

## Record of Decision

No Further Action Related to Munitions and  
Explosives of Concern—Track 1 Sites

No Further Remedial Action with Monitoring for  
Ecological Risks from Chemical Contamination  
at Site 3 (MRS-22)

Former Fort Ord, California

March 10, 2005

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

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## TRACK 1 RECORD OF DECISION

### 1.0 DECLARATION

The former Fort Ord is located near Monterey Bay in northwestern Monterey County, California as shown on Plate 1. Since 1917, portions of the former Fort Ord were used by cavalry, field artillery, and infantry units for maneuvers, target ranges, and other purposes. Military munitions were fired into, fired upon, or used on the facility in the form of artillery and mortar projectiles, rockets and guided missiles, rifle and hand grenades, land mines, pyrotechnics, bombs, and demolition materials. These military munition items may be present in parts of the former Fort Ord.

This No Further Action Record of Decision (ROD) addresses sites at the former Fort Ord that were suspected to have been used for military training with military munitions, but based on the Track 1 Ordnance and Explosives Remedial Investigation/Feasibility Study (Track 1 OE RI/FS) (*MACTEC, 2004*), each Track 1 site falls into one of the following three categories:

- Category 1: There is no evidence to indicate military munitions were used at the site, i.e., suspected training did not occur; or
- Category 2: The site was used for training, but the military munitions items used do not pose an explosive hazard, i.e., training did not involve explosive items; or
- Category 3: The site was used for training with military munitions, but military munitions items that potentially remain as a result of that training do not pose an unacceptable risk based on site-specific evaluations conducted in the Track 1 OE RI/FS. Field investigations identified evidence of past training involving military munitions, but training at these sites involved only the use of practice and/or pyrotechnic items that are not designed to cause injury. In the unlikely event that a live item of the type previously observed at the site is found, it is not expected that the item would function by casual contact (i.e., inadvertent and unintentional contact).

The sites addressed in this ROD include a group of 21 Track 1 sites at the former Fort Ord for which 'No Further Action Related to Munitions and Explosives of Concern' (MEC) (explosive munitions items) is required because MEC associated with training activities conducted at these sites was not found during field investigations listed on Table 1 and is not expected to be found in the future (Plate 2). The Track 1 OE RI/FS (*MACTEC, 2004*) provided the site-specific rationale for assigning Track 1 status and served as the basis for the Track 1 Proposed Plan (*Army, 2004*). Additionally, the Plug-in process described below will document the basis for No Further Action Related to MEC determinations at future Munitions Response Sites (MRSs) that meet the definition of a Track 1 site at the former Fort Ord.

Munitions Response Sites that become eligible for Track 1 status after completion of this ROD will be addressed using a "Plug-In" process. This process will document the No Further Action decision for each candidate Track 1 site in site-specific Approval Memoranda. For each future Track 1 site evaluated under this Plug-In process, the Approval Memorandum will document the No Further Action Related to MEC decision, and will contain the same types of information provided in the individual Remedial Investigation Site Reports in the Track 1 OE RI/FS (*MACTEC, 2004*). There will be a public review process for all Approval Memoranda, and these memoranda will be subject to the Federal Facility Agreement (FFA) schedule provisions for primary documents.

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

This ROD also presents the 'No Further Remedial Action with Monitoring for Ecological Risks from Chemical Contamination' decision for one of the Track 1 sites—MRS-22—also known as Site 3, the former Beach Trainfire Ranges (Site 3). An Interim Record of Decision for the Site 3 Beach Trainfire Ranges was signed in January 1997, which selected lead cleanup levels for the protection of human health, but deferred evaluation of ecological risks, which are addressed herein. Ecological monitoring will be conducted at Site 3 (MRS-22) to confirm the results of the ecological risk assessments and evaluations conducted to date (*HLA, 1995, 1998; IT, 2000*). This data will be evaluated in conjunction with previous ecological risk assessment and evaluation data during the five-year reviews to assess the need for continued ecological monitoring and make sure the decision remains protective of the environment. The next five-year review will occur in 2007.

## 1.1 Basis and Purpose

This ROD is the decision document that presents the rationale for:

- 1) The selected 'No Further Action Related to MEC' determination for the 21 Track 1 sites investigated in the Track 1 OE RI/FS for the former Fort Ord (*MACTEC, 2004*);
- 2) The selected 'No Further Action Related to MEC' determination for future sites that meet the definition of Track 1 that will be documented in site-specific Approval Memoranda under the Track 1 "Plug-In" process for the former Fort Ord; and
- 3) The selected 'No Further Remedial Action with Monitoring for Ecological Risks from Chemical Contamination' determination for Site 3 (MRS-22) at the former Fort Ord (*HLA, 1995, 1998; IT, 2000*).

No Further Action was selected for these sites in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendment and Reauthorization Act (SARA), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on information and reports contained in the Administrative Record for the former Fort Ord.

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

The Army and the U.S. Environmental Protection Agency (EPA) have jointly selected the remedy, 'No Further Action Related to MEC' for the 21 identified Track 1 sites included in this ROD and future Track 1 "Plug-In" sites; established the Plug-In process for documenting additional Track 1 sites; and selected 'No Further Remedial Action with Monitoring for Ecological Risks from Chemical Contamination' for Site 3 (MRS-22). The Department of Toxic Substances Control (DTSC), a part of the California Environmental Protection Agency (Cal/EPA), has had an opportunity to review and comment on the ROD. DTSC has elected to undertake the following additional precautions at Site 3 (MRS-22). DTSC will enter into a Memorandum of Understanding for further surveillance with the California Department of Parks and Recreation, which will be acquiring Site 3 (MRS-22). DTSC also intends to enter into a Land Use Covenant with the California Department of Parks and Recreation to enhance protection of human health. These documents will address further monitoring and use of the land at Site 3 (MRS-22). The Regional Water Quality Control Board (RWQCB, also part of Cal/EPA), has reviewed and commented on the selected 'No Further Remedial Action with Monitoring for Ecological Risks from Chemical Contamination' determination for Site 3 (MRS-22) only in so far as it relates to water quality

issues and nuisances regulated by the RWQCB. The selected No Further Action Remedy is consistent with the RWQCB's comments.

## 1.2 Site Assessment

### 1.2.1 Munitions and Explosives of Concern

Track 1 sites do not pose an unacceptable risk to human health or the environment from previous military munitions-related activities based on the results of the Track 1 OE RI/FS (*MACTEC, 2004*). Although MEC was not discovered during field investigations or site visits associated with the Track 1 OE RI/FS and while it is highly unlikely that MEC will be encountered at these 21 Track 1 sites in the future, there is the potential for MEC to be present at Track 1 sites because military munitions were used throughout the history of Fort Ord. The Army will report any information or evidence of MEC if or when it is found in the future at any sites at former Fort Ord to the regulatory agencies. Further, the Army will make construction education with "ordnance recognition and safety training" available to future users and developers of all Track 1 sites as described in Section 1.3.1 of this ROD.

### 1.2.2 Ecological Risks at Site 3 (MRS-22)

Chemical contamination at Site 3—one of the Track 1 sites known as MRS-22— does not appear to pose an unacceptable risk to ecological receptors based on the results of the following assessments and evaluations performed before and after the remedial action at the site as documented in the *Interim Record of Decision, Site 3, Beach Trainfire Ranges, Fort Ord, California* (Site 3 Interim ROD; Army, 1997):

- 1) Baseline Ecological Risk Assessment—*Final Basewide [HTW]RI/FS, Baseline Ecological Risk Assessment (HLA, 1995)*;
- 2) Additional Ecological Risk Evaluations—*Draft Final Additional Ecological Risk Evaluations (HLA, 1998)*; and
- 3) Post-Remediation Ecological Risk Assessment—*Draft Final Post-Remediation Risk Assessment (IT, 2000)*.

Ecological monitoring will be conducted at Site 3 (MRS-22) to confirm the results of the ecological risk assessments and evaluations conducted to date (*HLA, 1995, 1998; IT, 2000*). This data will be evaluated in conjunction with previous ecological risk assessment and evaluation data during the five-year reviews to assess the need for continued ecological monitoring. The next five-year review will occur in 2007.

The Army's decision to leave residual contamination in place is not likely to adversely affect the following federally listed species: Western snowy plover, Smith's blue butterfly, sand gilia, Monterey spineflower, Contra Costa goldfields, or Yadon's piperia.

## 1.3 Description of the Remedy

### 1.3.1 Munitions and Explosives of Concern

Because Track 1 sites do not pose an unacceptable risk to human health or the environment from previous military munitions-related activities, no further action related to MEC is necessary at these sites.

For some Track 1 sites, digging or underground "intrusive" activities are planned for the proposed site reuse and development. No actionable risk was identified through the remedial investigation process. However, in the interest of safety, reasonable and prudent precautions should be taken when conducting intrusive operations at the sites. As a basewide effort to promote safety and because of Fort Ord's history as a military base, the Army provides "ordnance recognition and safety training" to anyone who requests that training. Construction personnel involved in intrusive operations at the former Fort Ord may attend the Army's "ordnance recognition and safety training" to increase their awareness of and ability to identify MEC items. Trained construction personnel will contact an appropriate local law enforcement agency if a potential MEC item is encountered. The local law enforcement agency will arrange a response by the Army.

For specific Track 1 sites (MRS-1, MRS-5, MRS-6, MRS-13A, MRS-22, MRS-24B, MRS-24D, MRS-24E, MRS-27Y, MRS-39, MRS-49, MRS-59A, MRS-62, and MRS-66), the Army recommends construction personnel involved in intrusive operations at these sites attend the Army's "ordnance recognition and safety training." To accomplish that objective, the Army will request notice from future landowners of planned intrusive activities, and in turn will provide ordnance recognition and safety training to construction personnel prior to the start of intrusive work. The Army will provide ordnance recognition and safety refresher training as appropriate. The Army will amend the Munitions Response Site Security Program to include the implementation procedures for offering and providing ordnance recognition and safety training for specific munitions response sites (MRSs) with this recommendation. The Site Security Program will be updated to include the procedures for: (1) requesting the notice; (2) providing the training and refresher training and monitoring the success of the outreach effort; (3) documenting and reporting incidental finds; (4) documenting and reporting on the training activities, and summarizing the success (or effectiveness) of the outreach effort as part of the Site Security Program's annual update.

For the Track 1 sites where ordnance recognition and safety training is recommended (MRS-1, MRS-5, MRS-6, MRS-13A, MRS-22, MRS-24B, MRS-24D, MRS-24E, MRS-27Y, MRS-39, MRS-49, MRS-59A, MRS-62, and MRS-66), at the time of the next five-year review (2007), the Army will assess whether the education program should continue. If information indicates that no MEC items have been found in the course of development or redevelopment of the site, it is expected that the education program may, with the concurrence of the regulatory agencies, be discontinued, subject to reinstatement if a MEC item is encountered in the future.

In the future, should any military munitions-related item be found within any of the Track 1 sites addressed in this ROD, the Army will take an appropriate immediate action (i.e., removing the found item, recording the incident), and within 90 days of the discovery, submit a plan for appropriate follow-on action to EPA and DTSC for consultation, pursuant to Section 7.7(b) of the Fort Ord Federal Facility Agreement (FFA).

### 1.3.2 Ecological Risks at Site 3 (MRS-22)

Because Site 3 (MRS-22) does not appear to pose an unacceptable risk to the environment (ecological receptors) from metals in soil, no further remedial action with monitoring is necessary at this site. Ecological monitoring will be conducted at Site 3 (MRS-22) to confirm the results of the ecological risk assessments and evaluations conducted to date (*HLA, 1995, 1998; IT, 2000*). Monitoring will be conducted in accordance with an approved work plan developed pursuant to Section 8.3 of the FFA. This data will be evaluated in conjunction with previous ecological risk assessment and evaluation data during the five-year reviews to assess the need for continued ecological monitoring and make sure the decision remains protective of the environment. The next five-year review will occur in 2007.

## 1.4 Statutory Determination

No Further Action Related to Munitions and Explosives of Concern at Track 1 sites, and No Further Remedial Action with Monitoring for Ecological Risks from Chemical Contamination at Site 3 (MRS-22) is necessary to ensure the protection of human health and the environment. However, because these remedies will not result in munitions and explosives of concern (MEC) remaining on-site above levels that allow for unlimited use and unrestricted exposure, a five-year review is not required for these actions.

Because of other operable units not subject to this ROD, the Army conducts a “five-year review” at the former Fort Ord every five years. 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. Although not required, the Army agrees to evaluate all Track 1 sites during the five-year reviews to ensure they remain protective of human health and the environment. The next five-year review will occur in 2007.

In addition, because the Army will continue to conduct ecological monitoring at Site 3 (MRS-22), the five-year review process will be used to evaluate ecological monitoring data in conjunction with previous ecological risk assessment and evaluation data to assess the need for continued ecological monitoring.

**RECORD OF DECISION**

**NO FURTHER ACTION RELATED TO MUNITIONS AND EXPLOSIVES OF CONCERN  
TRACK 1 SITES**

**NO FURTHER REMEDIAL ACTION WITH MONITORING FOR ECOLOGICAL RISKS  
FROM CHEMICAL CONTAMINATION  
AT SITE 3 (MRS-22)**

**FORMER FORT ORD, CALIFORNIA**

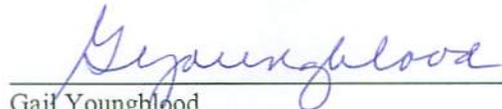
Signature Sheet for the foregoing Record of Decision: Selection of No Further Action Related to Munitions and Explosives of Concern—Track 1 Sites, Former Fort Ord, California, among the United States Army, the United States Environmental Protection Agency, and the California Environmental Protection Agency, Department of Toxic Substances Control.

Signature Sheet for the foregoing Record of Decision: Selection of No Further Remedial Action with Monitoring for Ecological Risks from Chemical Contamination at Site 3 (MRS-22), 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, and Regional Water Quality Control Board.



Thomas E. Lederle  
Director, Base Realignment and Closure (BRAC)  
Hampton Field Office

1 APR 2005  
Date



Gail Youngblood  
BRAC Environmental Coordinator  
Fort Ord BRAC Office

1 Apr 2005  
Date

**RECORD OF DECISION**

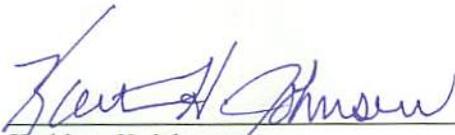
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TRACK 1 SITES**

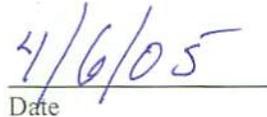
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AT SITE 3 (MRS-22)**

**FORMER FORT ORD, CALIFORNIA**

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Kathleen H. Johnson  
Chief, Federal Facilities and Site Cleanup Branch  
U.S. Environmental Protection Agency  
Region IX

  
Date

**RECORD OF DECISION**

**NO FURTHER ACTION RELATED TO MUNITIONS AND EXPLOSIVES OF CONCERN  
TRACK 1 SITES**

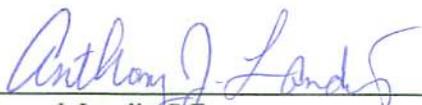
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FROM CHEMICAL CONTAMINATION  
AT SITE 3 (MRS-22)**

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The State of California, Department of Toxic Substances Control (DTSC) had an opportunity to review and comment on the ROD. DTSC has elected to undertake the following additional precautions at Site 3 (MRS-22). DTSC will enter into a Memorandum of Understanding for further surveillance with the California Department of Parks and Recreation, which will be acquiring Site 3 (MRS-22). DTSC also intends to enter into a Land Use Covenant with the California Department of Parks and Recreation to enhance protection of human health. These documents will address further monitoring and use of the land at Site 3 (MRS-22).

  
\_\_\_\_\_  
Anthony J. Landis, P.E.  
Chief of Operations  
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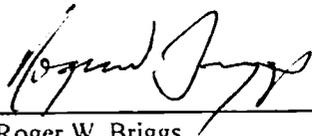
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**RECORD OF DECISION**

**NO FURTHER REMEDIAL ACTION WITH MONITORING FOR ECOLOGICAL RISKS  
FROM CHEMICAL CONTAMINATION  
AT SITE 3 (MRS-22)**

**FORMER FORT ORD, CALIFORNIA**

Signature Sheet for the foregoing Record of Decision: Selection of No Further Remedial Action with Monitoring for Ecological Risks from Chemical Contamination at Site 3 (MRS-22), 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, and Regional Water Quality Control Board.



\_\_\_\_\_  
Roger W. Briggs  
Executive Officer  
California Environmental Protection Agency  
California Regional Water Quality Control Board, Central Coast Region

4-4-05  
Date

## 2.0 DECISION SUMMARY

This section presents a summary of the Army's decisions regarding sites on the former Fort Ord that have been identified as requiring:

- 1) No Further Action Related to Munitions and Explosives of Concern (MEC) to protect human health and the environment at Track 1 sites; and
- 2) No Further Remedial Action with Monitoring for Ecological Risks from Chemical Contamination to protect the environment at Site 3 (MRS-22; also known as the Beach Trainfire Ranges). Ecological monitoring will be conducted at Site 3 (MRS-22) to confirm the results of the ecological risk assessments and evaluations conducted to date (*HLA, 1995, 1998; IT, 2000*). This data will be evaluated in conjunction with previous ecological risk assessment and evaluation data during the five-year reviews to assess the need for continued ecological monitoring and make sure the decision remains protective of the environment. The next five-year review will occur in 2007.

### 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. The base comprises approximately 28,000 acres adjacent to the cities of Seaside, Sand City, Monterey, and Del Rey Oaks to the south and Marina to the north. The Southern Pacific Railroad and Highway 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.

### 2.2 Site History

Beginning with its founding in 1917, Fort Ord served primarily as a training and staging facility for cavalry and infantry troops. From 1947 to 1974, Fort Ord was a basic training center. After 1974, the 7<sup>th</sup> Infantry Division occupied Fort Ord. Fort Ord was selected in 1991 for decommissioning, but troop reallocation was not completed until 1993. Although Army personnel still operate the base, no active Army division is stationed at the former Fort Ord.

Since 1917, portions of the former Fort Ord were used by cavalry, field artillery, and infantry units for maneuvers, target ranges, and other purposes. Military munitions were fired into, fired upon, or used on the facility in the form of artillery and mortar projectiles, rockets and guided missiles, rifle and hand grenades, land mines, pyrotechnics, bombs, and demolition materials. These military munitions items may be present in parts of the former Fort Ord. A Glossary of Munitions Response Program Terms is provided in Appendix A.

Since the base was selected in 1991 for base realignment and closure (BRAC) and was officially closed in September 1994, site visits, historic and archival investigations, military munitions sampling, and removal actions have been performed and documented in preparation for transfer and reuse of former Fort Ord property. The Ord Military Community, located within the Main Garrison portion of former Fort Ord, will be retained by the Army. Since base closure in September 1994, lands outside the Ord Military Community have 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 Bureau of Land Management (BLM). Other areas on the installation have been or will be transferred to federal, state,

local, and private entities through economic development conveyance, public benefit conveyance, negotiated sale, or other means.

## 2.3 Enforcement and Regulatory History

### *Munitions Response RI/FS*

The reuse of the former Fort Ord following transfer of property increases the possibility of the public being exposed to explosive hazards. 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 RI/FS)—now termed the basewide Munitions Response RI/FS (basewide MR RI/FS)—consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). A Federal Facility Agreement (FFA) was signed in 1990 by the Army, EPA, the Department of Toxic Substances Control (DTSC; a part of the California Environmental Protection Agency [Cal/EPA]; formerly the Department of Health Services or DHS) and the Regional Water Quality Control Board (RWQCB), also a part of Cal/EPA. The FFA established schedules for performing remedial investigations and feasibility studies and requires that remedial actions be completed as expeditiously as possible.

EPA and DTSC believe that the MEC which may be present at these Track 1 sites meets the definition of a CERCLA hazardous substance either because it contains chemicals which are listed as hazardous substances or because it meets the definition of a hazardous waste under the Resource Conservation and Recovery Act (RCRA). The Army, on the other hand—while recognizing that some components of MEC are pollutants or contaminants, as defined in CERCLA, and further that MEC items, once managed for disposal, meet the the definition of a solid waste, and if reactive, also constitutes a characteristic hazardous waste as specified in RCRA—does not accept the blanket assertion that all MEC is a hazardous substance or a hazardous waste. Despite these differing views, the parties have agreed on the importance of moving forward with the Military Munitions Response Program (MMRP) and transfer of property at the former Fort Ord. Regardless of how MEC is described, should actual items be discovered, they will be analyzed and managed in accordance with applicable State and federal requirements. 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.

In the future, should any military munitions-related item be found within any of the Track 1 sites addressed in this ROD, the Army will take an appropriate immediate action (i.e., removing the found item, recording the incident), and within 90 days of the discovery, submit a plan for appropriate follow-on action to EPA and DTSC for consultation, pursuant to Section 7.7(b) of the Fort Ord Federal Facility Agreement (FFA).

The Army has been conducting military munitions sampling and removal actions at identified Munitions Response Sites (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 sites for use in the basewide MR RI/FS. The Army is performing its activities pursuant to the President's authority under the 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. However, regulatory agencies (EPA and DTSC—a part of Cal/EPA) have been and will continue to be involved and provide input during military munitions removal and remedial activities. The basewide MR RI/FS will review and evaluate past investigative and removal actions, as well as recommend future response actions deemed necessary to protect human health and the environment on the basis of proposed reuses specified in the Fort Ord Reuse Authority (FORA) Reuse Plan.

Information will be gathered and evaluated during the basewide MR RI/FS to categorize all areas of the former Fort Ord according to actions that have been taken or future remedial actions that are identified as necessary to mitigate explosive safety hazards associated with military munitions. The information will be evaluated with regard to site knowledge, the quality of the available information, work completed, and intended future land uses. The basewide MR RI/FS will contain a comprehensive evaluation of all MEC-related data for the entire former Fort Ord and will evaluate long-term response alternatives for cleanup and risk management of MEC.

The basewide MR RI/FS 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 RI/FS Work Plan (*USACE, 2000*). Track 0 areas at the former Fort Ord that 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, and fall into one of the three categories defined in Section 1.0 of this ROD. Track 2 sites are areas at the former Fort Ord where MEC items were present, and MEC removal actions have been completed. Track 3 sites are areas at the former Fort Ord where MEC items are known or suspected to be present, but MEC investigations have not yet been completed.

All basewide MR RI/FS documents have been or will be prepared in cooperation with the EPA and DTSC (a part of Cal/EPA) in accordance with the Federal Facility Agreement (FFA); available for public review and comment; and placed in the Administrative Record and local information repositories.

### ***Site 3 (MRS-22)***

Environmental investigations began at the former Fort Ord in 1984. The EPA placed Fort Ord on the National Priorities List (NPL) of Superfund sites on February 21, 1990, due to evidence of contaminated soil and groundwater. In 1991, the *Basewide Remedial Investigation / Feasibility Study, Fort Ord, California* for soil and groundwater contamination (hazardous and toxic waste, or HTW) began (Basewide [HTW] RI/FS; *HLA, 1995*), and Fort Ord was placed on the Base Realignment and Closure (BRAC) List and was officially closed in September 1994.

