evaluate based on comments on this Proposed Plan |
| <b>(3) Conditions on Soil Disturbance Activities to Minimize MEC Exposure and Residential Use Restrictions Including Contingency to Address Proposed Change in Site Reuse</b> | Protective; mitigates risk to future users from any potentially remaining MEC at the site         | No ARARs were identified for this alternative** | MEC recognition and safety training & construction support would be required during intrusive activities in the 11 grid area            | Effective. MEC recognition and safety training & construction support would be required during intrusive activities in the 11 grid area | Reduction has already taken place during MEC removals that have been conducted | Administratively feasible<br>Moderate level of effort to implement for the reuser, but would allow unrestricted use<br>Moderate level of effort to maintain and administrate over time | \$67,000    | Likely acceptable     | Army will evaluate based on comments on this Proposed Plan |

Footnotes: \* These costs are in addition to an estimated \$97,000 for Long Term Management Measures (Deed Restriction, Annual Letter Reporting, 5-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 4 ft bgs in the approximate 2.5 acre 11 grid area, which are included as Army costs above); and (3) application of DTSC's draft residential protocol in applicable areas.

\*\* Although the DTSC and EPA 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 if the existing covenant is modified to be consistent with the ROD and the modifications are acceptable to the DTSC. Land Use Covenants signed by the Army and the State of California in the past restricting the reuse of the property were acceptable to the DTSC.