The former Beach Trainfire Ranges were identified as Site 3 in the Final Basewide (HTW) RI/FS (*HLA, 1995*). The site was used for small arms training beginning in the 1940s, and usage continued until base closure. Spent bullets accumulated on the sand dunes that formed the “backstops” for the targets. The beach ranges provide critical habitat for several plant and animal species that are listed as rare, threatened, or species of special concern (*Harding ESE, 2002*). The Basewide (HTW) RI/FS evaluated cleanup alternatives for soil containing lead and other metals (*HLA, 1995*) to protect human health, and indicated further study was required to assess impacts to the environment (ecological receptors) at the site.

The selected remedy for lead consisted of the excavation of contaminated soil and spent ammunition and was documented in the Interim Record of Decision, Site 3, Beach Trainfire Ranges, Fort Ord, California (Site 3 Interim ROD; *Army, 1997*). After the cleanup was completed, post-remediation sampling determined that the remaining site-wide average lead concentration in soil was 161 mg/kg (*IT, 2000*).

Subsequent ecological risk assessments and evaluations of risks to plants or animals after the cleanup for lead had been completed at Site 3 (MRS-22) included a Post-Remediation Ecological Risk Assessment (*IT, 2000*).

All documents regarding Site 3 (MRS-22) have been or will be prepared in cooperation with the EPA, DTSC and RWQCB (parts of Cal/EPA) in accordance with the Federal Facility Agreement (FFA); available for public review and comment; and placed in the Administrative Record and local information repositories.

## 2.4 Highlights of Community Participation

In September 2004, the Army presented the Track 1 Proposed Plan for former Fort Ord to the public for review and comment (*Army, 2004*). The Proposed Plan presented the preferred alternative of No Further Action Related to MEC for 21 proposed Track 1 sites, as well as future Plug-In sites that meet the definition of a Track 1 site; and No Further Remedial Action with monitoring for ecological risks from chemical contamination at Site 3 (MRS-22). The plan also summarized information in the Track 1 OE RI/FS, Site 3 (MRS-22) ecological assessments and evaluations, and other documents in the Administrative Record. These documents are available to the public at the following locations:

- Seaside Branch Library, 550 Harcourt Street, Seaside, California;
- California State University Monterey Bay (CSUMB) Library Learning Complex, 100 Campus Center, Building 12, Seaside, California; and
- Former Fort Ord Administrative Record, Building 4463, Gigling Road, Ord Military Community, California.

Comments on the Proposed Plan were accepted during a 30-day public review-and-comment period beginning on September 15, 2004, with a proposed closing date of October 15, 2004; in response to public request, the public comment period closing was extended to November 15, 2004. A public meeting was held on September 29, 2004, at Stilwell Community Center, Building 4260 Gigling Road, Ord Military Community, California. At that time, the public had the opportunity to ask the Army and regulatory agencies questions and submit oral comments about the plan. In addition, written comments were accepted during the public comment period.

Responses to comments received during the public comment period are included in the Responsiveness Summary presented in Section 3.0 of this ROD. Any significant changes to the Proposed Plan are included in Section 2.12.

## 2.5 Scope and Role of No Further Action

The scope of the No Further Action process is to identify sites where remedial action is not necessary to protect human health and the environment. The role of the Track 1 No Further Action process is to support the following determinations:

- 1) The No Further Action Record of Decision documents that, related to munitions and explosives of concern at Track 1 sites: (1) any necessary remedial actions consistent with CERCLA have been taken; or (2) remedial action is not necessary.
- 2) The No Further Action Record of Decision documents that, related to ecological risks from chemical contamination at Site 3 (MRS-22): (1) any necessary remedial actions consistent with CERCLA appear to have been taken; or (2) remedial action does not appear to be necessary.

## 2.6 Track 1 Process

This section summarizes the documentation and management procedures for current Track 1 sites addressed in this ROD as well as future sites identified as part of the "Plug-In" process defined in Section 2.7.

### 2.6.1 Track 1 ROD Process

Subsequent to the Track 1 OE RI/FS, the Track 1 Proposed Plan proposed No Further Action Related to MEC for the Track 1 sites described in the following sections. Consistent with the requirements of CERCLA, notification of the proposed decision was published in a major local newspaper and distributed for public review. A 60-day public comment period was provided and a public meeting was held. This Track 1 ROD selecting the action, has been prepared by the Army for review and approval by the EPA, and review by DTSC. The ROD identifies specific sites described in Section 2.9 that currently meet the No Further Action requirements.

### 2.6.2 Track 1 "Plug-In" Process

The Proposed Plan also introduced the "Plug-In" process for Munitions Response Sites (MRSs) that may be identified in the future for Track 1 status after further research has been completed in the basewide MR RI/FS. Figure 1 summarizes the implementation of the Track 1 "Plug-In" process.

After the ROD is signed, No Further Action decisions for future Track 1 Plug-In sites will be proposed and documented in Approval Memoranda. These memoranda will provide the same level of information that was included in the RI Site Reports in the Track 1 OE RI/FS (*MACTEC, 2004*), and will describe the rationale for Track 1 designation. The Approval Memorandum for each future Track 1 Plug-In site will include the following:

- 1) A description of the site;
- 2) A description of the historical use of the site;
- 3) A rationale for the designation of a site as Track 1; and
- 4) A map of the site detailing its location and any pertinent available MEC-related information.

There will be a public review process for all Approval Memoranda, and these memoranda will be primary documents under the Fort Ord Federal Facility Agreement (FFA). Each Track 1 Plug-In Approval Memorandum will be submitted and finalized according to the agency consultation process outlined in Section 7 of the FFA. Following the agency review of draft Approval Memorandum and necessary revisions, the Army will submit the Approval Memorandum for a 30-day public review and comment period. A public notice will be posted in a local newspaper announcing the opportunity to review and comment on the proposed decision(s). Subsequently, the Army will submit to the agencies a summary of public comments and responses to the comments, and any needed revisions to the Approval Memorandum, at which time the Approval Memorandum will be considered a draft final document as defined in the FFA. Within 30 days of this submittal, the agencies will, in writing, either concur with or acknowledge the Army's decision(s), or initiate a dispute per Section 12 of the FFA.

When the written concurrence from EPA and acknowledgement from DTSC are received, a public notice will be posted in a local newspaper. Planned and completed 'No Further Action Related to MEC' site determinations will also be described in Fort Ord environmental cleanup newsletters (formerly *The*

*Advance*) prepared by the Army for local residents. Notification of these proposed and completed activities will also be distributed to appropriate local agencies. The Proposed Plan and ROD for Track 1 and other tracks, as well as all associated Approval Memoranda, will be placed in the former Fort Ord Administrative Record and the local information repositories.

## 2.7 Site Characteristics

This section summarizes the Track 1 sites, how they are categorized, and what qualifies them for inclusion in the Track 1 process.

### 2.7.1 Definition of Track 1 Sites

Track 1 sites at the former Fort Ord are those sites where military munitions were suspected to have been used, but based on the RI/FS for each site, it falls into one of the following three categories:

- Category 1: There is no evidence to indicate military munitions were used at the site, i.e., suspected training did not occur; or
- Category 2: The site was used for training, but the military munitions items used do not pose an explosive hazard, i.e., training did not involve explosive items; or
- Category 3: The site was used for training with military munitions, but military munitions items that potentially remain as a result of that training do not pose an unacceptable risk based on site-specific evaluations conducted in the Track 1 OE RI/FS. Field investigations identified evidence of past training involving military munitions, but training at these sites involved only the use of practice and/or pyrotechnic items that are not designed to cause injury. In the unlikely event that a live item of the type previously observed at the site is found, it is not expected that the item would function by casual contact (i.e., inadvertent and unintentional contact).

The locations of the 21 Track 1 sites are shown on Plate 2. All Track 1 sites identified herein will be eliminated from further investigation under the basewide MR RI/FS, on the basis of this ROD.

The decision for entering sites into the Track 1 process was based on the results of the Track 1 OE RI/FS (MACTEC, 2004). The Track 1 OE RI/FS presented: (1) an evaluation of archival and field-based investigation data for each Track 1 site, and (2) the rationales for determining whether no further investigation regarding MEC was required for these sites.

### 2.7.2 Track 1 "Plug-In" Sites

Future sites may be identified as being eligible for Track 1, after further research has been completed in the basewide MR RI/FS. A Munitions Response Site meeting the Track 1 criteria will be proposed for Track 1 through a "Plug-In" process by which an Approval Memorandum will be prepared that presents the rationale for designating the sites as Track 1. When approved by the regulatory agencies, the Approval Memorandum will become the decision document for the specific Track 1 site. Section 2.6 summarizes the documentation and management procedures to be followed during the "Plug-In" process.

## 2.8 Track 1 OE RI/FS Background

This section provides background information on the Track 1 OE RI/FS data collection and review conducted for the 21 Track 1 sites shown on Plate 2. Section 2.9 presents a summary of the stand-alone

RI Site Reports presented in the Track 1 OE RI/FS (*MACTEC, 2004*), which included the following sections:

- Site Description
- Site History and Development
- Potential Military Munitions Based on Historical Use of the Site
- History of Military Munitions Investigations
- Conceptual Site Model
- Site Evaluation
- Conclusions and Recommendations
- References

Sites included in the Track 1 OE RI/FS were selected based on the results of the Literature Review and an evaluation of data collected during one or more site visits incorporating visual and geophysical inspections during reconnaissance, sampling, or site walks.

To be included in the Track 1 decision process, the results of the evaluation performed for a site must indicate a strong weight of evidence that the information from the Literature Review and field investigations supports No Further Action Related to MEC as determined by the 'Project Team' consisting of the Army, EPA, and DTSC. Site-specific evaluations of archival data (literature review) and field-based investigation data (field reconnaissance, sampling, and site walks) were conducted for each of the 24 candidate Track 1 sites included in the Track 1 OE RI/FS (*MACTEC, 2004*) to determine whether sufficient data was available to conclude that No Further Action Related to MEC was required. At three of the twenty-four candidate Track 1 sites evaluated in the Track 1 OE RI/FS (MRS-2, MRS-17, and MRS-24C), the results of the RI indicated further evaluation was warranted. These sites were not included in the Track 1 Proposed Plan (*Army, 2004*). For the remaining 21 Track 1 sites evaluated in the Track 1 OE RI/FS (*MACTEC, 2004*) and included in the Proposed Plan (*Army, 2004*), the project team determined the results of the evaluations performed indicated a strong weight of evidence that the information from the Literature Review and field investigations support No Further Action Related to MEC at these sites.

Information evaluated for each site included the adequacy of the reconnaissance, sampling, or site walk conducted, the performance of the geophysical equipment used during investigation, data management, and the appropriateness of the site boundaries. Each site report was prepared as a stand-alone RI report (Site Report) that provided the basis for determining that a strong weight of evidence supports no further MEC-related action as determined by the project team. Site-specific data were evaluated in the Track 1 OE RI/FS based on objectives and procedural guidance provided in the approved *Final Plan for Evaluation of Previous Work, Ordnance and Explosives Remedial Investigation/Feasibility Study, Former Fort Ord, California* (HLA, 2000).

Table 1 of this ROD lists the 21 Track 1 sites and summarizes the results of the site-specific remedial investigations conducted in the Track 1 OE RI/FS (*MACTEC, 2004*). Descriptions of the processes followed for evaluation of archival data (literature review) and field-based investigation data (reconnaissance, sampling, and site walks) for the Track 1 sites are summarized below.

### ***Literature Review***

The literature review process included gathering and reviewing files from multiple sources. References for each of the sources used are provided in the individual Track 1 OE RI/FS Site Reports. Previous investigations at the former Fort Ord that documented military munitions-related activities were reviewed along with historical records. Historical records reviewed included range control files, historical maps, aerial photographs, historical film footage, real estate records, and newspaper articles. Included in the review were relevant munitions response contractor after action reports (AARs); archives search reports (ASRs); the Ordnance Detection and Discrimination Study (ODDS); field training manuals; and technical manuals. Information from historical training maps and aerial photographs was integrated into a project Geographical Information System (GIS). Data were integrated into the GIS according to procedures described in the Standard Operating Procedures (SOPs) prepared for the project.

Interviews were also conducted with retired military personnel, active enlisted and civilian personnel that served at the former Fort Ord, and munitions response contractors. In addition, information on the physical location of a site, its development history, and the results of the remedial investigation and excavation activities at any coincident Installation Restoration Program (IRP) sites was considered in the literature review process.

### ***Reconnaissance***

Reconnaissance is the first step in the data collection effort and is generally part of a Preliminary Assessment/Site Inspection phase. Reconnaissance activities were conducted at Track 1 sites as part of the (1) Fort Ord Archives Search Preliminary Assessment Site Investigation (PA/SI), and (2) Basewide Range Assessment (BRA). Reconnaissance activities conducted under the Fort Ord Archive Search PA/SI were performed at some potential Track 1 sites to look for evidence of past use of military munitions. The UXO Safety Specialist walked a portion of the site visually searching the path walked while simultaneously searching for subsurface anomalies using a magnetometer. The Fort Ord BRA reconnaissance was conducted by a two-person team that included a military munitions specialist and a second member trained in munitions recognition. Prior to conducting the site reconnaissance, historical features were identified from training maps and aerial photographs and their locations entered into a GPS unit (waypoints). The team then conducted the site visit using a magnetometer to detect anomalies as they navigated to the waypoints. The path of the site walk was recorded digitally with a Global Positioning System (GPS) unit.

### ***Sampling***

Sampling is generally the next step in collection of data and involved dividing the site into grids or lanes and conducting geophysical sweeps of the site as directed by an approved work plan. Some sites went directly to sampling, skipping the reconnaissance step, based on the results of the initial 1993 Archive Search Report. Military munitions-related field investigations and sampling activities were conducted at Track 1 sites by the Army's munitions response contractors according to contractual and/or work plan requirements in place at the time the work was conducted. Each of the Track 1 RI Site Reports includes: (1) a detailed summary of activities conducted by the Army's munitions response contractors, and (2) an evaluation of the work conducted based on whether it meets the data quality objectives (DQOs) that were established for the basewide MR RI/FS and Track 1 sites in the Plan for Evaluation of Previous Work (HLA, 2000). Although Track 1 DQOs were not established at the time the munitions response contractors conducted field investigations and sampling activities at Track 1 sites, the purpose and objectives of the work conducted at the sites based on contractual and/or work plan requirements and approved methodologies were evaluated against the Track 1 DQOs in each RI Site Report.

## ***Site Walks***

Site Walks were conducted following the submittal of the Draft Final Track 1 OE RI/FS to address regulatory agency requests for additional site information. Site walk methodologies ranged from conducting visual surveys to sweeping the path walked with a magnetometer and excavation of detected anomalies depending on the site information needed. Site walks were conducted by a two or three-person team using a GPS unit to record the path of the site walk and perform a visual survey of portions of the site where military munitions-related data had not been collected. At some sites, a regulatory agency member of the project team also participated in the site walk. In addition, a Military Munitions Specialist also swept the path with a magnetometer to detect buried anomalies at some of the sites.

## 2.9 Track 1 Site Summaries

For each of the 21 Track 1 sites for which No Further Action Related to MEC is required as described in the Track 1 OE RI/FS (*MACTEC, 2004*), this section summarizes the (1) Site Description, (2) Site Characterization, (3) Rationale for No Further Action Related to MEC, and (4) if applicable to the site, recommendations for Ordnance Recognition and Safety Training. Table 1 summarizes key information about each site.

### 2.9.1 MRS-1—Flame Thrower Range

#### ***Site Description***

The site is 25 acres in size, and is located in the northwestern part of former Fort Ord as shown on Plate 2. MRS-1 is currently occupied by housing. Proposed reuse plans include residential development. Based on the literature review and sampling, the site appears to have been used for camouflage training, mine and booby trap training, non-firing mortar training, and flame thrower training. Most of this area has been used for military housing for over 40 years.

#### ***Site Characterization***

Sampling in nearby open areas near existing housing was performed under contract with the Army by Human Factors Applications (HFA) in 1994 and USA Environmental in 1998 and 1999. Several inert or expended munitions debris items including practice mines were found and removed. No MEC (i.e., live items) were found during the sampling events. The following munitions debris items were found and removed during the 1994 and 1998 sampling: one M1 practice mine; four inert scrap antitank land mines; one inert practice antipersonnel mine, M8 Series (found in the area between MRS-1 and MRS-6); one expended 0.30-caliber small arms cartridge case; two expended practice mine fuzes (M604); and one expended M2 ignition cartridge from a flamethrower.

Discovery of an expended M2 ignition cartridge supports previous data indicating that the area was historically used for flamethrower training. Because practice mines and fuzes were found, it appears that the area identified by the Army's previous munitions response contractors as MRS-1 was also used for practice mine and booby trap training. These military munitions items were produced prior to or during the time period (1950s) that the site was used for training. This supports that these items were present at the site as a result of past training practices. During sampling, there was no evidence discovered that the training at this site involved the use of high explosives items. Practice mines, like those found during sampling, are sometimes equipped with smoke charges, which can be considered pyrotechnic or low explosive devices.

### ***Rationale for Taking No Further Action Related to MEC***

Based on review of existing information, MEC is not expected to be found at MRS-1, and No Further Action Related to MEC is required for this site. MRS-1 meets the Track 1, Category 3 criteria because historical research and field investigations identified evidence of past training involving military munitions, and training at this site involved only the use of practice and pyrotechnic items that are not designed to cause injury.

The following MEC items may be present at the site based on past site use: flamethrower ignition cartridges; booby trap firing devices and simulators; and practice antitank and antipersonnel mines and fuzes. In the unlikely event that a MEC item of the type previously observed at the site is found at MRS-1, it is not expected that it could be caused to function through casual contact (i.e., inadvertent and unintentional contact). In addition, the MEC types potentially present at MRS-1 have been exposed to moisture, degradation, and weathering for many years which could prevent many of them from functioning. Additionally, practice antitank mines are designed to be triggered by the weight of a vehicle, commonly in excess of several hundred pounds.

Intrusive activities are expected as part of proposed site reuse and development. Ordnance recognition and safety training during construction activities is recommended for MRS-1. Section 1.3.1 of this ROD (*Description of the Remedy*) describes the scope of the safety training program.

## 2.9.2 MRS-5—South of East Garrison

### ***Site Description***

The site is 30 acres in size, and is located in the eastern portion of former Fort Ord next to the East Garrison as shown on Plate 2. This site is currently open space with proposed reuse plans to include a habitat corridor and community development. The site was identified based on the presence of an inert 3.5-inch rocket motor found and removed from the branches of a tree. MRS-5 appears to have been used for or was within the downrange area of several small arms ranges from the 1930s until base closure in 1994.

### ***Site Characterization***

Reconnaissance was performed within a portion of MRS-5 as part of the Former Fort Ord Basewide Range Assessment (BRA). MEC sampling was performed under contract with the Army by HFA in 1994. No MEC or munitions debris items were found. In 1994, HFA conducted sampling in 7 areas at MRS-5 and 10 areas at nearby MRS-59A. All anomalies detected during the HFA sampling were to be investigated; however, based on the available HFA records, it is not known if the anomalies identified at MRS-5 were intrusively investigated.

No training areas where military munitions would be used were identified on available historical training maps. A site walk was conducted in 2003 at a location selected in order to supplement information collected during previous sampling efforts at this site. The site walk was conducted by a Military Munitions Specialist using a magnetometer to detect buried anomalies. The only items found during the site walk were munitions debris (an expended illumination signal), small arms ammunition, and spent small arms ammunition, which support the conclusion that MRS-5 was used for general training and was not an impact area.

### ***Rationale for Taking No Further Action Related to MEC***

Based on review of existing information, MEC is not expected to be found at MRS-5, and No Further Action Related to MEC is required for this site. MRS-5 meets the Track 1, Category 3 criteria because historical research and field investigations identified evidence of past training involving military munitions and training at this site involved only the use of pyrotechnic items that are not designed to cause injury. The following MEC items may be present at the site based on past site use: illumination signals. In the unlikely event that a MEC item of the type previously observed at the site is found at MRS-5, it is not expected that it could be caused to function through casual contact (i.e., inadvertent and unintentional contact). In addition, the MEC types potentially present at MRS-5 have been exposed to moisture, degradation, and weathering for many years which could prevent them from functioning.

Intrusive activities are expected as part of proposed site reuse and development. Ordnance recognition and safety training during construction activities is recommended for MRS-5. Section 1.3.1 of this ROD (*Description of the Remedy*) describes the scope of the safety training program.

### 2.9.3 MRS-6—Mine and Booby Trap Training Area

#### ***Site Description***

The site is 2 acres in size, and is located in the northwest portion of former Fort Ord near residential housing as shown on Plate 2. The site is currently undeveloped with proposed reuse plans to include development with reserve areas or development with restrictions. Review of training maps, aerial photographs, and other Fort Ord maps indicate mine and booby trap training occurred at the site. The adjacent areas have been used as a school and military housing for over 40 years.

#### ***Site Characterization***

Sampling was performed under contract with the Army by HFA in 1994, and the following munitions debris were found and removed from the site and an area to the south of the site: (1) one inert antitank practice M1 mine, and (2) five inert practice mines (found in the area between MRS-1 and MRS-6). In addition, one live small arms cartridge was found.

These items were produced prior to or during the time period (1950s) that the site was used for training. This supports that these items were present at the site as a result of past training practices. Because only one small arms cartridge was found, it is unlikely that the site was used for small arms training. There was no evidence found to suggest that the site was used as an impact area. No MEC were identified during sampling activities. With the exception of the small arms cartridge, the munitions debris found (inert practice mines) are consistent with what would be expected based on past training practices at the site.

The Final OE RI/FS Site Report for MRS-6 recommended the site boundary be expanded to the south to include the area identified as “Mine and Booby Trap Area” on the circa 1954 training map. However, a 2004 site walk conducted in this area in order to supplement site sampling data, identified the same type of munitions debris items found during previous sampling events, and those expected in a practice mine and booby-trap training area. The site walk was conducted by a Military Munitions Specialist using a magnetometer to detect buried anomalies. The only munitions debris items found during the site walk were expended practice mine fuzes and an expended firing device. Because MEC is not expected and no MEC has been found, it was determined that it is not necessary to expand the boundary of MRS-6.

### ***Rationale for Taking No Further Action Related to MEC***

Based on review of existing information, MEC is not expected to be found at MRS-6, and No Further Action Related to MEC is required for this site. MRS-6 meets the Track 1, Category 3 criteria because historical research and field investigations identified evidence of past training involving military munitions, and training at this site involved only the use of practice and pyrotechnic items that are not designed to cause injury. The following MEC items may be present at the site based on past site use: practice antitank and antipersonnel mines and fuzes; and booby trap firing devices and simulators. In the unlikely event that a MEC item is found of the type previously observed at the site at MRS-6, it is not expected that it could be caused to function through casual contact (i.e., inadvertent and unintentional contact). In addition, the MEC types potentially present at MRS-6 have been exposed to moisture, degradation, and weathering for many years which could prevent many of them from functioning. Additionally, practice antitank mines are designed to be triggered by the weight of a vehicle, commonly in excess of several hundred pounds.

Intrusive activities are expected as part of proposed site reuse and development. Ordnance recognition and safety training during construction activities is recommended for MRS-6. Section 1.3.1 of this ROD (*Description of the Remedy*) describes the scope of the safety training program.

#### 2.9.4 MRS-13A—Practice Mortar Range

##### ***Site Description***

The site is 61 acres in size, and is located in the northern portion of the former Fort Ord as shown on Plate 2. Proposed reuse plans for MRS-13A include residential development and a park. The majority of the site has contained residential housing for nearly 30 years. The area was extensively graded in the 1970s and housing was built on portions of the site. The western portion of the site was used as a landfill in the 1960s. All landfill material in the western portion of MRS-13A was excavated (removed) and transported to the main landfill south of Imjin Road in the 1990s. Several munitions debris items and three unexploded ordnance (UXO) items were identified within and adjacent to MRS-13A during landfill excavation and housing development grading activities and were removed: three live ground signals and loose pyrotechnic material; three inert hand grenade primer detonators; two inert 40mm signal cartridges; an inert fin assembly for a 3.5-inch rocket; a live rifle grenade; miscellaneous projectiles; and two inert 3.5-inch rocket motors.

All items with the exception of one inert 3.5-inch rocket motor were found within or adjacent to the landfill excavation boundaries during construction activities associated with remediation at the landfill, or during housing construction, and were most likely placed in the landfill as part of waste disposal activities. The one item discovered within MRS-13A but outside and to the south east of the landfill boundaries (an inert 3.5-inch rocket motor) was found within a trench at a depth of 2 feet where grading was performed to create Imjin Road. Because another inert 3.5-inch rocket motor was found within the landfill, it is possible the presence of the motor outside the landfill could have been related to transportation of waste materials to the landfill, and subsequent grading for Imjin Road resulted in its burial. The MEC items and munitions debris found in and adjacent to the landfill were likely present due to waste disposal activities conducted while the landfill was in use, and are not considered representative of military munitions-related training activities. Based on the literature review, the site was identified as a practice mortar training area using inert projectiles in the 1950s.

### ***Site Characterization***

Sampling was performed under contract with the Army by HFA in 1994 and USA Environmental, Inc. /CMS Environmental, Inc. (CMS) in 1997. No military munitions items were found in 1994, and two munitions debris items (an expended grenade fuze and an expended illumination signal) were found next to the site in 1997. A site walk was conducted in 2004 at a location selected in order to supplement information collected during previous sampling efforts at this site. The site walk was conducted by a Military Munitions Specialist using a magnetometer to detect buried anomalies. The only munitions debris item found during the site walk was an inert training mortar; small arms ammunition clips and expended small arms ammunition were also observed.

### ***Rationale for Taking No Further Action Related to MEC***

Based on review of existing information, MEC is not expected to be found at MRS-13A, and No Further Action Related to MEC is required for this site. MRS-13A meets the Track 1, Category 2 criteria because the site was used for training, but the military munitions items used do not pose an explosive hazard, or potentially remaining MEC items do not pose an explosive hazard. The following MEC items may be present at the site based on past site use: illumination signals; pyrotechnic fuzes; and training mortar cartridges. In the unlikely event that a MEC item of the type previously observed at the site is found at MRS-13A, it is not expected that it could be caused to function through casual contact (i.e., inadvertent and unintentional contact). In addition, the MEC types potentially present at MRS-13A have been exposed to moisture, degradation, and weathering for many years which could prevent them from functioning.

Intrusive activities are expected as part of proposed site reuse and development. Ordnance recognition and safety training during construction activities is recommended for MRS-13A. Section 1.3.1 of this ROD (*Description of the Remedy*) describes the scope of the safety training program.

## 2.9.5 MRS-20—Recoilless Rifle Training Range

### ***Site Description***

The site is 7 acres in size, and is located in the southwestern portion of the Main Garrison near residential housing and Highway 1 as shown on Plate 2. This site is currently open space with proposed reuse plans, which include development. The site was identified as a potential Recoilless Rifle Training Range and was reportedly used for various training activities including recoilless rifle, machine gun, and other unknown types of training. Recoilless rifles are portable antitank weapons that were either shoulder- or ground-fired, and in some cases, could be fired by either method.

### ***Site Characterization***

Sampling of an area down range and east of MRS-20 in the assumed target area was performed under contract with the Army by HFA in 1994; no evidence of military munitions use was found. Based on the minimum range safety distances for recoilless weapons ranges, it is not feasible that the MRS-20 area could have supported a live fire range. The area immediately adjacent has been used as military housing for over 50 years.

### ***Rationale for Taking No Further Action Related to MEC***

Based on review of existing information, MEC is not expected to be found at MRS-20, and No Further Action Related to MEC is required for this site. MRS-20 meets the Track 1, Category 1 criteria because there is no evidence to indicate military munitions were used at the site.

#### 2.9.6 MRS-22 (Site 3)—Beach Trainfire Ranges

##### ***Site Description***

The site is 952 acres in size, and is located on the Monterey Bay coastline along the western margin of former Fort Ord as shown on Plate 2. The site is currently open space with the proposed reuse of the site to include a State park with open space and recreational areas. Training maps, aerial photographs, and interviews indicate the site was used as the Beach Trainfire Ranges from 1940s until base closure in 1994. The ranges contained 17 small arms firing ranges; an obstacle course; a bivouac area; a rifle instruction circle; a bayonet assault course; chemical, biological, and radiological (CBR) training areas; target detection training areas; an infiltration course; and a former ammunition supply point. CBR training at MRS-22 (Site 3) only involved training troops in the identification of targets while wearing gas masks (*MACTEC, 2004*), and did not involve the use of chemical, biological or radiological materials. Training at the Beach Trainfire Ranges reportedly also included occasional practice mortar use with inert training devices, amphibious assault landings, and battle demonstrations.

##### ***Site Characterization***

In 1992 and 1993 under the Basewide Hazardous and Toxic Waste (HTW) RI/FS program addressing chemical contamination, the site was defined as Site 3. As part of this program, the presence, location, and concentration of spent small arms ammunition were mapped across Site 3 and soil samples were collected from test pits. A Phase II biological sampling program was also conducted in 1994 to evaluate the presence of chemicals of concern in soil and vegetation to provide information for a screening-level ecological risk assessment. The ecological risks associated with Site 3 were assessed separately from the MEC concerns associated with MRS-22. The Site 3 ecological risk assessment, results, and rationale for taking No Further Remedial Action with Monitoring for Ecological Risks from Chemical Contamination at Site 3, the former Beach Trainfire Ranges, are described in greater detail in Section 2.10 of this ROD.

During field activities associated with the Basewide (HTW) RI/FS at Site 3, ordnance items were found on several occasions and documented in Explosive Ordnance Incident Reports. A grenade fuze (type unknown) was found at MRS-22; it is not confirmed or documented if this item was MEC or munitions debris. The reports also indicated that munitions debris items were found (an unknown inert military munitions fragment, possibly from a 37mm projectile; an inert 20mm dummy round; two expended smoke grenades; and a Japanese mortar [model not reported]). It should be noted that the Final Track 1 OE RI/FS and Proposed Plan stated that it was unknown if the Japanese mortar was MEC or inert. On February 10, 2005, a MACTEC representative contacted Mr. James Anelli, U.S. Army Corps of Engineers, Omaha District, who was the UXO Safety Specialist for munitions response investigations at former Fort Ord at the time of the discovery. Mr. Anelli clearly recalled the discovery and stated that the item was an inert training aid (*MACTEC, 2005*). Because this item was munitions debris, it contained no explosive material and therefore presented no threat. During the implementation of the HTW field program at Site 3, twenty-three test pits were hand dug to 3 feet below ground surface (bgs), and no MEC or munitions debris were found.

In 1985, a series of steel buildings were constructed at the ammunition supply point. During construction, an unspecified number of 105mm rounds were reportedly found. It is believed that the 105mm rounds were ammunition that had been stolen from the ammunition supply point, allegedly buried, and never retrieved. In response, a geophysical sweep was performed at the Ammunition Supply Point (ASP) in 1987. During the geophysical sweep, pyrotechnics, smoke grenades, and small arms ammunition were found and removed. These items may have been stolen and buried in the area for later retrieval. The Army believes the occurrence of these items to be an isolated instance and the completed geophysical search and resulting removal has eliminated all detectable items of this nature from the ASP area. Therefore, the Track 1 Category 3 designation remains applicable to MRS-22.

Sampling for MEC was performed under contract with the Army by HFA in 1994 and CMS in 1997 and 1998. In 1994, six munitions debris items (one inert practice hand grenade; one expended smoke grenade; one hand grenade fuze; one practice mortar fin; and two 40mm cartridge cases) and live small arms ammunition were found. In 1997 and 1998, one munitions debris item (an empty, unfuzed Japanese mortar training aid) and range-related debris were found and removed.

In 2000 under contract with the Army, IT Corporation excavated three trenches in the vicinity of the ammunition supply point to investigate reports of an alleged burial pit that reportedly contained inert light antitank weapon (LAW) rocket launch tubes and may have also contained war souvenirs from the Grenada Conflict. The trenches were excavated at the locations where an eyewitness to the burial action and another informant indicated that the items were buried. No evidence of military munitions was found in the trenches. Substantial quantities of small arms ammunition were also found and removed during a large-scale cleanup of the 17 small arms range areas, during which no other military munitions items were found. With the exception of the ammunition supply point, only munitions debris was found during the sampling programs.

#### ***Rationale for Taking No Further Action Related to MEC***

Based on review of existing information, MEC is not expected to be found at MRS-22, and No Further Action Related to MEC is required for this site. MRS-22 meets the Track 1, Category 3 criteria because historical research and field investigations identified evidence of past training involving military munitions, and training at this site involved only the use of practice and pyrotechnic items that are not designed to cause injury. The following MEC items may be present at the site based on past site use: target practice and training mortar cartridges. In the unlikely event that a MEC item of the type previously observed at the site is found at MRS-22, it is not expected that it could be caused to function through casual contact (i.e., inadvertent and unintentional contact). In addition, the MEC types potentially present at MRS-22 have been exposed to moisture, degradation, and weathering for many years which could prevent them from functioning. Intrusive activities are expected as part of proposed site reuse and development. Ordnance recognition and safety training during construction activities is recommended for MRS-22. Section 1.3.1 of this ROD (*Description of the Remedy*) describes the scope of the safety training program.

#### ***Memorandum of Understanding for Site Surveillance Activities***

As an added precaution, the DTSC and California Department of Parks and Recreation (California State Parks) will enter into a Memorandum of Understanding (MOU) for additional site surveillance activities on MRS-22. The MOU will be implemented to inspect the beach property for the presence of MEC items periodically and after erosion-inducing weather events. The MOU will also call for proper notification in the case of any discovery of MEC items (or potential MEC items) during these inspections. The Army will provide ordnance recognition and safety training to all California State Parks employees who work at the former Fort Ord Beach Trainfire Ranges. In addition, any construction personnel involved in

intrusive operations at the site will attend the Army's ordnance recognition and safety training. State Parks will notify the Army of planned intrusive activities and in turn the Army will provide ordnance recognition and safety training to workers prior to the start of intrusive work. Section 1.3.1 of this ROD (*Description of the Remedy*) describes the scope of the safety training program.

#### 2.9.7 MRS-24B—Practice Hand Grenade Range

##### ***Site Description***

The site is 14.2 acres in size, and is located in the west-central portion of former Fort Ord that contains military residential housing as shown on Plate 2. The site is also located south of the Main Garrison and just north of the Impact Area. MRS-24B will continue to be used for military housing. Historical and sampling information indicate the site was used as practice hand grenade range in the 1940s.

##### ***Site Characterization***

Sampling was performed under contract with the Army by USA Environmental/CMS in 1997. One munitions debris item (expended grenade fuze) and many range-related debris items were found and removed. Northeast of the site, military munitions items (one rifle smoke grenade and small arms ammunition) were retrieved from a burial pit. These items were found outside the site boundary and determined to be inconsistent with the potential and historic use of the site and therefore were not considered representative of conditions at MRS-24B. This area has been used for military housing for over 40 years.

##### ***Rationale for Taking No Further Action Related to MEC***

Based on review of existing information, MEC is not expected to be found at MRS-24B, and No Further Action Related to MEC is required for this site. MRS-24B meets the Track 1, Category 3 criteria because historical research and field investigations identified evidence of past training involving military munitions, and training at this site involved only the use of practice and pyrotechnic items that are not designed to cause injury. The following MEC items may be present at the site based on past site use: practice hand grenades and fuzes. In the unlikely event that a MEC item of the type previously observed at the site is found at MRS-24B, it is not expected that it could be caused to function through casual contact (i.e., inadvertent and unintentional contact). In addition, the MEC types potentially present at MRS-24B have been exposed to moisture, degradation, and weathering for many years which could prevent them from functioning.

Intrusive activities are expected as part of proposed site reuse and development. Ordnance recognition and safety training during construction activities is recommended for MRS-24B. Section 1.3.1 of this ROD (*Description of the Remedy*) describes the scope of the safety training program.

#### 2.9.8 MRS-24D—Booby Traps

##### ***Site Description***

The site is 1.8 acres in size, and is located in the west central portion of former Fort Ord that contains military residential housing as shown on Plate 2. The site is also located south of the Main Garrison and just north of the former Impact Area. MRS-24D will continue to be used for military housing. The site was identified as a "Booby Traps" and squad patrol training area based on review of a 1946 historical

map; however, the site boundary was northwest of the area shown as “Booby Traps” on 1945 and 1946 training maps.

### ***Site Characterization***

Sampling was performed under contract with the Army by USA Environmental/CMS in 1997. One unknown munitions debris fragment and range-related debris items were found and removed. This area has been used for military housing for over 40 years.

### ***Rationale for Taking No Further Action Related to MEC***

Based on review of existing information, MEC is not expected to be found at MRS-24D, and No Further Action Related to MEC is required for this site. MRS-24D meets the Track 1, Category 3 criteria because historical research and field investigations identified evidence of past training involving military munitions, and training at this site involved only the use of practice and pyrotechnic items that are not designed to cause injury. The following MEC items may be present at the site based on past site use: booby trap firing devices and simulators; and practice antitank and antipersonnel mines and fuzes. In the unlikely event that a MEC item is found of the type previously observed at the site at MRS-24D, it is not expected that it could be caused to function through casual contact (i.e., inadvertent and unintentional contact). In addition, the MEC types potentially present at MRS-24D have been exposed to moisture, degradation, and weathering for many years which could prevent many of them from functioning. Additionally, practice antitank mines are designed to be triggered by the weight of a vehicle, commonly in excess of several hundred pounds.

Intrusive activities are expected as part of proposed site reuse and development. Ordnance recognition and safety training during construction activities is recommended for MRS-24D. Section 1.3.1 of this ROD (*Description of the Remedy*) describes the scope of the safety training program.

## 2.9.9 MRS-24E—Practice Rifle Grenade Range

### ***Site Description***

The site is 2.7 acres in size, and is located in the west central portion of former Fort Ord as shown on Plate 2. The site is also located south of the Main Garrison and just north of the former Impact Area within a military housing complex. MRS-24E will continue to be used for military housing. MRS-24E was identified as a Practice Rifle Grenade Range on 1945/1946 training maps, but no evidence of this use was discovered during sampling at the site.

### ***Site Characterization***

Sampling was performed under contract with the Army by USA Environmental/CMS in 1997. One unknown munitions debris fragment and range-related debris items were found and removed. This area has been used for military housing for over 40 years.

### ***Rationale for Taking No Further Action Related to MEC***

Based on review of existing information, MEC is not expected to be found at MRS-24E, and No Further Action Related to MEC is required for this site. MRS-24E meets the Track 1, Category 3 criteria because historical research and field investigations identified evidence of past training involving military munitions, and training at this site involved only the use of practice and pyrotechnic items that are not designed to cause injury. The following MEC items may be present at the site based on past site use:

practice or smoke rifle grenades and fuzes. In the unlikely event that a MEC item of the type previously observed at the site is found at MRS-24E, it is not expected that it could be caused to function through casual contact (i.e., inadvertent and unintentional contact). In addition, the MEC types potentially present at MRS-24E have been exposed to moisture, degradation, and weathering for many years which could prevent them from functioning.

Intrusive activities are expected as part of proposed site reuse and development. Ordnance recognition and safety training during construction activities is recommended for MRS-24E. Section 1.3.1 of this ROD (*Description of the Remedy*) describes the scope of the safety training program.

#### 2.9.10 MRS-27X—Training Site 24

##### ***Site Description***

The site is 79.5 acres in size, and is undeveloped open space located in the southeastern portion of former Fort Ord as shown on Plate 2. MRS-27X is currently a habitat reserve area managed by the Bureau of Land Management (BLM), and is open to the public for recreational use. Based on review of Fort Ord training maps, the site was used as a troop training and maneuver area from the 1950s to 1970s, and as an overnight bivouac area and medical training area in the 1980s.

##### ***Site Characterization***

Sampling was performed under contract with the Army by UXB International, Inc. (UXB) in 1995, and all anomalies were excavated; live, small arms blanks and one munitions debris item (a rifle smoke grenade) were found and removed. No evidence was found to suggest the use of the area as an impact area (e.g., fragmentation, fuzes, or projectiles).

##### ***Rationale for Taking No Further Action Related to MEC***

Based on review of existing information, MEC is not expected to be found at MRS-27X, and No Further Action Related to MEC is required for this site. MRS-27X meets the Track 1, Category 3 criteria because historical research and field investigations identified evidence of past training involving military munitions, and training at this site involved only the use of practice and pyrotechnic items that are not designed to cause injury. The following MEC items may be present at the site based on past site use: smoke rifle grenades and fuzes. In the unlikely event that a MEC item of the type previously observed at the site is found at MRS-27X, it is not expected that it could be caused to function through casual contact (i.e., inadvertent and unintentional contact). In addition, the MEC types potentially present at MRS-27X have been exposed to moisture, degradation, and weathering for many years which could prevent them from functioning.

#### 2.9.11 MRS-27Y—Training Site 25

##### ***Site Description***

The site is 25 acres in size, and is mainly undeveloped open space located in the eastern portion of former Fort Ord along Inter-Garrison Road as shown on Plate 2. A small portion of the site also lies on property that was transferred to California State University Monterey Bay in 1995 for development. The site was identified as one of 26 training sites within Fort Ord Training and Maneuver Areas used as troop training, maneuver, and overnight bivouac areas.

### ***Site Characterization***

In 1994 under contract with the Army, HFA completed sampling in the vicinity of MRS-27Y. Although the sampling was not specific to MRS-27Y, one of four sampling areas was located within the boundary of MRS-27Y, and no MEC or munitions debris were found. Sampling was performed under contract with the Army by UXB in 1995, and all anomalies were excavated; live, small arms blanks and one munitions debris item (an expended illumination signal) were found and removed. No evidence was found to suggest the use of the area as an impact area (e.g., fragmentation, fuzes, or projectiles).

### ***Rationale for Taking No Further Action Related to MEC***

Based on review of existing information, MEC is not expected to be found at MRS-27Y, and No Further Action Related to MEC is required for this site. MRS-27Y meets the Track 1, Category 3 criteria because historical research and field investigations identified evidence of past training involving military munitions and training at this site involved only the use of pyrotechnic items that are not designed to cause injury. The following MEC items may be present at the site based on past site use: illumination signals. In the unlikely event that a MEC item of the type previously observed at the site is found at MRS-27Y, it is not expected that it could be caused to function through casual contact (i.e., inadvertent and unintentional contact). In addition, the MEC types potentially present at MRS-27Y have been exposed to moisture, degradation, and weathering for many years which could prevent them from functioning.

Intrusive activities are expected as part of proposed site reuse and development. Ordnance recognition and safety training during construction activities is recommended for MRS-27Y. Section 1.3.1 of this ROD (*Description of the Remedy*) describes the scope of the safety training program.

## 2.9.12 MRS-32A—Oil Well Road Training Area

### ***Site Description***

The site is 38 acres in size, and is located in the southeastern portion of former Fort Ord, surrounded by undeveloped open space as shown on Plate 2. Proposed reuse plans for MRS-32A include maintaining the land as habitat reserve. Based on training maps and interviews, the site may have been used as a tank gunnery range in 1950s, for training with shoulder-launched projectiles in 1950s and 1960s, and as a troop training and maneuver area from 1950s to 1980s.

### ***Site Characterization***

Sampling was performed under contract with the Army by UXB in 1994, and all anomalies were excavated; live, small arms blanks and three munitions debris items (two expended illumination signals and one expended hand smoke grenade) were found and removed. No military munitions associated with a tank gunnery range, shoulder-launched projectiles, or rifle grenades were found.

### ***Rationale for Taking No Further Action Related to MEC***

Based on review of existing information, MEC is not expected to be found at MRS-32A, and No Further Action Related to MEC is required for this site. MRS-32A meets the Track 1, Category 3 criteria because historical research and field investigations identified evidence of past training involving military munitions and training at this site involved only the use of practice and pyrotechnic items that are not designed to cause injury. The following MEC items may be present at the site based on past site use: illumination signals; and smoke hand grenades. In the unlikely event that a MEC item of the type

previously observed at the site is found at MRS-32A, it is not expected that it could be caused to function through casual contact (i.e., inadvertent and unintentional contact). In addition, the MEC types potentially present at MRS-32A have been exposed to moisture, degradation, and weathering for many years which could prevent them from functioning.

#### 2.9.13 MRS-32B—Oil Well Road Training Area II

##### *Site Description*

The site is 47 acres in size, and is located in the southeastern portion of former Fort Ord, surrounded by undeveloped open space as shown on Plate 2. Proposed reuse plans for MRS-32B include maintaining the land as habitat reserve. Based on historical training maps (circa 1954 and 1956), it was identified as the “Oil Well Road Training Area”; a portion of the site was reportedly used as a Tank Gunnery Range in 1950s; and the site may also have been used for firing of shoulder-launched projectiles.

##### *Site Characterization*

Sampling was performed under contract with the Army by UXB in 1995, and all anomalies were excavated; live, small arms blanks, and three munitions debris items (a grenade safety lever, an expended hand smoke grenade, and an expended illumination signal) were found and removed. No evidence was found that indicated the use of shoulder-launched projectiles or tanks.

##### *Rationale for Taking No Further Action Related to MEC*

Based on review of existing information, MEC is not expected to be found at MRS-32B, and No Further Action Related to MEC is required for this site. MRS-32B meets the Track 1, Category 3 criteria because historical research and field investigations identified evidence of past training involving military munitions, and training at this site involved only the use of practice and pyrotechnic items that are not designed to cause injury. The following MEC items may be present at the site based on past site use: illumination signals and smoke hand grenades. In the unlikely event that a MEC item of the type previously observed at the site is found at MRS-32B, it is not expected that it could be caused to function through casual contact (i.e., inadvertent and unintentional contact). In addition, the MEC types potentially present at MRS-32B have been exposed to moisture, degradation, and weathering for many years which could prevent them from functioning.

#### 2.9.14 MRS-39—Mine and Booby Trap Area

##### *Site Description*

The site is 12.1 acres in size, and is located east of General Jim Moore Boulevard and south of Gigling Road in the Marshall Park housing area as shown on Plate 2. MRS-39 will continue to be used for military housing. The site was identified as a Mine and Booby Trap Training Area on 1957/1958 maps.

##### *Site Characterization*

Sampling was performed under contract with the Army by CMS in 1997, and no MEC or munitions debris was found. Because of the proximity of the site to roads and facilities present in the 1950s, it is expected that mine and booby trap training involved inert and/or practice items. This area has been used for military housing for over 40 years.

***Rationale for Taking No Further Action Related to MEC***

Based on review of existing information, MEC is not expected to be found at MRS-39, and No Further Action Related to MEC is required for this site. MRS-39 meets the Track 1, Category 3 criteria because historical research and field investigations identified evidence of past training involving military munitions, and training at this site involved only the use of practice and pyrotechnic items that are not designed to cause injury. The following MEC items may be present at the site based on past site use: practice antitank and antipersonnel mines and fuzes; and booby trap firing devices and simulators. In the unlikely event that a MEC item of the type previously observed at the site is found at MRS-39, it is not expected that it could be caused to function through casual contact (i.e., inadvertent and unintentional contact). In addition, the MEC types potentially present at MRS-39 have been exposed to moisture, degradation, and weathering for many years which could prevent many of them from functioning. Additionally, practice antitank mines are designed to be triggered by the weight of a vehicle, commonly in excess of several hundred pounds.

Intrusive activities are expected as part of proposed site reuse and development. Ordnance recognition and safety training during construction activities is recommended for MRS-39. Section 1.3.1 of this ROD (*Description of the Remedy*) describes the scope of the safety training program.

**2.9.15 MRS-49—Former Rifle Grenade Range*****Site Description***

The site is 28 acres in size, and is located in the west central portion of former Fort Ord, south of Main Garrison and just north of military housing as shown on Plate 2. The site is currently undeveloped and proposed reuse plans include development. The site was identified as a training area and rifle grenade range in the 1940s and 1950s based on interviews conducted during the Preliminary Assessment/Site Inspection (PA/SI) phase of the Fort Ord Archive Search.

***Site Characterization***

Two reconnaissance efforts (PA/SI and BRA) conducted found munitions debris (expended smoke signals) and small arms ammunition. Two Explosive Ordnance Incident Reports described two inert 40mm practice projectiles (for a grenade launcher) found inside the site boundary just north of a housing area, and a single rifle smoke grenade and small arms ammunition were found 300 feet outside the southeast boundary of the site. These items were either found outside the site boundary, or were determined to be inconsistent with the potential and historic use of the site and therefore were not considered representative of conditions at MRS-49.

A site walk was conducted at MRS-49 in 2004 at a location selected in order to supplement information collected during previous reconnaissance efforts at this site. The site walk was conducted by a Military Munitions Specialist using a magnetometer to detect buried anomalies. The only items found during the site walk included munitions debris (an expended smoke signal, an expended smoke grenade, and the candle housing for a 105mm illumination projectile) and small arms ammunition. Housing and a school located immediately adjacent to MRS-49 have been present at this location for over 40 years.

***Rationale for Taking No Further Action Related to MEC***

Based on review of existing information, MEC is not expected to be found at MRS-49, and No Further Action Related to MEC is required for this site. MRS-49 meets the Track 1, Category 3 criteria because historical research and field investigations identified evidence of past training involving military

munitions, and training at this site involved only the use of practice and pyrotechnic items that are not designed to cause injury. The following MEC items may be present at the site based on past site use: smoke hand grenades and smoke signals. In the unlikely event that a MEC item of the type previously observed at the site is found at MRS-49, it is not expected that it could be caused to function through casual contact (i.e., inadvertent and unintentional contact). In addition, the MEC types potentially present at MRS-49 have been exposed to moisture, degradation, and weathering for many years which could prevent them from functioning.

Intrusive activities are expected as part of proposed site reuse and development. Ordnance recognition and safety training during construction activities is recommended for MRS-49. Section 1.3.1 of this ROD (*Description of the Remedy*) describes the scope of the safety training program.

#### 2.9.16 MRS-59A—Unnamed

##### ***Site Description***

The site is 41 acres in size, and is located in the eastern portion of former Fort Ord near the East Garrison and MRS-5 as shown on Plate 2. The site is currently undeveloped and proposed reuse plans include development. The site was identified as a possible 2.36-inch rocket range during interviews conducted during the PA/SI phase of the Fort Ord Archive Search. The site appears to have been used for/or been within the downrange area of small arms ranges from the 1930s until base closure in 1994. No training areas where military munitions would be used were identified on historical training maps.

##### ***Site Characterization***

Two site reconnaissance efforts were performed within MRS-59A (PA/SI and BRA). No evidence of the use of 2.36-inch rockets or the presence of an impact area (e.g., firing points, targets, fragmentation, fuzes, or projectiles) was found. In 1994 under contract with the Army, HFA conducted combined sampling in 10 areas at MRS-59A and 7 areas at nearby MRS-5. All anomalies detected during the HFA sampling were to be investigated. However, based on the available HFA records, it is not known if the anomalies identified at MRS-59A were intrusively investigated. Records indicate some munitions debris was removed during sampling of both sites; however, it is unknown whether this information is specific to areas sampled within MRS-59A or MRS-5.

A site walk was conducted in 2003 at a location selected in order to supplement information collected during previous reconnaissance efforts at this site. The site walk was conducted by a Military Munitions Specialist using a magnetometer to detect buried anomalies. Items found during the site walk included munitions debris (two expended pyrotechnic signals), small arms ammunition, and small arms ammunition clips. The presence of expended pyrotechnics found during the 2003 site walk indicates that military training was conducted in this general area.

##### ***Rationale for Taking No Further Action Related to MEC***

Based on review of existing information, MEC is not expected to be found at MRS-59A, and No Further Action Related to MEC is required for this site. MRS-59A meets the Track 1, Category 3 criteria because historical research and field investigations identified evidence of past training involving military munitions and training at this site involved only the use of pyrotechnic items that are not designed to cause injury. The following MEC items may be present at the site based on past site use: illumination signals. In the unlikely event that a MEC item of the type previously observed at the site is found at MRS-59A, it is not expected that it could be caused to function through casual contact (i.e., inadvertent

and unintentional contact). In addition, the items potentially present at MRS-59A have been exposed to moisture, degradation, and weathering for many years which could prevent them from functioning.

Intrusive activities are expected as part of proposed site reuse and development. Ordnance recognition and safety training during construction activities is recommended for MRS-59A. Section 1.3.1 of this ROD (*Description of the Remedy*) describes the scope of the safety training program.

## 2.9.17 MRS-62—Laguna Seca Open Space

### ***Site Description***

The site is 247 acres in size, and is located at the southern end of former Fort Ord as shown on Plate 2. The site is currently open space and proposed reuse plans include development. The site was identified as a small arms and flare training area during an interview with a former Fort Ord Fire Chief conducted during the PA/SI phase of Fort Ord Archive Search. Based on review of training maps, aerial photographs, and site reconnaissance, the site was used as a troop training and maneuver area from the late 1940s through 1980s; and the southern half of the site was included in a “Noise Buffer Zone” from 1978 to 1987, where no firing of ammunition was allowed, including pyrotechnics, explosives, or simulators. MRS-62 lies within a larger area identified during interviews conducted as part of the Archives Search as “Area T” and was described as a general area where training may have occurred. The boundary of MRS-62 is based on transfer parcel delineation and not on evidence of munitions use. The boundary of MRS-62 was established to correspond to with disposal Parcel L20.6. Although the size of the parcel to be transferred has changed over time, the boundary of MRS-62 corresponds with the current boundary of Parcel L20.6.

### ***Site Characterization***

Reconnaissance activities identified munitions debris (expended pyrotechnic items) and expended blank small arms ammunition at the site, but no evidence of fragmentation, fuzes, projectiles, or other evidence of training were identified. A site walk was conducted in 2003 at a location selected in order to supplement information collected during previous reconnaissance efforts at this site. No MEC or evidence of the use of military munitions were found during the site walk performed at MRS-62; only expended blank small arms ammunition was observed.

### ***Rationale for Taking No Further Action Related to MEC***

Based on review of existing information, MEC is not expected to be found at MRS-62, and No Further Action Related to MEC is required for this site. MRS-62 meets the Track 1, Category 3 criteria because historical research and field investigations identified evidence of past training involving military munitions and training at this site involved only the use of pyrotechnic items that are not designed to cause injury. The following MEC items may be present at the site based on past site use: illumination signals. In the unlikely event that a MEC item of the type previously observed at the site is found at MRS-62, it is not expected that it could be caused to function through casual contact (i.e., inadvertent and unintentional contact). In addition, the items potentially present at MRS-62 have been exposed to moisture, degradation, and weathering for many years which could prevent them from functioning.

Intrusive activities are expected as part of proposed site reuse and development. Ordnance recognition and safety training during construction activities is recommended for MRS-62. Section 1.3.1 of this ROD (*Description of the Remedy*) describes the scope of the safety training program.

## 2.9.18 MRS-63—Canyon Training Area

### *Site Description*

The site is 28 acres in size, and is located at the southern end of former Fort Ord east of MRS-62 as shown on Plate 2. MRS-63 is currently a habitat reserve area managed by the BLM, and is open to the public for recreational use. The site was identified as a small arms and flare training area during the PA/SI phase of the Fort Ord Archive Search. Based on review of training maps, aerial photographs, and site reconnaissance, most of the site was included in a “Noise Buffer Zone” from 1978 to 1987, where no firing of ammunition was allowed, including pyrotechnics, explosives, or simulators.

### *Site Characterization*

Site reconnaissance activities (PA/SI and BRA) identified munitions debris (expended pyrotechnic items) and expended blank small arms ammunition, but no specific training locations were identified during the literature search or site reconnaissance. A site walk was conducted in 2003 at a location selected in order to supplement information collected during previous reconnaissance efforts at this site. No MEC or evidence of MEC was found during the site walk; only blank small arms ammunition was observed. No evidence was found to suggest the use of the area as an impact area (e.g., fragmentation, fuzes, or projectiles).

### *Rationale for Taking No Further Action Related to MEC*

Based on review of existing information, MEC is not expected to be found at MRS-63, and No Further Action Related to MEC is required for this site. MRS-63 meets the Track 1, Category 3 criteria because historical research and field investigations identified evidence of past training involving military munitions and training at this site involved only the use of pyrotechnic items that are not designed to cause injury. The following MEC items may be present at the site based on past site use: illumination signals. In the unlikely event that a MEC item of the type previously observed at the site is found at MRS-63, it is not expected that it could be caused to function through casual contact (i.e., inadvertent and unintentional contact). In addition, the items potentially present at MRS-63 have been exposed to moisture, degradation, and weathering for many years which could prevent them from functioning.

## 2.9.19 MRS-66—Signal Corps Small Arms

### *Site Description*

The site is 41 acres in size, and is located in the northeastern portion of former Fort Ord as shown on Plate 2. The majority of the site lies on property transferred to California State University Monterey Bay (CSUMB) that is currently used for student housing or is proposed for development. A small portion of the site lies on property that is designated as habitat reserve. The site was identified as a reported signal corps field training area during the PA/SI phase of Fort Ord Archive Search, and other uses included aviation training, basic unit training, and a bivouac area from 1950s until housing construction in 1989.

### *Site Characterization*

Sampling was performed under contract with the Army by UXB in 1995, and all anomalies were excavated and included live, small arms ammunition and one munitions debris item (an expended illumination signal). Site reconnaissance activities (PA/SI and BRA) identified munitions debris (an expended rifle smoke grenade and an expended illumination signal) and expended blank small arms ammunition, but no specific training locations were identified during the literature search or site

reconnaissance. A site walk was conducted in 2003 at a location selected in order to supplement information collected during previous reconnaissance efforts at this site. The site walk was conducted by a Military Munitions Specialist using a magnetometer to detect buried anomalies. No MEC or evidence of MEC were found during the site walk; only ammunition clips and small arms ammunition links were observed.

Later use of the area as housing suggests any MEC that might have been present would probably have been found during construction. No reports that MEC has been found in this housing area have been made to the Army during the 15 years that housing has been occupied.

#### ***Rationale for Taking No Further Action Related to MEC***

Based on review of existing information, MEC is not expected to be found at MRS-66, and No Further Action Related to MEC is required for this site. MRS-66 meets the Track 1, Category 3 criteria because historical research and field investigations identified evidence of past training involving military munitions, and training at this site involved only the use of practice and pyrotechnic items that are not designed to cause injury. The following MEC items may be present at the site based on past site use: illumination signals and smoke rifle grenades. In the unlikely event that a MEC item of the type previously observed at the site is found at MRS-66, it is not expected that it could be caused to function through casual contact (i.e., inadvertent and unintentional contact). In addition, the items potentially present at MRS-66 have been exposed to moisture, degradation, and weathering for many years which could prevent them from functioning.

Intrusive activities are expected as part of proposed site reuse and development. Ordnance recognition and safety training during construction activities is recommended for MRS-66. Section 1.3.1 of this ROD (*Description of the Remedy*) describes the scope of the safety training program.

#### 2.9.20 MRS-69—Unnamed

##### ***Site Description***

The site is 37 acres in size, and is undeveloped open space located on the eastern side of former Fort Ord as shown on Plate 2. MRS-69 is currently a habitat reserve area managed by the BLM, and is open to the public for recreational use. The site was identified as an area of possible rifle grenade use based on interviews with a former Fort Ord Fire Chief. This site is within land transferred to the BLM and is open to the public for hiking, biking, and horseback riding. Use is limited to marked trails. The public has had access to this area for approximately 6 years.

##### ***Site Characterization***

Site reconnaissances were performed in 1995 (PA/SI) and 2001 (BRA). No MEC or evidence of the use of rifle grenades or use of the site as an impact area (e.g., fixed targets, fragmentation, fuzes, or projectiles) was found during reconnaissance activities. No evidence was found to suggest the use of the area as an impact area (e.g., fragmentation, fuzes, or projectiles).

#### ***Rationale for Taking No Further Action Related to MEC***

Based on review of existing information, MEC is not expected to remain at MRS-69, and No Further Action Related to MEC is required for this site. MRS-69 meets the Track 1, Category 1 criteria because there is no evidence to indicate military munitions were used at the site.

## 2.9.21 MRS-70—Unnamed

### ***Site Description***

The site is 14 acres in size, and is located on the southeastern side of former Fort Ord, south of Oil Well Road as shown on Plate 2. The site is currently a habitat reserve area managed by BLM, and is open to the public for recreational use. The area encompassing MRS-70 was identified as containing firing berms based on interviews with a former Fort Ord Fire Chief.

### ***Site Characterization***

Two site reconnaissances were performed in 1995 (PA/SI) and 2001 (BRA). No evidence of firing berms or use of military munitions were found during reconnaissance activities, and only expended blank small arms were found and removed. Based on review of training maps, aerial photographs, and site reconnaissance, most of the site was included in a “Noise Buffer Zone” from 1978 to 1987, where no firing of ammunition was allowed, including pyrotechnics, explosives, or simulators.

A site walk was conducted in 2003 at a location selected in order to supplement information collected during previous reconnaissance efforts at this site. No MEC or evidence of MEC was found during the site walk; only blank small arms ammunition was observed. No evidence was found to suggest the use of the area as an impact area (e.g., fragmentation, fuzes, or projectiles).

### ***Rationale for Taking No Further Action Related to MEC***

Based on review of existing information, MEC is not expected to remain at MRS-70, and No Further Action Related to MEC is required for this site. MRS-70 meets the Track 1, Category 1 criteria because there is no evidence to indicate military munitions were used at the site.

## 2.10 Site 3 (MRS-22) Ecological Assessments and Evaluations

Site 3 (MRS-22), the former Beach Trainfire Ranges, was investigated in the Final Basewide Remedial Investigation / Feasibility Study, Fort Ord, California (Basewide [HTW] RI/FS; *HLA, 1995*). The site extends approximately 3.2 miles along the coastline of Monterey Bay at the western boundary of the former Fort Ord as shown on Plate 2. The site is bordered to the south by Sand City, to the north by the city of Marina, and to the east by Highway 1. The site was used for small arms training beginning in the 1940s. Spent bullets accumulated on the east-facing (leeward) sides of the sand dunes that formed the “backstops” for the targets and in areas prone to erosion between sand dunes. The Basewide (HTW) RI/FS evaluated cleanup alternatives for soil containing lead and other metals (*HLA, 1995*).

The beach ranges provide critical habitat for several plant and animal species that are listed as rare, threatened, or species of special concern (*Harding ESE, 2002*). Proposed future land use at Site 3 is to use the area as a limited-access state park, consisting mostly of open space. Campgrounds and associated facilities are planned for the site. According to State Parks representatives, public access to the dunes will be limited by boardwalks or hiking trails leading to the beach.

### ***Summary of Cleanup Action Taken***

Pursuant to the *Interim Record of Decision, Site 3, Beach Trainfire Ranges, Fort Ord, California* (Site 3 Interim ROD; *Army, 1997*), approximately 162,800 cubic yards of material was removed from Site 3. After the cleanup was completed in 2000, post-remediation sampling determined that the remaining site-wide average lead concentration in soil was 161 mg/kg (*IT, 2000*).

### *Summary of Ecological Risk Assessments and Evaluations*

The following ecological risk assessments and evaluations summarized below were conducted at Site 3:

- 1) Baseline Ecological Risk Assessment—Final Basewide (HTW) RI/FS, Baseline Ecological Risk Assessment (HLA, 1995);
- 2) Additional Ecological Risk Evaluations—Draft Final Additional Ecological Risk Evaluations (HLA, 1998); and
- 3) Post-Remediation Ecological Risk Assessment—Draft Final Post-Remediation Risk Assessment (IT, 2000).

#### Baseline Ecological Risk Assessment

The purpose of the Baseline Ecological Risk Assessment, conducted as part of the Basewide (HTW) RI/FS (HLA, 1995), was to assess whether plants or animals might be adversely affected by lead and other metals in soil due to the presence of spent ammunition at Site 3. The Baseline Ecological Risk Assessment showed that plants or animals may be adversely affected by lead and other metals in soil, mostly in the high bullet density areas. However, the results were considered inconclusive and it was decided that more information should be collected to fully evaluate ecological risks.

#### Additional Ecological Risk Evaluations

The purpose of the Additional Ecological Risk Evaluations (HLA, 1998) was to:

- Address inconclusive results and gaps in information collected during previous sampling efforts identified in the Baseline Ecological Risk Assessment (HLA, 1995),
- Complete the Ecological Risk Assessment for Site 3, and
- Provide information to guide cleanup at the site.

More biological and chemical sampling was performed at the site to support the 'Additional Ecological Risk Evaluations'. The Additional Ecological Risk Evaluations concluded that plants or animals may be adversely affected by lead in soil in the heavy bullet density areas, but that risks to plants and animals were low in areas outside of the heavy bullet density areas. Based on these results, cleanup was recommended for the heavy bullet density areas. The Army completed cleanup of the heavy bullet density areas in 2000, and post-remediation sampling determined that the remaining site-wide average lead concentration in soil was 161 mg/kg (IT, 2000).

#### Post-Remediation Ecological Risk Assessment

Following cleanup of the heavy bullet density areas, a Post-Remediation Ecological Risk Assessment (IT, 2000) was conducted to confirm that the cleanup was protective of plants and animals at the site. Based on the data collected at the site following cleanup, it was concluded that significant risks to populations of plants and animals from exposure to the lead and other metals remaining in soil at the site are not expected.

### ***Rationale For Taking No Further Remedial Action with Monitoring for Ecological Risks from Chemical Contamination at Site 3 (MRS-22)***

No further remedial action with monitoring at Site 3 (MRS-22) is required for the following reasons: (1) a substantial portion of bullets and contaminated soil have been removed from the site; (2) data collected before and after cleanup show that the remaining average site-wide concentration of lead in soil is 161 mg/kg; (3) the ecological sampling to date has shown that the cleanup appears to be protective of populations of plants and animals at the site.

The Army's decision to leave residual contamination in place is not likely to adversely affect the following federally listed species: Western snowy plover, Smith's blue butterfly, sand gilia, Monterey spineflower, Contra Costa goldfields, or Yadon's piperia.

Ecological monitoring will be conducted at Site 3 (MRS-22) to confirm the results of the ecological risk assessments and evaluations conducted to date (*HLA, 1995, 1998; IT, 2000*). Monitoring will be conducted in accordance with an approved work plan developed pursuant to Section 8.3 of the FFA. This data will be evaluated in conjunction with previous ecological risk assessment and evaluation data during the five-year reviews to assess the need for continued ecological monitoring and make sure the decision remains protective of the environment. The next five-year review will occur in 2007.

## 2.11 Summary of Site Risks

### 2.11.1 Munitions and Explosives of Concern

Track 1 sites do not pose an unacceptable risk to human health or the environment from previous military munitions-related activities based on the results of the Track 1 OE RI/FS (*MACTEC, 2004*). Based on the results of the Track 1 OE RI/FS, each of the Track 1 sites falls into one of the following three categories:

- Category 1: There is no evidence to indicate military munitions were used at the site, i.e., suspected training did not occur; or
- Category 2: The site was used for training, but the military munitions items used do not pose an explosive hazard, i.e., training did not involve explosive items; or
- Category 3: The site was used for training with military munitions, but military munitions items that potentially remain as a result of that training pose an acceptable risk based on site-specific evaluations conducted in the Track 1 OE RI/FS. Field investigations identified evidence of past training involving military munitions, but training at these sites involved only the use of practice and/or pyrotechnic items that are not designed to cause injury. In the unlikely event that a live item of the type previously observed at the site is found, it is not expected that the item would function by casual contact (i.e., inadvertent and unintentional contact).

Because Track 1 sites do not pose an unacceptable risk to human health or the environment from previous military munitions-related activities, no further action related to MEC is necessary at these sites.

For some Track 1 sites, digging or underground "intrusive" activities are planned for the proposed site reuse and development. No actionable risk was identified through the remedial investigation process. However, in the interest of safety, reasonable and prudent precautions should be taken when conducting intrusive operations at the sites. As a basewide effort to promote safety and because of Fort Ord's history as a military base, the Army provides "ordnance recognition and safety training" to anyone who requests that training. Construction personnel involved in intrusive operations at the former Fort Ord may attend

the Army's "ordnance recognition and safety training" to increase their awareness of and ability to identify MEC items. Trained construction personnel will contact an appropriate local law enforcement agency if a potential MEC item is encountered. The local law enforcement agency will arrange a response by the Army.

For specific Track 1 sites (MRS-1, MRS-5, MRS-6, MRS-13A, MRS-22, MRS-24B, MRS-24D, MRS-24E, MRS-27Y, MRS-39, MRS-49, MRS-59A, MRS-62, and MRS-66), the Army recommends construction personnel involved in intrusive operations at these sites attend the Army's "ordnance recognition and safety training." To accomplish that objective, the Army will request notice from future landowners of planned intrusive activities, and in turn will provide ordnance recognition and safety training to construction personnel prior to the start of intrusive work. The Army will provide ordnance recognition and safety refresher training as appropriate. The Army will amend the Munitions Response Site Security Program to include the implementation procedures for offering and providing ordnance recognition and safety training for specific munitions response sites (MRSs) with this recommendation. The Site Security Program will be updated to include the procedures for: (1) requesting the notice; (2) providing the training and refresher training and monitoring the success of the outreach effort; (3) documenting and reporting incidental finds; (4) documenting and reporting on the training activities, and summarizing the success (or effectiveness) of the outreach effort as part of the Site Security Program's annual update.

For the Track 1 sites where ordnance recognition and safety training is recommended (MRS-1, MRS-5, MRS-6, MRS-13A, MRS-22, MRS-24B, MRS-24D, MRS-24E, MRS-27Y, MRS-39, MRS-49, MRS-59A, MRS-62, and MRS-66), at the time of the next five-year review (2007), the Army will assess whether the education program should continue. If information indicates that no MEC items have been found in the course of development or redevelopment of the site, it is expected that the education program may, with the concurrence of the regulatory agencies, be discontinued, subject to reinstatement if a MEC item is encountered in the future.

In the future, should any military munitions-related item be found within any of the Track 1 sites addressed in this ROD, the Army will take an appropriate immediate action (i.e., removing the found item, recording the incident), and within 90 days of the discovery, submit a plan for appropriate follow-on action to EPA and DTSC for consultation, pursuant to Section 7.7(b) of the Fort Ord Federal Facility Agreement (FFA).

### 2.11.2 Ecological Risks at Site 3 (MRS-22)

Chemical contamination at Site 3—also known as the former Beach Trainfire Ranges and Track 1 site MRS-22—does not appear to pose unacceptable ecological risks from residual lead and other metals based on the results of the assessments and evaluations summarized in Section 2.10. The Army's decision to leave residual contamination in place is not likely to adversely affect the following federally listed species: Western snowy plover, Smith's blue butterfly, sand gilia, Monterey spineflower, Contra Costa goldfields, or Yadon's piperia. The results of these assessments and evaluations indicated No Further Remedial Action with Monitoring for Ecological Risks from Chemical Contamination at Site 3 was required because the site in its current condition does not appear to pose an unacceptable risk to ecological receptors. Ecological monitoring will be conducted at Site 3 (MRS-22) to confirm the results of the ecological risk assessments and evaluations conducted to date (*HLA, 1995, 1998; IT, 2000*). This data will be evaluated in conjunction with previous ecological risk assessment and evaluation data during the five-year reviews to assess the need for continued ecological monitoring and make sure the decision remains protective of the environment. The next five-year review will occur in 2007.

### 2.11.3 Additional Precautions to be Undertaken by DTSC

DTSC has elected to undertake the following additional precautions at Site 3 (MRS-22). DTSC will enter into a Memorandum of Understanding for further surveillance with the California Department of Parks and Recreation, which will be acquiring Site 3 (MRS-22). DTSC also intends to enter into a Land Use Covenant with the California Department of Parks and Recreation to enhance protection of human health. These documents will address further monitoring and use of the land at Site 3 (MRS-22).

### 2.12 Documentation of Significant Changes

Although not a significant change, for the purpose of clarity, a statement regarding small arms ammunition was added to Section 1.1 and the definitions provided in the Glossary in Appendix A of this ROD. In general, it indicates that for the purposes of the Fort Ord Military Munitions Response Program (MMRP) being conducted and this Record of Decision (ROD), MEC does not include small arms ammunition (.50 caliber and below).

The Proposed Plan included a recommendation for ordnance recognition and safety training for workers conducting intrusive activities at specific sites (MRS-1, MRS-6, MRS-13A, MRS-22, MRS-24B, MRS-24D, MRS-24E, MRS-39). Although not a significant change, in response to public comments, this recommendation was expanded to other Track 1 Category 3 sites with development as a component of their anticipated site reuse: MRS-5, MRS-27Y, MRS-49, MRS-59A, MRS-62, and MRS-66.

## 3.0 RESPONSIVENESS SUMMARY

### 3.1 Overview

At the time of the public review period for the Army's *Superfund Proposed Plan: No Further Action Is Proposed For Track 1 Sites at Former Fort Ord, California*, dated September 1, 2004, the Army identified (1) No Further Action Related to Munitions and Explosives of Concern (MEC) as the recommended alternative for Track 1 sites at the former Fort Ord, and (2) No Further Remedial Action with Monitoring for Ecological Risks from Chemical Contamination as the recommended alternative for one of the Track 1 sites—Site 3 (MRS-22).

#### *Summary of Public Comments*

On the basis of the written and oral comments received, the Army's Proposed Plan was generally accepted by the public. Several citizens expressed concerns regarding the following issues:

- **Regulatory Issues**—Some members of the public felt it was not possible to determine whether the proposed No Further Action Related to MEC remedy for the Track 1 sites is protective of human health and the environment under the existing National Contingency Plan (NCP) Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) regulations. The concerns focused on: (1) the Remedial Investigation (RI) was not based on a full site investigation approach; (2) a Risk Assessment (RA) and Feasibility Study (FS) were not conducted for the Track 1 sites; (3) the Proposed Plan did not provide sufficient details about the RIs conducted and presented in the RI Site Reports; and (4) the Track 1 OE RI/FS and Proposed Plan did not adequately address community involvement or consider the affected community in the evaluation of potential MEC risks at the Track 1 sites.
- **Technical Issues**—Some members of the public felt the general content of the information provided in the RI Site Reports in the Track 1 OE RI/FS (and summarized in the Proposed Plan) such as (1) the accuracy of historical records on MEC usage; (2) the amount, types, and adequacy of MEC sampling conducted; and (3) the way the Track 1 site boundaries were created, was not adequate to determine that no further action is required at these sites.
- **Site-Specific Track 1 Issues**—Some members of the public felt the site-specific content of the information provided in several of the RI Site Reports in the Track 1 OE RI/FS and summarized in the Proposed Plan was not adequate to determine that no further action is required at these sites.

### 3.2 Background on Community Involvement

In 1991, Fort Ord was added to the Base Realignment and Closure (BRAC) List. The economic impact of Fort Ord's closure has created much community interest relative to the potential economic reuse of portions of the former Fort Ord. Specifically, the Track 1 sites are under consideration for reuse for residential, commercial, and recreational development through the Fort Ord Reuse Authority (FORA), as well as habitat reserve.

The Army is committed to providing opportunities that will assist community members in understanding and participating in the cleanup decision-making process for the Munitions Response Remedial Investigation/Feasibility Study (RI/FS) program at the former Fort Ord that includes the Track 1 Ordnance and Explosives (OE) RI/FS, Proposed Plan, and Record of Decision. The Army holds public meetings, Community Involvement Workshops, Technical Review Committee (TRC) meetings, and open

houses and conducts public information sessions through booths or tables at local community events. The Army provides public and media tours of former Fort Ord cleanup activities, distributes fact sheets, and makes presentations to special interest and community groups (for example the Fort Ord Community Advisory Group; FOCAG) as necessary to address specific community concerns or explain significant cleanup activities.

The Army also maintains document repositories available to the public including the administrative record and several information repositories at local libraries. Additionally, the Army administers a public environmental cleanup Website ([www.fortordcleanup.com](http://www.fortordcleanup.com)) and mails monthly cleanup updates. The Website provides background information, a description of current activities, documents available for public comment, maps, notices, and agendas for upcoming public meetings. The monthly cleanup update includes information on recent cleanup activities, recently published documents and fact sheets, and is mailed to those who have requested to be on the community relations mailing list and distributed at community involvement events. Community involvement activities are documented in the Community Relations Plan that is updated annually.

Focused community involvement regarding the Proposed Plan is summarized in the Army's responses to comments below and has most recently involved the public review of the Army's Proposed Plan for the Track 1 sites. A 30-day public comment period began September 15, 2004 and was extended to 60 days at the request of the public, closing on November 15, 2004. The Army also held a public meeting regarding the Proposed Plan for the Track 1 sites on September 29, 2004 during which the public had an opportunity to learn more about the Track 1 sites and the No Further Action decision, and submit oral comments.

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 29, 2004.

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

Public comments submitted during the Track 1 Proposed Plan public comment period and the Army's responses are categorized by three general topics as summarized in the sections below: A) Regulatory Issues, B) Technical Issues, and C) Site-Specific Track 1 Issues. An overview of these comments is provided in Section 3.1, and the Army's responses are summarized in Section 3.4.

#### A. Regulatory Issues

Several comments summarized below were received from the public regarding regulatory issues related to preparation of the Track 1 OE RI/FS and Proposed Plan:

**General Comment A1:** It is not possible to determine whether the proposed No Further Action remedy is protective of human health and the environment under existing regulations. The National Contingency Plan (NCP) requires that the Army develop and apply a Risk Assessment for the Track 1 sites. The Fort Ord Ordnance and Explosives Risk Assessment Protocol (*Malcolm Pirnie, 2002*) was not used to assess site risks in the Track 1 OE RI/FS (*MACTEC, 2004*) or referenced in the Proposed Plan. The Protocol should be used in the Track 1 OE RI/FS and Proposed Plan to provide a formal analysis of multiple site-specific MEC-related factors and to determine whether or not the degree of MEC hazard remaining at each site is acceptable. The Army should also describe what recourses are available to citizens if they are harmed by casual contact with MEC items at the Track 1 sites after these properties are transferred for reuse by the public. For informational purposes, it should be noted that in 2004 the RAND Corporation published the report *Unexploded Ordnance: A Critical Review Of Risk Assessment Methods*, that was

prepared for the Army and provides an independent and thorough analysis of MEC-related risk assessment methodologies. The RAND team suggests a probabilistic risk assessment methodology for UXO be developed that evaluates the likelihood of catastrophic failure.

**Response:** The Conclusions and Recommendations Section in each of the Site Reports presented in the Track 1 OE RI/FS (*MACTEC, 2004*) provides information to support the determination that No Further Action Related to MEC is necessary for the Track 1 sites. In addition, in the Proposed Plan, the lead agency (Army) explains the basis for the conclusion that MEC is not expected at the Track 1 sites and that these sites do not pose an unacceptable risk to human health or the environment from previous military munitions-related activities based on the results of the Track 1 OE RI/FS (*MACTEC, 2004*).

As described in Section 8.0 of USEPA's Guidance A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents (EPA 540-R-98-031, 1999), regarding No Action decisions, the lead agency (in this case the Army) may determine that No Action is warranted when the site or a specific problem or area of the site poses no current or potential threat to human health or the environment. The USEPA's CERCLA Guidance further indicates that the lead agency (Army) should explain the basis for its conclusion that unacceptable exposures to hazardous substances (in this case MEC) will not occur.

The Track 1 OE RI/FS (*MACTEC, 2004*) included a site-specific evaluation of archival and field-based investigation data for each candidate Track 1 site and presented the rationale and basis for the conclusion that unacceptable exposures to MEC will not occur at these sites. The results of the site-specific evaluations indicated a strong weight of evidence to support No Further Action related to MEC as determined by the project team (the Army, United States Environmental Protection Agency [USEPA], and the California Department of Toxic Substances Control [DTSC], a part of the California Environmental Protection Agency [Cal/EPA]).

These sites were suspected to have been used for military training with military munitions. But based on the Track 1 OE RI/FS (*MACTEC, 2004*), each Track 1 site falls into one of the following three categories:

- Category 1: There is no evidence to indicate military munitions were used at the site, i.e., suspected training did not occur; or
- Category 2: The site was used for training, but the military munitions items used do not pose an explosive hazard, i.e., training did not involve explosive items; or
- Category 3: The site was used for training with military munitions, but military munitions items that potentially remain as a result of that training do not pose an unacceptable risk based on site-specific evaluations conducted in the Track 1 OE RI/FS. Field investigations identified evidence of past training involving military munitions, but training at these sites involved only the use of practice and/or pyrotechnic items that are not designed to cause injury. In the unlikely event that a live item of the type previously observed at the site is found, it is not expected that the item would function by casual contact (i.e., inadvertent and unintentional contact).

Therefore, no further munitions response is required.

The Fort Ord Ordnance and Explosives Risk Assessment Protocol ("Protocol") (*Malcolm Pirnie, 2002c*) referenced in the comment was prepared through a combined effort of the Army, USEPA, and the DTSC, a part of Cal/EPA. The public was invited to participate in and comment on development of the Protocol at two Community Involvement Workshops held on August 8, 2001 and May 8, 2002. In addition, the Army submitted the Draft and Draft Final versions of the Protocol (*Malcolm Pirnie, 2002 a,b*) for public

review; provided public access to copies of the reports in the Administrative Record, Information Repositories, and on the Fort Ord Cleanup Website ([www.fortordcleanup.com](http://www.fortordcleanup.com)); and notified the public of the opportunity to review and comment on the Protocol in a fact sheet sent to each person / entity on the former Fort Ord mailing list that includes members of the Base Closure Team and interested members of the Fort Ord Community.

The purpose of the Protocol was to allow for comparative review of MEC risks at MEC-impacted Track 2 and Track 3 Munitions Response sites at the former Fort Ord; not at Track 1 sites which pose no threat from MEC. The Protocol is a qualitative risk assessment approach based on several input factors including the density of MEC items occurring at a site as well as the type of hazard associated with the MEC items known to be (or to have been) present at a site. The results of the Track 1 OE RI/FS (*MACTEC, 2004*) indicated these sites were not impacted by MEC, or MEC items that may be present are not designed to cause injury. For these reasons, the Fort Ord Risk Assessment Protocol or other risk assessment methodology is not applicable to the Track 1 sites.

Regarding the comment requesting identification of recourses available to citizens if they are harmed by casual contact (i.e., inadvertent and unintentional contact) with MEC at Track 1 sites after property transfer; as stated above, based on the results of the Track 1 OE RI/FS, MEC is not expected at these sites. However, given the current state of technologies and knowledge of military munitions, one cannot eliminate the possibility that such an incident could occur. That is why the Army implements additional measures of reasonable precaution to promote safety at the former Fort Ord to minimize the chances of accidents involving MEC. The Army has a mechanism in place to gather information on munitions encounters at the former Fort Ord, and should it occur, the Army would investigate the incident and take appropriate actions. In addition, while moisture and weather can prevent some MEC from functioning, it should be noted that intentional actions involving MEC such as handling, disassembling, sawing or cutting, striking, throwing, or exposing MEC to heat or flame is extremely hazardous regardless of its age or condition.

The Army appreciates the informational comment regarding the availability of the newly published report *Unexploded Ordnance: A Critical Review Of Risk Assessment Methods*, published in 2004. The RAND report states "The army has not yet arrived at a consensus with the Environmental Protection Agency, state agencies, and other concerned groups about what process should be used to assess risks and evaluate past responses to sites contaminated with both UXO and munitions constituents." Because of the lack of consensus on assessing these potential risks, the Fort Ord project team (the Army, USEPA, and the DTSC, a part of Cal/EPA) developed the Fort Ord Ordnance and Explosives Risk Assessment Protocol ("Protocol") (*Malcolm Pirnie, 2002*). As stated above, the project team determined based on the results of the Track 1 OE RI/FS that the Protocol or other risk assessment methodology is not necessary for the Track 1 sites as the remedial investigation process determined that the sites do not pose an unacceptable risk from MEC and therefore, no further action is needed to protect human health and the environment.

**General Comment A2:** The Track 1 Proposed Plan does not follow the complete CERCLA process. A Site Response Strategy and the Fort Ord Risk Assessment Protocol seem to be the primary components being considered for the proposed land transfer of Track 1 sites. The Army did not perform full site investigations of the Track 1 sites under the RI, and it appears that many statements related to the adequacy of the RI repeated throughout the Proposed Plan are based on someone's best judgment rather than a formal hazard analysis using an approved risk assessment model. The Category 3 sites are not appropriate for Track 1, and should be moved to Track 2 or Track 3 and be reevaluated through further MEC investigations. The Army should also conduct a human health risk assessment specifically for soil and groundwater contamination at all suspected MEC sites. To be overly cautious is what the community wants. The Army should conduct a health study of local citizens to determine whether the contamination at former Fort Ord is making people ill.

**Response:** The Track 1 OE RI/FS (*MACTEC, 2004*) and Proposed Plan included a Site Response Strategy as well as all other CERCLA components of conducting a remedial investigation (RI) for each of the Track 1 sites. The Site Response Strategy Diagram referenced in the comment is assumed to be Figure 7-4, *Developing a Site Response Strategy*, from USEPA's *Handbook on the Management of Ordnance and Explosives at Closed, Transferring, and Transferred Ranges and Other Sites* (USEPA, 2002). The information summarized in Figure 7-4 that is considered in MEC-related site responses includes the "weight of evidence" approach used in the Track 1 OE RI/FS (*MACTEC, 2004*).

The evaluations of site-specific data collected during the archival and field-based investigations under the Track 1 OE RI/FS were based on the components of the CERCLA RI Process. Individual Site Reports for each of the Track 1 sites include:

- Background information, including a description of the site; the site history and development; a description of potential MEC based on historical use of the area; the history of MEC investigations; and a conceptual site model.
- An evaluation of previous work, including preparation of checklists according to the Plan for Evaluation of Previous Work (*HLA, 2000*). Reviews were also performed on (1) archival and MEC sampling data; (2) the adequacy of the MEC sampling, reconnaissance activities, or site walks conducted; (3) the performance of the geophysical equipment used during MEC investigations; (4) data management; and (5) the appropriateness of the site boundaries, (6) proposed land reuse.

As described in the Army's Response to General Comment A1 above, based on the results of the Track 1 OE RI/FS, the project team determined application of the Fort Ord Risk Assessment Protocol was not applicable for the Track 1 sites based on a strong weight of evidence that the information from the Literature Review and field investigations supports No Further Action related to MEC. This weight of evidence determination is made by the project team, including the Army, USEPA, and DTSC; a part of Cal/EPA, and is not based on any one individual's best judgment as referenced in the comment. The Fort Ord Risk Assessment Protocol was developed for use at MEC-impacted Track 2 and Track 3 sites, and is not being considered for the proposed land transfer of Track 1 sites, nor does it apply to the Track 1 sites where MEC is not expected.

In regards to the comment that Category 3 sites should be moved to Track 2 or Track 3 and be reevaluated, these sites were identified as having been used for training with military munitions, however, the Army feels these sites do not pose an unacceptable risk to human health or the environment from previous military munitions-related activities based on the results of the Track 1 OE RI/FS (*MACTEC, 2004*). Training at these sites involved only the use of practice and/or pyrotechnic items that are not designed to cause injury. In the unlikely event that a live item of the type previously observed at the site is found, it is not expected that the item would function by casual contact (i.e., inadvertent and unintentional contact). Along with other historical and field-based information gathered during site-specific evaluations conducted during the Track 1 OE RI/FS (*MACTEC, 2004*) and presented in the Site Reports, there is a strong weight of evidence to support the conclusion that MEC is not expected at these Track 1 sites. Therefore, the project team determined that no further munitions response is required at the Category 3 Track 1 sites, and they should not be addressed with the MEC-impacted Track 2 or Track 3 sites as suggested in the comment. In addition, please see the Army's Response to General Comment A4 below, which describes the Army's basewide efforts under the Army's Munitions Response (MR) Site Security Program (*Army, 2001*) regarding the implementation of general site security measures that promote MEC safety because of Fort Ord's history as a military base.

In regards to the comment that a risk assessment should be conducted for soil contamination at suspected MEC sites, and that the Army should conduct a health study of local citizens to determine whether the

contamination at former Fort Ord is making people ill, the scope of the OE RI/FS program, including the Track 1 OE RI/FS (*MACTEC, 2004*), is to address potential physical risks from MEC as described in detail in the Final OE RI/FS Work Plan (*USACE, 2000*). Potential chemical risks associated with MEC are being addressed under the Basewide Range Assessment Program (BRA; *IT, 2001*), and were also addressed in the Final Basewide Remedial Investigation / Feasibility Study, Fort Ord, California (Basewide HTW RI/FS; *HLA, 1995*). In addition, the Ordnance Detonation Sampling and Analysis Plan (Detonation SAP; *HLA, 2000*) reviewed available studies which suggest there is little potential for soil or groundwater contamination from MEC detonations.

The Agency for Toxic Substances and Disease Registry (ATSDR) has also performed two studies related to the former Fort Ord. In 1996, ATSDR performed a public health assessment of the entire facility, and determined that "currently, no one is being exposed to contaminants from Fort Ord sources (*ATSDR, 1996*). Since the 1996, ATSDR report was prepared as an assessment of the entire population and did not specifically address the Munitions Response sites, the information in the report will be considered as part of the comprehensive basewide Munitions Response RI/FS being conducted for the entire former Fort Ord. ATSDR also performed a health consultation in 2001 and established a public health team to review technical data and to respond to community health concerns regarding prescribed burns at the former Fort Ord that are being conducted as part of the basewide Munitions Response RI/FS. Although the 2001 health consultation and ongoing consultations by ATSDR specifically address potential health issues related to controlled burns that are not relevant to the Track 1 sites, this information will also be considered as part of the comprehensive basewide Munitions Response RI/FS being conducted for the entire former Fort Ord.

In addition, please see the Army's Response to General Comment A6 below that describes the purpose and scope of the Proposed Plan is to briefly summarize the information relied upon to select the preferred alternative. Additional details regarding the CERCLA process followed for the Track 1 sites can be found in the Track 1 OE RI/FS. The Army recognizes the Proposed Plan provides members of the public with the opportunity to review and comment on the significant volume of information presented in the Track 1 OE RI/FS, and has provided detailed responses and references to the relevant components of the Track 1 OE RI/FS process where applicable based on the public comments received as presented in this Responsiveness Summary.

**General Comment A3:** The Track 1 OE RI/FS and Proposed Plan do not include the development or evaluation and comparison of remedial alternatives as required by the NCP. These documents should include a discussion of the NCP's nine CERCLA evaluation criteria for remedy selection and describe other possible alternatives to the "No Further Action" alternative in a Feasibility Study (FS) and subsequent Record of Decision (ROD). By failing to evaluate other possible alternatives, the Army pre-determined the outcome of its remedy selection process. This approach is a violation of the requirements of the NCP and is also arbitrary and capricious and not in accordance with the law.

**Response:** In accordance with Section 8.0 of the USEPA's CERCLA Guidance cited in the Army's Response to General Comment A1 above (*EPA 540-R-98-031, 1999*) and the NCP, an evaluation of remedial alternatives in a Feasibility Study and the subsequent Proposed Plan and ROD is not required when documenting a No Action decision where unacceptable risks will not occur. The Track 1 OE RI/FS and Proposed Plan followed the complete CERCLA process for a No Action decision, met the requirements of the NCP, and was conducted in accordance with USEPA's CERCLA Guidance in a thorough and methodical manner with active regulatory agency oversight and involvement as described above, and as such was neither arbitrary, capricious, or unlawful as referenced in the comment.

**General Comment A4:** The Proposed Plan states No Further Action Related to MEC is the remedy recommended for the Track 1 sites. However, institutional controls (ICs) are being recommended for

some of the sites where intrusive activities are planned to mitigate any potentially remaining MEC risks. The Proposed Plan recommends implementation of several ICs including conducting five-year reviews; providing ordnance recognition and safety training; and suggesting that land owners inform the Army prior to performing intrusive digging activities on the property. In addition, the Track 1 OE RI/FS (*MACTEC, 2004*) recommends filing a deed notice regarding the potential presence of MEC at the site; reporting requirements for MEC incidents; a school education program; and community involvement including workshops and distribution of fact sheets. However, the Proposed Plan does not recognize these procedures as ICs. All of these procedures are intended to protect future users of the Track 1 sites and should be evaluated and documented in an Institutional Controls Plan, and the Proposed Plan should be updated to include all of the recommended ICs.

The Army should take credit for taking these extra precautions and implementing the ICs and rename the Track 1 sites remedy as “no further MEC remedial action with implementation of ICs”. This will more accurately reflect the actual decision being recommended for these Track 1 sites and inform the public that ICs are being implemented for their protection. As evidence that these measures are ICs, the definition of ICs from the Glossary of the Track 1 OE RI/FS states they consist of “A legal or institutional mechanism that limits access to or use of property, or warns of a hazard. An IC can be imposed by the property owner, such as use restrictions contained in a deed, or by a government, such as a zoning restriction.”

In addition, voluntary ICs such as the City of Marina's "ordnance ordinance" are not sufficient to address the uncertainties regarding MEC risks at the Track 1 sites. Marina's ordinance was designed to protect worker safety in the event that MEC was discovered at one of the sites while acknowledging that no ordnance clearance can be 100 percent effective. This type of voluntary IC is not a substitute for proper investigation and clearance.

**Response:** The No Further Action determination by the Army and EPA does not include institutional controls for Track 1 sites. Based on the Track 1 evaluations, MEC is not expected at the 21 Track 1 sites. The Track 1 OE RI/FS (*MACTEC, 2004*) and Proposed Plan indicated for some Track 1 sites, digging or underground "intrusive" activities are planned for the proposed site reuse and development. No actionable risk was identified through the remedial investigation process. However, in the interest of safety, reasonable and prudent precautions should be taken when conducting intrusive operations at the sites. As a basewide effort to promote safety and because of Fort Ord's history as a military base, the Army provides "ordnance recognition and safety training" to anyone who requests that training. Construction personnel involved in intrusive operations at the former Fort Ord may attend the Army's "ordnance recognition and safety training" to increase their awareness of and ability to identify MEC items. Trained construction personnel will contact an appropriate local law enforcement agency if a potential MEC item is encountered. The local law enforcement agency will arrange a response by the Army.

For specific Track 1 sites (MRS-1, MRS-5, MRS-6, MRS-13A, MRS-22, MRS-24B, MRS-24D, MRS-24E, MRS-27Y, MRS-39, MRS-49, MRS-59A, MRS-62, and MRS-66), the Army recommends construction personnel involved in intrusive operations at these sites attend the Army's "ordnance recognition and safety training." To accomplish that objective, the Army will request notice from future landowners of planned intrusive activities, and in turn will provide ordnance recognition and safety training to construction personnel prior to the start of intrusive work. The Army will provide ordnance recognition and safety refresher training as appropriate. The Army will amend the Munitions Response Site Security Program to include the implementation procedures for offering and providing ordnance recognition and safety training for specific munitions response sites (MRSs) with this recommendation. The Site Security Program will be updated to include the procedures for: (1) requesting the notice; (2) providing the training and refresher training and monitoring the success of the outreach effort; (3)

documenting and reporting incidental finds; (4) documenting and reporting on the training activities, and summarizing the success (or effectiveness) of the outreach effort as part of the Site Security Program's annual update.

For the Track 1 sites where ordnance recognition and safety training is recommended (MRS-1, MRS-5, MRS-6, MRS-13A, MRS-22, MRS-24B, MRS-24D, MRS-24E, MRS-27Y, MRS-39, MRS-49, MRS-59A, MRS-62, and MRS-66), at the time of the next five-year review (2007), the Army will assess whether the education program should continue. If information indicates that no MEC items have been found in the course of development or redevelopment of the site, it is expected that the education program may, with the concurrence of the regulatory agencies, be discontinued, subject to reinstatement if a MEC item is encountered in the future.

In the future, should any military munitions-related item be found within any of the Track 1 sites addressed in this ROD, the Army will take an appropriate immediate action (i.e., removing the found item, recording the incident), and within 90 days of the discovery, submit a plan for appropriate follow-on action to EPA and DTSC for consultation, pursuant to Section 7.7(b) of the Fort Ord Federal Facility Agreement (FFA).

These programs were reported in the Track 1 OE RI/FS and Proposed Plan as general measures that promote MEC safety because of Fort Ord's history as a military base. The Army's recommendations regarding measures of precaution at some of the Track 1 sites is not a requirement that must be implemented under the recommended No Further Action remedy, and as such, are not institutional controls for these sites.

The DTSC, a part of Cal/EPA, has had an opportunity to review and comment on the ROD, and DTSC's concerns were addressed, with added precautions. These precautions include DTSC entering into a Memorandum of Understanding with the California Department of Parks and Recreation, which will be acquiring Site 3, to address further site surveillance at Site 3 (MRS-22).

The Track 1 OE RI/FS reviewed and evaluated past investigative actions at the Track 1 sites on the basis of proposed reuses specified in the Fort Ord Base Reuse Plan (*FORA, 1997*). However, the Track 1 OE RI/FS did not consider voluntary measures that may be implemented by future property owners in determining the overall protectiveness of the No Further Action Related to MEC decision for these sites as suggested in the comment. After approval of the Track 1 ROD and transfer of the Track 1 site property, additional measures (such as the City of Marina's "ordnance ordinance" referenced in the comment) may be implemented at the discretion of future property owners.

**General Comment A5:** The regulatory agencies (DTSC, USEPA, RWQCB) have not enforced regulations in CEQA, the Cal/EPA, the FFA, and requirements set forth by the DoD for cleanup of OE and Chemical Materials. In addition, the USEPA does not appear to hold the BCT or the other regulatory agencies accountable for following the Superfund/CERCLA process and the CEQA process.

**Response:** Please see the Army's Response to General Comment A3 above, which describes how the environmental cleanup at the former Fort Ord is being conducted in accordance with CERCLA, as amended by the Superfund Amendment and Reauthorization Act (SARA), established by the United States Government. The cleanup is done with active regulatory oversight by the USEPA, DTSC (a part of Cal/EPA), and the RWQCB (also a part of Cal/EPA).

Based on the results of the Track 1 OE RI/FS (*MACTEC, 2004*), MEC is not expected at the Track 1 sites and the current site conditions do not trigger any applicable regulations or requirements regarding military

munitions cleanup actions. The California Environmental Quality Act (CEQA) does not apply to federal decisions.

A Federal Facility Agreement (FFA) for Fort Ord was signed in 1990 by the Army, USEPA, DTSC, and the RWQCB. The FFA establishes schedules for performing RI/FSs and requires that remedial actions be completed as expeditiously as possible. In April 2000, an agreement was signed between the Army, USEPA, and DTSC to evaluate military munitions at the former Fort Ord subject to the provisions of the Fort Ord FFA. The Munitions Response RI/FS, which includes the Track 1 OE RI/FS, Proposed Plan, and Record of Decision, is being conducted in accordance with the Fort Ord FFA.

The USEPA has provided active regulatory oversight throughout the Track 1 OE RI/FS process, and has worked closely with the rest of the project team (the Army and DTSC) to ensure the process is conducted in accordance with CERCLA as described in the Army's Responses to General Comments A1 through A5 above.

Regulatory agency comments on the Draft and Draft Final versions of the Track 1 OE RI/FS (*MACTEC, 2002, 2003*) and Army responses are provided in appendices to the Draft Final and Final versions of the report, respectively (*MACTEC, 2003, 2004*). Copies of these documents, as well as FFA-related documents, are accessible to the public via the Administrative Record and local Information Repositories as described in the Proposed Plan (*Army, 2004*) and in Section 2.4 of this ROD. Many of these documents are also available on the Fort Ord Cleanup Website ([www.fortordcleanup.com](http://www.fortordcleanup.com)).

**General Comment A6:** The Track 1 Proposed Plan did not provide sufficient details about the RIs conducted for the 21 Track 1 sites for the public to adequately assess whether the Army's recommended No Further Action Related to MEC remedy is protective of human health and the environment.

**Response:** Details regarding the RIs conducted for the sites and the Army's reasons for determining No Further Action Related to MEC is required at the Track 1 sites was presented in the Track 1 OE RI/FS (*MACTEC, 2004*). The Army submitted the Draft, Draft Final, and Final versions of the Track 1 OE RI/FS (*MACTEC, 2002, 2003, 2004*) for public review; has provided public access to copies of the report in the Administrative Record, Information Repositories, and on the Fort Ord Cleanup Website ([www.fortordcleanup.com](http://www.fortordcleanup.com)); and notified the public of the opportunity to review and comment on the Track 1 OE RI/FS in the Army's newsletter that is sent to each person / entity on the former Fort Ord mailing list that includes members of the Base Closure Team and interested members of the Fort Ord Community. No comments were received by the Army from the community on the Track 1 OE RI/FS.

As described in Section 3.0 of USEPA's Guidance A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents (EPA 540-R-98-031, 1999), the scope of the Proposed Plan is to briefly describe the remedial alternatives analyzed, propose a preferred alternative, and summarize the information relied upon to select the preferred alternatives, to provide the public an opportunity to participate in the remedy selection (NCP § 300.430(f)(2)).

The Proposed Plan provided summaries of the site characterizations performed and the information relied upon to select the preferred alternative of the No Further Action Related to MEC for each of the 21 Track 1 sites as per USEPA's Guidance. The Army recognizes the Proposed Plan provides members of the public with the opportunity to review and comment on the significant volume of information presented in the Track 1 OE RI/FS, and has provided detailed responses and references to the relevant components of the RI Site Reports where appropriate based on the public comments received as presented in this Responsiveness Summary.

**General Comment A7:** CERCLA 42 U.S.C. § 9601 et seq., and its implementing regulations, 40 CFR Parts 300–311, requires that the Army Fort Ord Base Realignment and Closure (BRAC) Office take community acceptance into account in all its cleanup decisions. The Track 1 Proposed Plan recommendation for No Further Action Related to MEC at the Track 1 sites does not include the affected community in the development of the Decision Process Flow Path or Risk Assessment Methodology, and adequate sampling has not been demonstrated. In addition, land that was transferred to the Bureau of Land Management was inspected via a "surface walk through" according to a representative from the US Army Corp of Engineers. Thousands of acres were given to the Bureau of Land Management without being inspected, sampled or cleaned within required limits.

**Response:** The No Further Action Related to MEC decision for the Track 1 sites is undertaken pursuant to the President's authority under CERCLA Section 104, as delegated to the Army in accordance with Executive Order 12580, and in compliance with the process set out in CERCLA Section 120. The selection of the remedies is authorized pursuant to CERCLA Section 104, and the selected remedies will be carried out in accordance with CERCLA Section 121.

Informing and involving the community is a priority for the Fort Ord project team. In regards to the comment that the Track 1 Proposed Plan recommendation for No Further Action Related to MEC at the Track 1 sites does not include the affected community in the Decision Process Flow Path, the Army has provided numerous opportunities for community involvement in the Track 1 decision process in accordance with the CERCLA requirements cited in the comment, as described below.

The Army submitted the Draft, Draft Final and Final Track 1 OE RI/FS (*MACTEC, 2002, 2003, 2004*) for public review; provided public access to copies of the report in the Administrative Record, Information Repositories, and on the Fort Ord Cleanup Website; and notified the public of the opportunity to review and comment on the Track 1 OE RI/FS in the Army's monthly cleanup updates that are sent to each person / entity on the former Fort Ord mailing list that includes members of the Base Closure Team and interested members of the Fort Ord Community. No comments were received by the Army from the community on the Draft, Draft Final, or Final Track 1 OE RI/FS report (*MACTEC, 2002, 2003, 2004*).

Focused community involvement regarding the Track 1 Proposed Plan included placing the Proposed Plan in the Administrative Record, the Information Repositories and on the Fort Ord Environmental Cleanup Website, and holding an initial 30-day public comment period that began September 15, 2004, which was extended to 60 days at the request of the public, closing on November 15, 2004. The Army held a public meeting regarding the Track 1 Proposed Plan on September 29, 2004 during which the public had an opportunity to submit oral comments.

The Army issued advertisements in the Monterey County Herald and the Salinas Californian newspapers announcing the availability of the Proposed Plan and the opportunity to comment. The announcement was also posted on the Fort Ord Cleanup Website. An Internet list server message announcing the Track 1 Proposed Plan public comment period and public meeting, and the availability of the Proposed Plan on the Fort Ord Cleanup Website, was also distributed to over 150 Internet list server subscribers in September 2004. The Army also responded to several specific information requests related to the Track 1 Proposed Plan and sent additional copies of the Proposed Plan to community members who requested them.

Copies of the Track 1 Proposed Plan were sent to each person / entity on the former Fort Ord mailing list that includes members of the Base Closure Team, the Fort Ord Community Advisory Group, and other interested members of the Fort Ord Community. In addition, copies of the Proposed Plan were distributed and information regarding the public comment period were also available at the following public meetings and events:

- Onsite Fort Ord information booth at the Bureau of Land Management Public Lands Day (September 25, 2004);
- Track 1 Proposed Plan Public Meeting (September 29, 2004);
- Fort Ord Community Advisory Group meetings (October 13 and November 8, 2004);
- Community Involvement Workshop (October 12, 2004);
- Technical Review Committee Meeting (October 13, 2004); and
- Bus Tour of the Fort Ord Cleanup for the Earth Systems Science Policy Class at California State University at Monterey Bay (CSUMB) and for concerned residents of Pacific Grove, California (October 21, 2004).

Written and oral comments on the Track 1 Proposed Plan that were received from members of the community during the 60-day public comment period and at the public meeting are summarized in this Responsiveness Summary. NCP section 300.430(e)(9)(ii)(I) states that assessment of community acceptance may not be completed until comments on the Proposed Plan are received. The Army, EPA, DTSC and RWQCB have considered all public comments on the Track 1 Proposed Plan received during the 60-day public comment period, provided responses in this Responsiveness Summary, and incorporated them into the cleanup decisions as described in this Record of Decision. Based on a careful review and evaluation of the public comments on the Track 1 Proposed Plan by the Base Closure Team (BCT) [the Army; USEPA; DTSC and RWQCB, parts of Cal/EPA], it was determined that adequate community involvement has occurred in accordance with CERCLA requirements and the (1) No Further Action Related to MEC decision for the Track 1 sites, and (2) No Further Remedial Action with Monitoring for Ecological Risks from Chemical Contamination decision for one of the Track 1 sites— Site 3 (MRS-22), were generally accepted by the community.

Although members of the public expressed concerns regarding (1) Regulatory Issues (Section A), (2) Technical Issues (Section B), and (3) Site-Specific Issues (Section C) regarding the Track 1 sites, the Army has addressed these concerns by providing additional clarification in the responses provided herein. Army responses in these sections address (1) the components of the CERCLA process that are required and were followed regarding a no action decision (Regulatory Issues); (2) the remedial investigation methodology followed in the Track 1 OE RI/FS (*MACTEC, 2004*) (Technical Issues); and (3) the details of the RI/FS conducted for each of the 21 Track 1 sites (Site-Specific Issues).

In regards to the comment that the Track 1 Proposed Plan recommendation for No Further Action Related to MEC at the Track 1 sites does not include the affected community in the development of the Risk Assessment Methodology, please see the Army's Response to General Comment A1 above that describes (1) community involvement activities during development of the Fort Ord Risk Assessment Protocol, and (2) the reasons the Fort Ord Risk Assessment Protocol or other risk assessment methodologies are not applicable to the Track 1 sites.

In regards to the comment that thousands of acres of land has been transferred without being subject to MEC-related investigation and cleanup, approximately 7,200 acres of the former Fort Ord land was transferred to the Bureau of Land Management (BLM) in 1996. Prior to the transfer, the property was inspected with regard to military munitions, including reconnaissance, sampling, and removal in some areas. Based on the inspections the land was determined by the Army to be safe for reuse by BLM for limited development and habitat reserve.

Since then, the Army has continued its military munitions investigations at the former Fort Ord. In the OE RI/FS Literature Review (*HLA, 2000*) historical information was again evaluated for the former Fort Ord, including the transferred land. Additional site walks were conducted on roads and trails in large parts of the BLM lands in 1999. Site walks, sampling and removals were conducted in munitions response sites (MRSs) that were subsequently identified in the land transferred to BLM. In 2003, surface reconnaissance was conducted in 270 acres within the BLM land that was accidentally burned in the Eucalyptus Fire. This action was performed because the Army identified the temporary absence of vegetation as an opportunity to continue to compile additional information about the BLM property. All of the information will be evaluated under the ongoing Munitions Response Remedial Investigation/Feasibility Study (MR RI/FS) program at the former Fort Ord. Some of the MRSs were evaluated under the Track 1 MR RI/FS program and are included in this ROD.

Because the military munitions cleanup at the former Fort Ord may take many years, the Army has instituted a munitions response site security program to ensure public safety while the cleanup is ongoing. Measures of precaution taken within the BLM land include training workers in recognizing potential munitions-related items and reporting incidental items, providing public land users information about potential for military munitions, and advising them to obey danger signs. Monitoring associated with the site security program has not indicated any evidence of impact area within the BLM lands.

## B. Technical Issues

Several members of the public commented on various technical issues regarding how the Remedial Investigation (RI) was conducted that led to the Army's determination that No Further Action related to MEC was required. General comments and the Army's responses are summarized below. Site-specific comments and Army responses regarding similar technical issues at many of the 21 Track 1 sites are summarized in Section C.

**General Comment B1:** The Proposed Plan includes the statement “to be included in the Track 1 decision process, the results of the evaluation performed for a site must indicate a strong weight of evidence to support no further MEC-related investigation as determined by the project team.” At many of these sites, the literature review indicated there was MEC used at the site and the field investigations contradict the literature review and indicate that MEC is not present. A more detailed field investigation should be conducted at these types of Track 1 sites compared to the sites where the field investigation confirmed the results of the literature review.

**Response:** As described in the Track 1 OE RI/FS (*MACTEC, 2004*) and summarized in the Proposed Plan, each site was researched and physically visited and investigated. Site-specific evaluations of archival data (literature review) and field-based investigation data (MEC sampling, field reconnaissances, and site walks) were conducted for each of the 24 candidate Track 1 sites to determine whether sufficient data was available to conclude that No Further Action Related to MEC was required as described below. As part of the RI process for each site, archival and field-based investigation data are evaluated, and any contradictions as referenced in the comment were used to identify the need for further data collection or evaluation for a site as follows.

- At 3 of the 24 candidate Track 1 sites evaluated in the Track 1 OE RI/FS (MRS-2, MRS-17, and MRS-24C), the results of the RI indicated further evaluation was warranted. These sites were not included in the Track 1 Proposed Plan.
- At 5 of the 24 candidate Track 1 sites evaluated in the Track 1 OE RI/FS (MRS-5, MRS-6, MRS-13A, MRS-59A, and MRS-66) MEC sampling had already been conducted but after review of the Draft and Draft Final Track 1 OE RI/FS reports (*MACTEC, 2002, 2003*), the project team

determined additional field investigations (site walks) were warranted to provide information in addition to the data presented in the Site Reports. Site walks were conducted by a military munitions specialist using a magnetometer to detect subsurface anomalies in locations selected in order to supplement information collected during previous sampling efforts at these sites. The additional data collected during the site walks conducted at these sites was reevaluated and documented in the Final Track 1 OE RI/FS report, and the results of the evaluation indicated No Further Action Related to MEC was required.

- At 4 of the 24 candidate Track 1 sites evaluated in the Track 1 OE RI/FS (MRS-49, MRS-62, MRS-63, and MRS-70) field reconnaissances had already been conducted, but after review of the Draft and Draft Final Track 1 OE RI/FS reports (*MACTEC, 2002, 2003*), the project team determined additional field investigations (site walks) were warranted to provide information in addition to the data presented in the Site Reports. For MRS-62, MRS-63, and MRS-70, the site walks involved walking a portion of the site and performing a visual survey of the path walked as well as the area immediately surrounding the path. The team also carried a GPS unit to record the path of the walk. At MRS-49, the site walk was conducted by a military munitions specialist using a magnetometer to detect subsurface anomalies in locations selected in order to supplement information collected during the previous field reconnaissance effort at the site. The team also carried a GPS unit to record the path of the walk and the locations of any anomalies detected with the magnetometer. The additional data collected during the site walks conducted at these sites was reevaluated and documented in the Final Track 1 OE RI/FS report, and the results of the evaluation indicated No Further Action Related to MEC was required.
- For the remaining 12 of the 24 candidate Track 1 sites evaluated in the Track 1 OE RI/FS (MRS-1, MRS-20, MRS-22, MRS-24B, MRS-24D, MRS-24E, MRS-27X, MRS-27Y, MRS-32A, MRS-32B, MRS-39, and MRS-69) the project team determined the results of the evaluation indicated No Further Action Related to MEC was required.

**General Comment B2:** Schonstedt magnetometers and “mag and flag” procedures were used to perform many of the geophysical investigations on Track 1 sites. Limitations associated with this type of MEC investigation include: (1) lack of a comprehensive record of the geophysical data; (2) difficulty applying adequate quality control because of the lack of documentary data; (3) variability among individual geophysical instruments' detection capabilities; and (4) variability among individual geophysical operators' skill levels and hearing capabilities that present variations in the quality of the survey from one operator who performs MEC sampling to the next.

In addition, at many of the Track 1 sites, the SiteStats/GridStats (SS/GS) method of determining site investigation locations was used that was determined by the USEPA in 1997 to be invalid for many MEC sites because it assumes homogeneity of contamination throughout the sampling area. If this uniform distribution of UXO across a site is not the case, the SS/GS sampling methodology will likely leave UXO items undetected. USEPA has stated that SS/GS may not accurately estimate the presence of UXO and must not be solely relied upon to make property transfer decisions. The distribution of MEC at Fort Ord Track 1 sites are most likely not distributed in a uniform pattern. Also, SS/GS method would not predict unauthorized and cache burials of military munitions that have been discarded or stolen. There were also three different Army contractors who performed MEC sampling at the Track 1 sites, and the Proposed Plan does not discuss or compare the standards or methodologies used by these contractors. There is no documentation of these technical evaluations for the 21 Track 1 sites included in the Proposed Plan. In addition, the probability of detecting MEC at each of the Track 1 sites using the type of sampling described in the Track 1 OE RI/FS and Proposed Plan is very low, and the Track 1 OE RI/FS indicated the Army's investigation of many of the sites is uncertain and was only conducted in limited portions of the sites.

The probability that the Army will find MEC remaining on a site is a function of several factors, including: the percentage of acreage on the site that has been “sampled” for MEC, the probability of detecting (PD) MEC using the geophysical sampling device employed during the sampling, and the total number of geophysical “anomalies” detected during the sampling that were excavated to remove any subsurface MEC. Using these factors, the probability that the Army located MEC remaining on a site can be calculated as follows: [ Ps (Probability MEC Was Located) = P1 (Percentage Acreage Sampled) x P2 (Probability of Detection for Geophysical Sampling Device Used) x P4 (Percent Anomalies Excavated) ]. Using this formula, the probability MEC was detected and removed for each of the Track 1 sites was calculated based on data from the Track 1 OE RI/FS as very low (Exhibit A). Due to concerns regarding these factors that affected how the RI was conducted for the Track 1 sites, and the low probability that the Army located MEC remaining on these sites, unless the site data is reevaluated to determine if the investigations conducted at the Track 1 sites were adequate to support No Further Action Related to MEC, the Army cannot support the finding, required by 40 C.F.R. 300.430(f)(i)(A), that the remedy recommended for these sites is protective of human health and the environment.

**Response:** The field-based investigations conducted at the Track 1 sites where the Schonstedt and/or SiteStats/GridStats sampling methods were used were evaluated in detail in each of the Site Report Evaluation Sections of the Track 1 OE RI/FS (*MACTEC, 2004*) to determine (1) the adequacy of the MEC sampling conducted, including applicable standards or methodologies used by the Army's munitions response contractors; (2) the performance of the geophysical equipment used during MEC sampling; and (3) the adequacy, completeness, and quality of management procedures regarding the MEC sampling data collected at these sites. The results of the evaluations were presented in the Conclusions sections of the Site Reports of the Track 1 OE RI/FS. All individual sources of data (such as use of the Schonstedt or SS/GS MEC sampling methodology) were evaluated in detail, and decisions regarding the need for further MEC-related action at a site were then made based on a strong weight of evidence from a comprehensive review and evaluation of all MEC-related data.

The Schonstedt is an analog magnetometer effective in detecting ferrous metal. The detection capability of the Schonstedt equipment used was evaluated in the Evaluation Section of the Site Report for each Track 1 site with respect to the types of munitions items that could be present at the site. Schonstedt magnetometers have been most commonly used in the UXO remediation industry for many years. Although the instrument itself does not record its response during survey operations, the results of the investigation were recorded in accordance with contractual and/or work plan requirements in place at the time the work was conducted. In addition, all geophysical investigation data was reviewed in accordance with the Standard Operating Procedures (SOPs) presented in Appendix A of the Track 1 OE RI/FS (*MACTEC, 2004*). The evaluation of site data collected using the Schonstedt or "mag and flag" procedures was considered in conjunction with all other MEC-related data that was collected at Track 1 sites.

The SiteStats/GridStats method, a grid sampling design tool that guided where, how, and how much MEC sampling was performed at a site was used on many of the Track 1 sites. Based on a statistical review of this and other MEC sampling methodologies presented in the Draft *Evaluation of U.S. Army Corps of Engineers Statistical UXO Sampling And Characterization Methodologies* (Draft Statistical Evaluation Report) (*NERL, 2000*), several concerns were identified regarding the assumptions and design of the SS/GS methodology. Although there were problems identified in the Draft Statistical Evaluation Report, the site-specific data that was collected during the investigations still provided valuable information that identified the presence and type of MEC items at a site. In light of the concerns outlined in the Draft Statistical Evaluation Report regarding the SS/GS methodology and referenced in the comment that SS/GS must not be solely relied upon to make property transfer decisions, as stated above, decisions regarding the need for further MEC-related action at a site were made based on a strong weight of evidence from a comprehensive review and evaluation of all MEC-related data.

Regarding the comment that three different munitions response contractors conducted the MEC-related field investigations, sampling, and removal activities at the Track 1 sites, their work was performed according to contractual and/or work plan requirements in place at the time the work was conducted. The purpose and objectives of the work conducted at the sites using approved methodologies were evaluated against the Track 1 DQOs in each Site Report as described above. Although the methodologies or protocols applied during MEC investigations varied from site to site, the general protocols used by each of the Army's munitions response contractors to conduct MEC-related investigations at the Track 1 sites were summarized in Section 2.4 of the Track 1 OE RI/FS (Track 1 Sites Investigation and Sampling Background), and site-specific protocols were described in detail in the Site Reports.

The Proposed Plan summarized the site characterization data evaluated at each of the 21 Track 1 sites, including a description of the type of field-based investigation performed and identification of the Army's munitions response contractors who performed the work. The technical evaluations presented in the Site Reports were also summarized in the Proposed Plan, and the reasons for recommending No Further Action Related to MEC were provided. Please see the Army's Response to General Comment A6 above that describes the scope of the Proposed Plan is to briefly summarize the information relied upon to select the preferred alternative, to provide the public an opportunity to participate in remedy selection. Additional details regarding the individual Site Reports can be found in the relevant sections of the Track 1 OE RI/FS (*MACTEC, 2004*) referenced above.

The low probability of detecting MEC at the Track 1 sites that was referenced in the comment, calculated using the formula above, and presented in Exhibit A only includes a portion of the data that were reviewed as part of the evaluation of previous work completed for each of the sites. The weight of evidence approach used to determine whether a site qualified as Track 1 included a comprehensive review of all site-related information that supplemented MEC sampling information.

The equation used to calculate the "probability that the Army located MEC that may remain on the property" cannot be used as stated for the following reasons:

- The first term in the equation, "P1 = Percent Acreage Sampled", fails to take into account the underlying theory behind sampling. Fundamentally, samples (portions) of a population are taken in order to infer some characteristics about the underlying population, without measuring the entire population (sampling the entire site) for the characteristic (i.e., MEC) in question. The equation ignores the knowledge gained about the site from the sub-set of the area evaluated (i.e., no MEC in the areas sampled) and, as a result, infers that the areas that have not been sampled will contain the MEC that might be present.
- As presented, the equation purports to be "the probability that the Army located MEC that may remain on the property." However, values pertaining to discovered or predicted occurrences of MEC related to the site do not appear in any of the terms used in the equation. Modifying the equation to include a "MEC discovered or predicted" value is possible, but, due to the absence of MEC discovered during sampling at the Track 1 sites, the value would have to be zero. If there is no data on MEC in the equation or the value is zero, then the equation 1) cannot be used to determine a probability related to MEC, or 2) the probability is zero.

The issue of whether MEC, if present, would be discovered based on the number and location of the grids present at any given site was examined during the completion of the Track 1 OE RI/FS (*MACTEC, 2004*). During the review process, USEPA's military munitions expert identified one site (MRS-17) where placement of the grids appeared to be outside the area that would have most likely been used for training. As a result, the BCT concluded that the site did not qualify as a Track 1 site and more data would be

necessary to potentially include the site later. Each of the sites went through a similar evaluation before consensus was given on the no further action determination.

As an additional site-specific example, the probability calculation presented in the comment indicates that the overall probability of detecting MEC at MRS-13A was only 3 percent. This calculation assumed that the site was 62 acres in size and 2.3 acres of the site were sampled. However, as described in the Track 1 OE RI/FS Site Report for MRS-13A, additional data related to the site showed that (1) 14 acres of the site were part of the Area A Landfill that was excavated and replaced with clean fill, and (2) an additional 28 acres were graded during construction of housing at the site. In all, MEC-related data was evaluated for approximately 42 of the 62 acres that were either excavated or graded within the boundaries of MRS-13A.

Since the soil disturbance activities in conjunction with the MEC sampling covered approximately 70 percent of the site but excluded a small undisturbed portion of the site, a follow up investigation of this undisturbed area was conducted during a site walk by a three person team which included a military munitions specialist. The team swept the path walked using a Schonstedt Model GA-52Cx magnetometer. The path walked was also recorded with a GPS unit. All anomalies identified were investigated using hand tools. Items found during the site walk included an inert M69 training mortar, empty M1 clips, and other non-munitions related debris. This additional information was used in conjunction with the sampling data to determine that no further action related to MEC was recommended for MRS-13A.

As described above, all individual sources of data (such as percentage of site sampled, previous investigations or site work, etc.) were evaluated in detail, and decisions regarding the need for further MEC-related action at a site were then made based on a strong weight of evidence from a comprehensive review and evaluation of all MEC-related data.

Based on the evaluations conducted in the Track 1 OE RI/FS and summarized in the Proposed Plan, MEC is not expected at these sites and the level of investigation conducted at the Track 1 sites using the field-based investigation methods described in the individual Site Reports was determined to be adequate.

**General Comment B3:** The Track 1 OE RI/FS and Proposed Plan state that the MEC items potentially present at the Track 1 sites have been exposed to moisture, degradation, and weathering for many years which could prevent them from functioning. This statement contradicts basic UXO safety training and UXO procedures that emphasize the unpredictability of dud or waste munitions (UXO or MEC) specifically due to the fact that it is frequently not possible to tell the actual condition of the internal components of waste munitions in the field. This statement in the Proposed Plan creates a potentially dangerous precedent and will serve to diminish the public's awareness of MEC hazards in the growing communities on and surrounding the former Fort Ord Army base and must be removed from the text of the Proposed Plan. Furthermore, this informal hazard assessment must be dropped as the "de-facto" MEC hazard analysis process that is used to support the Proposed Plan of "No Further Action". The Army should employ its Fort Ord Ordnance Risk Protocol.

**Response:** The Army acknowledges the comment regarding the unpredictable nature of duds or UXO/MEC items under field conditions. However, the statements referenced in the comment that years of weathering could prevent the potential MEC items from functioning via casual contact (i.e., inadvertent and unintentional contact) were made in reference to some MEC items that may potentially be present at the Track 1 sites based on site-specific evaluations. The types of MEC used/suspected at some of these sites are made of cardboard and/or paper, and the weathering process described in the Track 1 OE RI/FS and Proposed Plan will, over time, render the items incapable of functioning as designed. Others (some pyrotechnics) have thin steel bodies which rust through when exposed to the environment for an extended

period. This exposes the pyrotechnic filler to moisture, which, with a few exceptions, degrades its sensitivity and performance. This does not mean that the items will not react to severe and repeated stimulus. It does mean that casual contact is extremely unlikely to function the items and that any energetic response resulting from abuse of the items will likely be limited. The fact that the statement is made that some weathered munitions items are less likely to function due to weathering in no way violates UXO safety, nor does it in any sense suggest that these items should be handled or abused. For each Track 1 site, specific types of MEC items that could be present were evaluated to ensure the validity of the referenced statement. In addition, appropriateness of these statements were verified by UXO/MEC experts.

As described in the Army's Response to General Comment A1 above, the results of the Track 1 OE RI/FS (*MACTEC, 2004*) indicated MEC is not expected at these sites. For these reasons, the Fort Ord Risk Assessment Protocol (which only addresses Track 2 and 3 Munitions Response sites) is not applicable to the Track 1 sites.

**General Comment B4:** The Army needs to explain in the Proposed Plan how the Track 1 site boundaries were developed. The Army's definition of "training" of troops as having occurred in specific areas does not correspond with what was witnessed by the public living near these areas. In some cases, it seems large areas used for training were split up into smaller sites that were included in Track 1. In addition, site boundaries and sampling grid boundaries at many of the sites have changed over time and the work in these areas was done by different contractors on portions of these sites at different times. Hence, overall training or MEC sampling data that is available for larger areas that were broken into smaller Track 1 sites may not be directly applicable, but the data was used to present the rationale for no further action at these sites.

**Response:** As described in the Army's Response to General Comment A2 above, the RI Site Reports for each of the 24 candidate Track 1 sites included an evaluation of the appropriateness of the site boundaries. Recommendations regarding the need for further assessment/investigation of areas adjacent to the site boundaries were also described in the individual RI Site Reports and summarized in the Proposed Plan.

The information used in preparation of the Site Reports and considered in the development of Track 1 site boundaries included historical training maps, aerial photographs, munitions response contractor after action reports (AARs), the archives search reports (ASRs), field training manuals, technical manuals, and interviews. Data from historical training maps and aerial photographs was integrated into a project Geographical Information System (GIS) according to procedures described in the Standard Operating Procedures (SOPs) prepared for the project (Appendix A of the Track 1 OE RI/FS).

Each of the Site Reports included an "Establishment of Site Boundaries" section that described the process used during the investigations over time to develop, revise, and reevaluate the site boundaries as the site-specific data evaluations were conducted. Please see the Army's Response to General Comment A6 above that describes the purpose and scope of the Proposed Plan is to briefly summarize the information relied upon to select the preferred alternative. Additional details regarding the individual RI Site Reports can be found in the Track 1 OE RI/FS.

### C. Track 1 Site-Specific Issues

Several comments were made by members of the public regarding site-specific aspects of the Remedial Investigation (RI) conducted at some of the Track 1 sites as summarized below.

## MRS-5—South of East Garrison

**Comments:** Concerns were expressed regarding the possibility that the RI conducted was not adequate to characterize the site as follows:

- Attachment 5-A-1 of the Site Report Evaluation of Previous Work Checklist asks, “Has the field data been collected and managed in accordance with quality control standards established for the project?” The answer given is no. How can the safety of the site be evaluated if the quality of the data was not adequate? This makes the land unsafe and unsuitable for transfer, and additional investigation and cleanup should be done to substantiate its suitability for transfer.
- Attachment 5-A-1 of the Site Report Evaluation of Previous Work Checklist asks, “Has the minimal amount of sampling been completed, in accordance with the scope of work or contractor plan, for an anticipated target density of UXO?” The answer given is that the data is inconclusive, in which case additional sampling is warranted.
- Attachment 5-A-1 of the Site Report Evaluation of Previous Work Checklist asks, “Should site boundaries be revised?” The answer given is that the data is inconclusive. This conflicts with the statements made in the last meeting with the BCT, between the BCT and the CAG where the Army's contractor stated the parcel boundaries and grids were altered to suit a more accurate study. This does not provide the level of confidence in the integrity and validity of the reports and maps by the Army's contractor.
- Attachment 5-A-1 of the Site Report Evaluation of Previous Work Checklist asks “Was sampling and/or reconnaissance performed within the appropriate area?” The answer given is that the data is inconclusive. The BCT's conclusion on this question is commendable and supports comments about the inadequacy of MEC sampling performed. If the sampling has not been performed within the appropriate area then it indicates that another RI/FS is required prior to coming to a Remedy Selection, a Record of Decision, a Remedial Design and a Remedial Action, (the actual geophysical clean up).

**Response:** The checklist referenced in the comments was used to summarize and document components of the initial evaluation of previous work conducted at the site. This information was included in a detailed, comprehensive evaluation of all other site-specific data in the Site Report Evaluation Section of the Track 1 OE RI/FS (*MACTEC, 2004*) to determine (1) the adequacy of the MEC sampling conducted, including applicable standards or methodologies used by the Army's munitions response contractors; (2) the performance of the geophysical equipment used during MEC sampling; and (3) the adequacy, completeness, and quality of management procedures regarding the MEC sampling data collected at this site. The results of the evaluation were presented in the Conclusions sections of the Site Report.

This site was identified based on the presence of an inert 3.5-inch rocket motor found and removed from the branches of a tree. Reconnaissance and MEC sampling were performed within MRS-5, and no evidence of MEC or munitions debris items were found. No training areas where military munitions would be used were identified on available historical training maps. As described in the Army's response to General Comment B1 above, after review of the MRS-5 Site Report in the Draft Final Track 1 OE RI/FS report, the project team determined an additional field investigation (site walk) was warranted to provide additional information to supplement the available data, including information needs referenced in the comment and documented in the checklist. A site walk was conducted in 2003 by a three person team which included a military munitions specialist using a magnetometer to detect subsurface anomalies in locations selected in order to supplement information collected during previous reconnaissance and MEC sampling efforts at this site. The site walk was conducted by a military munitions specialist using a

magnetometer to detect buried anomalies. The only items found during the site walk were munitions debris (an expended illumination signal), small arms ammunition, and spent small arms ammunition.

The additional data collected during the site walk was reevaluated in the Final Track 1 OE RI/FS. Based on a strong weight of evidence from comprehensive evaluations conducted in the Track 1 OE RI/FS and summarized in the Proposed Plan, MEC is not expected at this site and the level of investigation at MRS-5 using the field-based investigation methods described in the Site Report was determined by the project team to be adequate for the purposes of determining that No Further Action Related to MEC is required.

### MRS-13A—Practice Mortar Range

**Comments:** Concerns were expressed regarding the possibility that the RI conducted was not adequate to characterize the site as follows:

- Although MEC previously deposited in the landfill at the site was removed during the landfill excavation, it is not possible to tell from the Site Report which MEC were discovered as a result of the landfill excavation or during pipeline installation.
- Because MEC items were found at the site during installation of the pipeline that are more hazardous than the training items documented at Track 1 sites (for which unacceptable risks are not anticipated), additional MEC investigation in the vicinity of the pipeline route should be performed.
- Investigation records and preparation of the checklist evaluating previous work at the site were not adequate and the investigation locations were positioned using the Site Stats/Grid Stats method which has been discontinued due to inadequacies.
- Attachment 13-A-1 of the Site Report Evaluation of Previous Work Checklist asks, “Should site boundaries be revised?” The answer given is no. This conflicts with the statements made in the last meeting with the BCT, between the BCT and the CAG where the Army's contractor stated the parcel boundaries and grids were altered to suit a more accurate study. This does not provide the level of confidence in the integrity and validity of the reports and maps by the Army's contractor.
- Attachment 13-A-1 of the Site Report Evaluation of Previous Work Checklist asks “Was sampling and/or reconnaissance performed within the appropriate area?” The answer given was no. The BCT's conclusion on this question is commendable and supports comments about the inadequacy of MEC sampling performed. If the sampling has not been performed within the appropriate area then it indicates that another RI/FS is required prior to coming to a Remedy Selection, a Record of Decision, a Remedial Design and a Remedial Action, (the actual geophysical clean up).

**Response:** The checklist referenced in the comments was used to summarize and document components of the initial evaluation of previous work conducted at the site. This information was included in a detailed, comprehensive evaluation of all other site-specific data in the Site Report Evaluation Section of the Track 1 OE RI/FS (*MACTEC, 2004*) to determine (1) the adequacy of the MEC sampling conducted, including applicable standards or methodologies used by the Army's munitions response contractors; (2) the performance of the geophysical equipment used during MEC sampling; and (3) the adequacy, completeness, and quality of management procedures regarding the MEC sampling data collected at this site. The results of the evaluation were presented in the Conclusions sections of the Site Report.

The western portion of MRS-13A has undergone extensive soil disturbance over time without turning up any evidence of MEC from past military training. In all, approximately 42 of the 61 acres within the boundary of MRS-13A (approximately 70% of the site) were excavated and re-graded during the Area A

landfill relocation and construction of Abrams housing. No evidence of MEC was found during housing construction activities within the site boundary or immediate vicinity. During removal of landfill material, several munitions debris items and three MEC items were identified within and next to MRS-13A and were removed. The MEC items and munitions debris found in the excavated landfill material were likely disposed of as waste material and are not considered representative of military munitions-related training activities. Based on the literature review, the site was identified as a practice mortar training area using inert projectiles. MEC sampling was performed at the site, and no evidence the site was used for live mortar training was found. Investigations indicated the area was used for practice training with items that were not explosive.

Although pipeline trenching work extended from the landfill area to other parts of the Main Garrison, munitions-related materials were found only in trenches near the landfill and Area A. Therefore, these incidental munitions-related materials were likely associated with placement of the items in the landfill rather than training-related activities. The incidental munitions items found in Area A and during the pipeline work are listed in the Site Report of the Track 1 OE RI/FS.

Based on the evaluations conducted during the Draft Track 1 OE RI/FS, the central portion of the site was identified as the only area that had not been excavated or graded. As described in the Army's response to General Comment B1 above, after review of the MRS-13A Site Report in the Draft Final Track 1 OE RI/FS report, the project team determined an additional field investigation (site walk) was warranted to provide information to supplement available data, including the information needs referenced in the comment and documented in the checklist. A site walk was conducted in 2004 by a three-person team which included a military munitions specialist using a magnetometer to detect subsurface anomalies in locations selected in order to supplement information collected during previous reconnaissance and MEC sampling efforts at this site. The site walk was conducted by a military munitions specialist using a magnetometer to detect buried anomalies. The only munitions debris item found during the site walk was an inert training mortar. Small arms ammunition clips and expended small arms ammunition were also observed.

The additional data collected during the site walk was reevaluated in the Final Track 1 OE RI/FS. Regarding the reference in the comment about a meeting with the BCT and CAG in which the Army's contractor discussed reevaluating the MRS-13A site boundary, the reevaluation was performed and the project team determined in the Final Track 1 OE RI/FS that the site boundary did not need to be altered. Based on a strong weight of evidence from comprehensive evaluations conducted in the Track 1 OE RI/FS and summarized in the Proposed Plan, MEC is not expected at this site and the level of investigation at MRS-13A using the field-based investigation methods described in the Site Report was determined by the project team to be adequate for the purposes of determining that No Further Action Related to MEC is required.

### MRS-22 (Site 3)—Beach Ranges

**Comments Regarding No Further Remedial Action with Monitoring for Ecological Risks from Chemical Contamination at Site 3 (MRS-22):** Members of the public expressed concern about residual lead contamination at the site. The majority of the comments did not express concerns regarding potential ecological risks that were the subject of the Proposed Plan. Comments were made regarding whether the site is in a state that is protective of human health for reuse of the site as a State Park, which was not the subject of the Proposed Plan. In addition, an explanation was requested regarding what is meant by the statement in the Proposed Plan regarding a "health-based cleanup." Concerns were also expressed that additional cleanup should be conducted to protect human health because the health-based cleanup level for lead in soil of 1,860 milligrams per kilogram (mg/kg) applied in the previous cleanup is above EPA and Cal/EPA threshold levels that are considered safe (150 to 1,200 mg/kg lead cleanup levels

were referenced in the comment depending on the source and assumed reuse scenario). Impacts to groundwater and stormwater from residual chemical contamination at the site were also of concern, as were shell casings from spent small arms ammunition remaining at the site that may present a hazard to children reusing the site as a park.

**Response:** Regarding the comments on whether the cleanup was adequate to protect human health for reuse of the site as a State Park, this issue was not the subject of the Proposed Plan (*Army, 2004*). Information on the cleanup can be found in the *Interim Record of Decision, Site 3, Beach Trainfire Ranges, Fort Ord, California* (Site 3 Interim ROD; *Army, 1997*) and *Final Remedial Action Confirmation Report and Post-Remediation Risk Assessment, Site 3 Remedial Action, Basewide Remedial Investigation Sites, Former Fort, California* (Post-Remediation Confirmation Report; *IT, 2000*). Regarding the comment requesting an explanation of the term "health-based cleanup" as used in the Proposed Plan, the term refers to the cleanup conducted as referenced above (*Army, 1997; IT, 2000*).

After the cleanup was completed at the site (excavation of spent ammunition and lead-containing soil), the remaining average site-wide lead concentration in soil was 161 mg/kg based on the collection and lead analysis of 1,862 soil samples as described in Section 3.4 (Results of Confirmation Sampling) of the Post-Remediation Confirmation Report (*IT, 2000*).

Regarding the comment on potential impacts to groundwater or stormwater at former Fort Ord from remaining chemical contamination at Site 3 (MRS-22), this issue was not the subject of the Proposed Plan (*Army, 2004*). Information on the potential impacts to waters at Site 3 can be found in the Basewide HTW RI/FS (*HLA, 1995*); the Site 3 Interim ROD (*Army, 1997*); and the ongoing Basewide Groundwater Monitoring Program, which have not identified any contamination of waters at the site.

Regarding the comment on the presence of shell casings from spent small arms ammunition remaining at the site that may present a hazard to people reusing the site as a park, this issue was not the subject of the Proposed Plan (*Army, 2004*). Information on the cleanup that included removal of spent ammunition from over 48 acres of Site 3 (MRS-22) as part of the cleanup performed at the small arms firing ranges described above can be found in the Site 3 Interim ROD (*Army, 1997*).

**Comments Regarding No Further Action Related to MEC at MRS-22:** Concerns were expressed regarding recreational reuse of MRS-22 as a state park due to potentially remaining MEC that may present a hazard to site reusers during recreational activities.

In addition, concerns were expressed regarding the possibility that the RI conducted was not adequate to characterize the site as follows:

- MEC were found in areas that were not part of the investigation and additional MEC may remain in these areas. In addition, some of the MEC that has been found at MRS-22 is not consistent with the known historical or training uses of the site.
- Investigation records and preparation of the checklist evaluating previous work at the site were not adequate or the investigation locations were positioned using the Site Stats/Grid Stats method, the use of which has been discontinued due to inadequacies.
- Additional Conceptual Site Models (CSMs) and investigations designed to locate open detonation pits, kick-outs (i.e., MEC being ejected without being destroyed during open detonations), burial pits, and MEC reportedly fired into the dunes at MRS-22 from offshore should be developed and performed.

- The amount of MEC sampling (i.e., percentage of the site sampled in terms of square area) and the depth of sampling that was conducted (i.e., to 4 feet below ground surface) conducted at the site was not adequate to characterize the entire site.
- There are discrepancies between the number of acres included in the site described in the Engineering Evaluation/Cost Analysis (EECA) and RI reports.

**Response:** Please see the Army's Responses to General Comment B2 above that describes that the field-based investigations conducted at the Track 1 sites were evaluated in detail in the site-specific sections of the MRS-22 Site Report in the Track 1 OE RI/FS (*MACTEC, 2004*) to determine (1) the adequacy of the MEC sampling conducted (e.g., percentage of the site sampled, use of Site Stats/Grid Stats method, depth of sampling, and investigation of MEC in areas not associated with historical or training areas); (2) the performance of the geophysical equipment used during MEC sampling; and (3) the adequacy, completeness, and quality of management procedures regarding the MEC sampling data collected at the site.

The site has been extensively walked, mapped, and disturbed, and remediation has been conducted in the dune area. With the exception of the ASP, only OE scrap was found during the OE sampling programs. In addition to the MEC sampling conducted and the test pits excavated during the Basewide RI/FS and biological sampling, approximately 162,800 cubic yards of soil was excavated over 48 acres of MRS-22 as part of the remedial action performed at the small arms firing ranges. During the excavation and soil removal, only two MEC scrap items were found.

Regarding the potential presence of MEC reportedly fired into the dunes at MRS-22 from offshore, although archival information indicates in the 1940s, 75mm projectiles were fired into the sand dunes at MRS-22 as part of amphibious training, no training maps or other historical records indicate the use of projectiles as part of training activities at the site. The MEC sampling results and other field-based investigations conducted at MRS-22 provide no evidence that 75mm projectiles or high explosives (HE) were used at the site. Specifically, no MEC related to amphibious training or battle demonstrations were found and there are no historical documents that indicate that the beach area was used for amphibious vehicle training.

Regarding the potential presence of burial pits at the Track 1 sites or anywhere at the former Fort Ord, it should be noted that review of Fort Ord regulations in effect during a portion of the time that the Beach Ranges were active indicated that "strict accountability will be maintained so that items cannot be buried or discarded to avoid returning unspent ammunition." To discourage the burial or discarding of unspent ammunition, ammunition was inventoried when checked out from the Ammo Supply Point (ASP) and again upon turn in of the unused ammunition to the ASP. Although it is possible that unspent ammunition could have been buried at Fort Ord, there was no indication that the probability would be higher at Track 1 sites including MRS-22 than at other places at Fort Ord.

Regarding the potential presence of open detonation pits at MRS-22, no evidence of open detonation pits or areas was found during the literature review or field-based investigations conducted under the Track 1 OE RI/FS. Although it is possible that open detonations of MEC could have been performed at Fort Ord, there was no indication that the probability would be higher at Track 1 sites including MRS-22 than at other places at Fort Ord.

No evidence was found during the evaluation conducted in the Track 1 OE RI/FS to indicate that burial pits, open detonation pits, or MEC fired from offshore were present at MRS-22; therefore, these activities were not included in the conceptual site model (CSM). The site boundaries of MRS-22 and its total

acreage of 952 acres were established in the Track 1 OE RI/FS based on the 1997 Archives Search, which was completed after and superseded the information in the EE/CA report.

Based on a strong weight of evidence from comprehensive evaluations conducted in the Track 1 OE RI/FS and summarized in the Proposed Plan, MEC is not expected at this site and the level of investigation at MRS-22 using the field-based investigation methods described in the Site Report was determined by the project team to be adequate for the purposes of determining that No Further Action Related to MEC is required.

As described in Section 2.9.6 of this ROD, as an added precaution, the DTSC and California Department of Parks and Recreation (California State Parks) will enter into a Memorandum of Understanding (MOU) for additional site surveillance activities on MRS-22. The MOU will be implemented to inspect the beach property for the presence of MEC items periodically and after erosion-inducing weather events. The MOU will also call for proper notification in the case of any discovery of MEC items (or potential MEC items) during these inspections. The Army will provide ordnance recognition and safety training to all California State Parks employees who work at the former Fort Ord Beach Trainfire Ranges. In addition, any construction personnel involved in intrusive operations at the site will attend the Army's ordnance recognition and safety training. State Parks will notify the Army of planned intrusive activities and in turn the Army will provide ordnance recognition and safety training to workers prior to the start of intrusive work. The Army will amend the Munitions Response Site Security Program to include the implementation procedures for offering and providing ordnance recognition and safety training.

MRS-24B—Practice Hand Grenade Range; MRS-24D—Booby Traps; MRS-24E—Practice Rifle Grenade Range

**Comments:** Concerns were expressed regarding the possibility that the RI conducted was not adequate to characterize these sites as follows:

- The boundaries of MRS-24B, -24D, and 24-E ASR should be expanded to contain adjacent areas known to be used for military munitions training and be further investigated. MEC sampling in these areas was not sufficient to determine whether no action is necessary before these sites are transferred for redevelopment for new housing.
- MEC sampling only appears to have been conducted in building-free areas. Many housing structures occupy these sites, where it would have been impossible to survey the ground beneath these structures.
- Monterey Bay Military Housing plans to demolish the entire housing structures at Fitch Park and rebuild completely new houses. Fitch Park demolition is scheduled to begin in February 2005 at MRS-24 series sites. Based on the inconsistent site boundaries and limited MEC sampling conducted at these sites, further MEC study and sampling should be conducted either during or upon the completion of the demolition, excavation, grading and other construction preparation actions to facilitate a more thorough sampling of the ranges/areas of concern.

**Response:** Please see the Army's Responses to General Comment B2 above that describes that the field-based investigations conducted at the Track 1 sites were evaluated in detail in the site-specific sections of the MRS-24B, -24D, and -24E Site Reports in the Track 1 OE RI/FS (*MACTEC, 2004*) to determine (1) the adequacy of the MEC sampling conducted (e.g., percentage of the site sampled); (2) the performance of the geophysical equipment used during MEC sampling (e.g., use of the Schonstedt or SiteStats/GridStats); and (3) the adequacy, completeness, and quality of management procedures

regarding the MEC sampling data collected at the site. These evaluations considered where MEC sampling was conducted (e.g., near existing buildings and the adjacent ranges).

Based on the results of the Track 1 OE RI/FS, the type of training performed at these sites involved only the use of practice and pyrotechnic items that are not designed to cause injury. In addition, the area inclusive of these sites was extensively graded prior to construction of the housing, and has been used for housing since the 1960s. No evidence that high explosives were used at these sites or that the sites were used an impact areas were discovered. It is expected that any MEC on the surface of these sites would have been discovered previously. Although field-based investigations at these sites were limited to areas where structures were not constructed, the data that was collected were consistent with the identified training on these sites using only practice items.

Based on a strong weight of evidence from comprehensive evaluations conducted in the Track 1 OE RI/FS and summarized in the Proposed Plan, MEC is not expected at this site and the level of investigation at these sites using the field-based investigation methods described in the Site Report was determined by the project team to be adequate for the purposes of determining that No Further Action Related to MEC is required.

Regarding the planned redevelopment to build new housing, although MEC is not expected, the Army recommends reasonable and prudent precautions be taken when conducting intrusive activities at these sites. The Army will provide "ordnance recognition and safety training" to construction personnel involved in intrusive operations at the site to increase their awareness of and ability to identify MEC items. Trained construction personnel will contact an appropriate authority, if a potential MEC item is encountered. Additionally, while these intrusive activities are ongoing, the Army will provide ordnance safety refresher education as appropriate.

MRS-32A—Oil Well Road Training Area; MRS-32B—Oil Well Road

## Training Area II

**Comments:** Concerns were expressed regarding the possibility that the RI conducted was not adequate to characterize these sites as follows:

- There is a potential significant contradiction between the Proposed Plan and the Track 1 OE RI/FS on the subject of future uses of MRS-32A and -32B. The Proposed Plan states, "Proposed reuse plans for MRS-32A include maintaining the land as habitat reserve". However, the Track OE 1 RI/FS states, "A small portion of Site OE-32A lies on property that was transferred to the Bureau of Land Management (BLM) in 1996 and will be maintained as habitat reserve. The remainder of the site will be transferred to Monterey County to be used as an overflow parking area for the Laguna Seca Raceway." This is a major discrepancy that should be corrected prior to transfer of this property. Use of the property as an overflow parking area indicates that intrusive construction activities are going to take place.
- The sampling conducted at MRS-32A and -32B may not have been adequate to locate target areas within the site. It is possible that the SiteStats/GridStats investigation protocol was not adequate to identify the former targets within these sites. In addition, "mag and flag" geophysics methods were used and no geophysical data is available for review.
- The statement is made in the Track 1 OE RI/FS for MRS-32A that, "However, according to the description provided in Revised Archives Search Report, the firing points associated with Area S

may have been located within Site OE-32A.” Area S is identified as reported to have included “many target areas for shoulder fired projectiles, armor piercing projectiles, and possibly mortar.” Similar discrepancies regarding the type of MEC usage was noted for MRS-32B. Because of the uncertainty of the past use of these sites and possible inadequacies in the methods of investigation, the adequacy of the investigations should be reviewed and consideration be given to performing additional investigations in these areas.

- The site hazard analysis for MRS-32A and -32B should be revised to include intrusive construction activities to determine if current site conditions are adequately protective of future site users.

**Response:** Regarding the comment that there is a contradiction between the Proposed Plan and the Track 1 OE RI/FS on the subject of future uses of MRS-32A and -32B, the designated reuse of the parcel underlying these sites were changed from development to habitat reserve during the course of the Track 1 investigation. The current anticipated reuse for the area underlain by MRS-32A and -32B is habitat reserve.

Please see the Army's Responses to General Comment B2 above that describes that the field-based investigations conducted at the Track 1 sites were evaluated in detail in the site-specific sections of the MRS-32A and -32B Site Reports in the Track 1 OE RI/FS (*MACTEC, 2004*) to determine (1) the adequacy of the MEC sampling conducted (e.g., percentage of the site sampled); (2) the performance of the geophysical equipment used during MEC sampling (e.g., use of the Schonstedt or SiteStats/GridStats); and (3) the adequacy, completeness, and quality of management procedures regarding the MEC sampling data collected at the site.

MEC sampling was conducted throughout these sites using 100% grid sampling (all anomalies within each sample grid were intrusively investigated). No evidence was found that indicated the use of military munitions associated with a tank gunnery range, shoulder-launched projectiles, or rifle grenades at MRS-32A or shoulder-launched projectiles or tanks at MRS-32B.

Based on a strong weight of evidence from comprehensive evaluations conducted in the Track 1 OE RI/FS and summarized in the Proposed Plan, MEC is not expected at these sites and the level of investigation at the Track 1 sites using the field-based investigation methods described in the individual Site Reports was determined by the project team to be adequate for the purposes of determining that No Further Action Related to MEC is required.

#### MRS-49—Former Rifle Grenade Range

**Comments:** Concerns were expressed regarding the possibility that the RI conducted was not adequate to characterize the site as follows:

- No formal investigation of the site has been conducted and only an informal site walk covering a very small portion of the site has been conducted. The amount of MEC sampling that was conducted at the site was not adequate to characterize the entire site.
- The site is surrounded by housing and there are two schools directly adjacent to the site; therefore it is likely children will fully explore and play in this area. MEC has been found on or near MRS-49 as documented in the two EOD incidents reported in the Track 1 OE RI/FS and one incident not reported in the Track 1 OE RI/FS but documented in the Monterey Herald on October 7, 1976 (two children injured with fragments from UXO located approximately 200 yards behind 273 Ardennes Circle).

- The checklist evaluating previous work at the site indicates there is evidence the site was used as an impact area for MEC such as mortars, projectiles, rifle grenades or other launched MEC items, and there is historical evidence that training involved use of high or low explosive MEC items at this site.
- These discoveries, including the presence of the fox hole containing the 1993 MEC discovery and additional firing positions discovered during the site inspections, indicate that the site may have been used as a troop maneuvering area. This potential source of MEC contamination was not considered as part of the conceptual site model developed for the site.
- The conceptual site model (CSM) should be updated to document the potential MEC contamination source of informal disposal of MEC by troops during maneuvers. This is especially relevant in light of the injuries to the two children that occurred at this site in 1976.
- The two informal site walk inspections should be supplemented by a formal investigation of this site for small MEC burial areas prior to transfer of the property for development.
- The Army should conduct a full RI/FS inspection of the site for unexploded ordnance (MEC) to insure no more children or adults are seriously injured or killed due to finding a MEC item.

**Response:** Please see the Army's Responses to General Comment B2 above that describes that the field-based investigations conducted at the Track 1 sites were evaluated in detail in the site-specific sections of the MRS-49 Site Report in the Track 1 OE RI/FS (*MACTEC, 2004*) to determine (1) the adequacy of the MEC sampling conducted (e.g., percentage of the site sampled); (2) the performance of the geophysical equipment used during MEC sampling (e.g., use of the Schonstedt or SiteStats/GridStats); and (3) the adequacy, completeness, and quality of management procedures regarding the MEC sampling data collected at the site.

Although MRS-49 was identified as a rifle grenade training area, there was no evidence found during the literature search, either of the site reconnaissance events, or the additional site walk conducted at MRS-49 in 2004 at a location selected in order to supplement information collected during previous reconnaissance efforts at this site. The site walk was conducted by a three-person team which included military munitions specialist using a magnetometer to detect buried anomalies. The only items found during the site walk included munitions debris (an expended smoke signal, an expended smoke grenade, and the candle housing for a 105mm illumination projectile) and small arms ammunition. No evidence was found during any of the field-based investigations to support the use of rifle grenades, high explosive projectiles, or penetrating MEC. In addition, the area surrounding the site has been used for housing and schools since the 1960s, and it is expected that any MEC on the surface would have been discovered previously. In addition, there was no evidence to suggest that informal disposal of MEC in burial pits would be more common within MRS-49 than in other open areas of the former Fort Ord. Therefore, these potential scenarios were not included in the CSM for this site.

Regarding the reference in the comment to MEC incidents causing injuries on or near MRS-49 in 1976, only one of these incidents was indirectly related to the MRS-49 area because it occurred in the Fitch Park Housing Area. The other incidents occurred in other parts of the former Fort Ord not associated with this site. Contact with personnel present at Fort Ord during the time period of the incident at the Fitch Park Housing Area reported that the youth found M79 grenades within one of the nearby ranges (either Range 45 or 48) outside of MRS-49 and carried it back to the Fitch Park housing area. The type of MEC involved in the incident was not identified as being in use during the time period that MRS-49 was reportedly in use and was not retrieved from MRS-49; therefore, this incident was not related to suspected use of MRS-49 as a training area. It was reported that several MEC items were brought back to the

housing area by the youth, and the items divulged by the youth were confiscated by the authorities prior to the incident. However, one item was reportedly not divulged and turned over to authorities by the youth. This item was hidden and retrieved by the youth at a later time, when it functioned and caused injuries during handling. This incident is described in the OE RI/FS Literature Review (HLA, 2000).

Based on a strong weight of evidence from comprehensive evaluations conducted in the Track 1 OE RI/FS and summarized in the Proposed Plan, MEC is not expected at these sites and the level of investigation at the Track 1 sites using the field-based investigation methods described in the individual Site Reports was determined by the project team to be adequate for the purposes of determining that No Further Action Related to MEC is required.

#### MRS-59A—Unnamed

**Comments:** Concerns were expressed regarding the possibility that the RI conducted was not adequate to characterize the site as follows:

- Evidence indicates that the site was used as a troop maneuver area, but this potential source of MEC contamination is not included in the conceptual site model.
- Although some MEC sampling was performed, the documentation of this sampling effort is so inadequate that according to the Proposed Plan “it is not known if the anomalies identified at MRS-59A were intrusively investigated.”
- Although site walks were conducted at the site in an attempt to fill in data gaps, they were informal and not subject to quality control appropriate for MEC sampling efforts.
- The conceptual site model (CSM) should be updated to include troop maneuvering and burial of MEC as a potential contamination source.
- A formal sampling plan should be developed and implemented with adequate quality controls to ensure future users of the property that the area is likely to be free of MEC contamination.

**Response:** Please see the Army's Responses to General Comment B2 above that describes that the field-based investigations conducted at the Track 1 sites were evaluated in detail in the site-specific sections of the MRS-59A Site Report in the Track 1 OE RI/FS (MACTEC, 2004) to determine (1) the adequacy of the MEC sampling conducted (e.g., percentage of the site sampled); (2) the performance of the geophysical equipment used during MEC sampling (e.g., use of the Schonstedt or SiteStats/GridStats); and (3) the adequacy, completeness, and quality of management procedures regarding the MEC sampling data collected at the site.

The site was identified as a possible 2.36-inch rocket range during interviews conducted during the PA/SI phase of the Fort Ord Archive Search. The site appears to have been used for/or been within the downrange area of small arms ranges from the 1930s until base closure in 1994. No training areas where military munitions would be used were identified on historical training maps. Two site reconnaissance efforts were performed within MRS-59A, and no evidence of the use of 2.36-inch rockets or the presence of an impact area (e.g., firing points, targets, fragmentation, fuzes, or projectiles) was found. In addition, a site walk was conducted in 2003 at a location selected in order to supplement information collected during previous reconnaissance efforts at this site. The site walk was conducted by a military munitions specialist using a magnetometer to detect buried anomalies. Items found during the site walk included munitions debris (two expended pyrotechnic signals), small arms ammunition, and small arms ammunition clips. This additional information was used in conjunction with the sampling data to

determine that no further action related to MEC was recommended for MRS-59A. In addition, there was no evidence to suggest that burial pits would be more common within MRS-59A than in other open areas of the former Fort Ord. Therefore, potential troop maneuvering and burial pit scenarios were not included in the CSM for this site.

Based on a strong weight of evidence from comprehensive evaluations conducted in the Track 1 OE RI/FS and summarized in the Proposed Plan, MEC is not expected at these sites and the level of investigation at the Track 1 sites using the field-based investigation methods described in the individual Site Reports was determined by the project team to be adequate for the purposes of determining that No Further Action Related to MEC is required.

### MRS-62—Laguna Seca Open Space

**Comments:** It has been reported by a commentator that a worker at the Laguna Seca Racetrack related to him that campers regularly find empty shell casings while leveling an area for a tent or trailer in the current Laguna Seca Racetrack parking areas.

**Response:** Expended blank small arms ammunition were observed during MEC sampling at MRS-62 and during the site walk performed at MRS-62 as described in the Track 1 OE RI/FS and Proposed Plan. However, no MEC or evidence of the use of military munitions were identified in the RI for this site. As described in the Track 1 OE RI/FS, spent ammunition is not investigated as part of the munitions response program. Soil contamination that could result from high concentrations of bullets is being evaluated under the Basewide Range Assessment currently being conducted.

## 3.4 Summary of Comments

On the basis of the written and oral comments received, the Army's Proposed Plan was generally accepted by the public. Public concerns were expressed regarding the following issues:

- **Regulatory Issues**—Some members of the public felt it was not possible to determine whether the proposed No Further Action Related to MEC remedy for the Track 1 sites is protective of human health and the environment under the existing NCP CERCLA regulations. The concerns focused on: (1) the Remedial Investigation (RI) was not based on a full site investigation approach; (2) a Risk Assessment (RA) and Feasibility Study (FS) were not conducted for the Track 1 sites; (3) the Proposed Plan did not provide sufficient details about the RIs conducted and presented in the RI Site Reports; and (4) the Track 1 OE RI/FS and Proposed Plan did not adequately address community involvement or consider the affected community in the evaluation of potential MEC risks at the Track 1 sites.
- **Technical Issues**—Some members of the public felt the general content of the information provided in the RI Site Reports in the Track 1 OE RI/FS (and summarized in the Proposed Plan) such as (1) the accuracy of historical records on MEC usage; (2) the amount, types, and adequacy of MEC sampling conducted; and (3) the way the Track 1 site boundaries were created, was not adequate to determine that no further action is required at these sites.
- **Site-Specific Track 1 Issues**—Some members of the public felt the site-specific content of the information provided in several of the RI Site Reports in the Track 1 OE RI/FS and summarized in the Proposed Plan was not adequate to determine that no further action is required at these sites.

The Army has addressed the concerns raised by the public regarding the Track 1 OE RI/FS and Proposed Plan by providing additional clarification in the responses provided in this Responsiveness Summary.

Army responses in these sections address (1) the components of the CERCLA process that are required and were followed regarding a no action decision (Section A: Regulatory Issues); (2) the remedial investigation methodology followed in the Track 1 OE RI/FS (*MACTEC, 2004*) (Section B: Technical Issues); and (3) the details of the RI/FS conducted for each of the 21 Track 1 sites (Section C: Site-Specific Issues).

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TABLE

Table 1. Summary of Track 1 Site Remedial Investigations  
Record of Decision No Further Action Related to Munitions and Explosives of Concern  
Former Fort Ord, California

Track 1 Site Number	Track 1 Site Name	Proposed Reuse or Current Use	Track 1 Category	Reconnaissance <sup>(1)</sup>	Sampling <sup>(2)</sup>	Site Walk <sup>(3)</sup>	Ordnance Recognition & Safety Training Recommended	Ordnance Recognition & Safety Training Available to Landowner
1	Flame Thrower Range	Residential Development	3		X		X	X
5	South of East Garrison	Habitat Corridor & Development	3	X	X	X	X	X
6	Booby Traps and Land Mines	Development with Reserve Areas	3		X	X	X	X
13A	Practice Mortar Range	Residential Development and Park	2		X	X	X	X
20	Recoilless Rifle Range	Development	1		X			X
22	Beach Trainfire Ranges	State Park	3		X		X	X
24B	Practice Hand Grenade Range	Housing	3		X		X	X
24D	Booby Traps	Housing	3		X		X	X
24E	Practice Rifle Grenade Range	Housing	3		X		X	X
27X	Training Site 24	Habitat Reserve	3		X			X
27Y	Training Site 25	Habitat Reserve & Development	3		X		X	X

**Footnotes:**

(1, 2, 3) Additional descriptions of these activities are provided in Section 2.8 of this ROD.

(1) Reconnaissance is the first step in the data collection effort and is generally part of a Preliminary Assessment/Site Inspection phase.

(2) Sampling is generally the next step in collection of data and involved dividing the site into grids or lanes and conducting geophysical sweeps of the site as directed by an approved work plan. Some sites went directly to sampling, skipping the reconnaissance step, based on the results of the initial 1993 Archive Search Report. These sites included MRS-1 and MRS-6. Sampling would generally be considered part of a remedial investigation (RI).

(3) Site Walks were conducted following the submittal of the Draft Final Track 1 OE RI/FS to address regulatory agency requests for additional site information. Site walk methodologies ranged from conducting visual surveys to sweeping the path walked with a magnetometer and excavation of detected anomalies depending on the site information needed.

Table 1. Summary of Track 1 Site Remedial Investigations  
Record of Decision No Further Action Related to Munitions and Explosives of Concern  
Former Fort Ord, California

Track 1 Site Number	Track 1 Site Name	Proposed Reuse or Current Use	Track 1 Category	Reconnaissance <sup>(1)</sup>	Sampling <sup>(2)</sup>	Site Walk <sup>(3)</sup>	Ordnance Recognition & Safety Training Recommended	Ordnance Recognition & Safety Training Available to Landowner
32A	Oil Well Road Training Area	Habitat Reserve	3		X			X
32B	Oil Well Road II	Habitat Reserve	3		X			X
39	Mine & Booby Trap Training Area	Housing	3		X		X	X
49	Former Rifle Grenade Range	Development	3	X		X	X	X
59A	Unnamed	Development	3	X	X	X	X	X
62	Laguna Seca Open Space	Development	3	X		X	X	X
63	Canyon Training Area	Habitat Reserve	3	X		X		X
66	Signal Corps Small Arms	Habitat Reserve & Development	3	X	X	X	X	X
69	Unnamed	Habitat Reserve	1	X				X
70	Unnamed	Habitat Reserve	1	X		X		X

**Footnotes:**

(1, 2, 3) Additional descriptions of these activities are provided in Section 2.8 of this ROD.

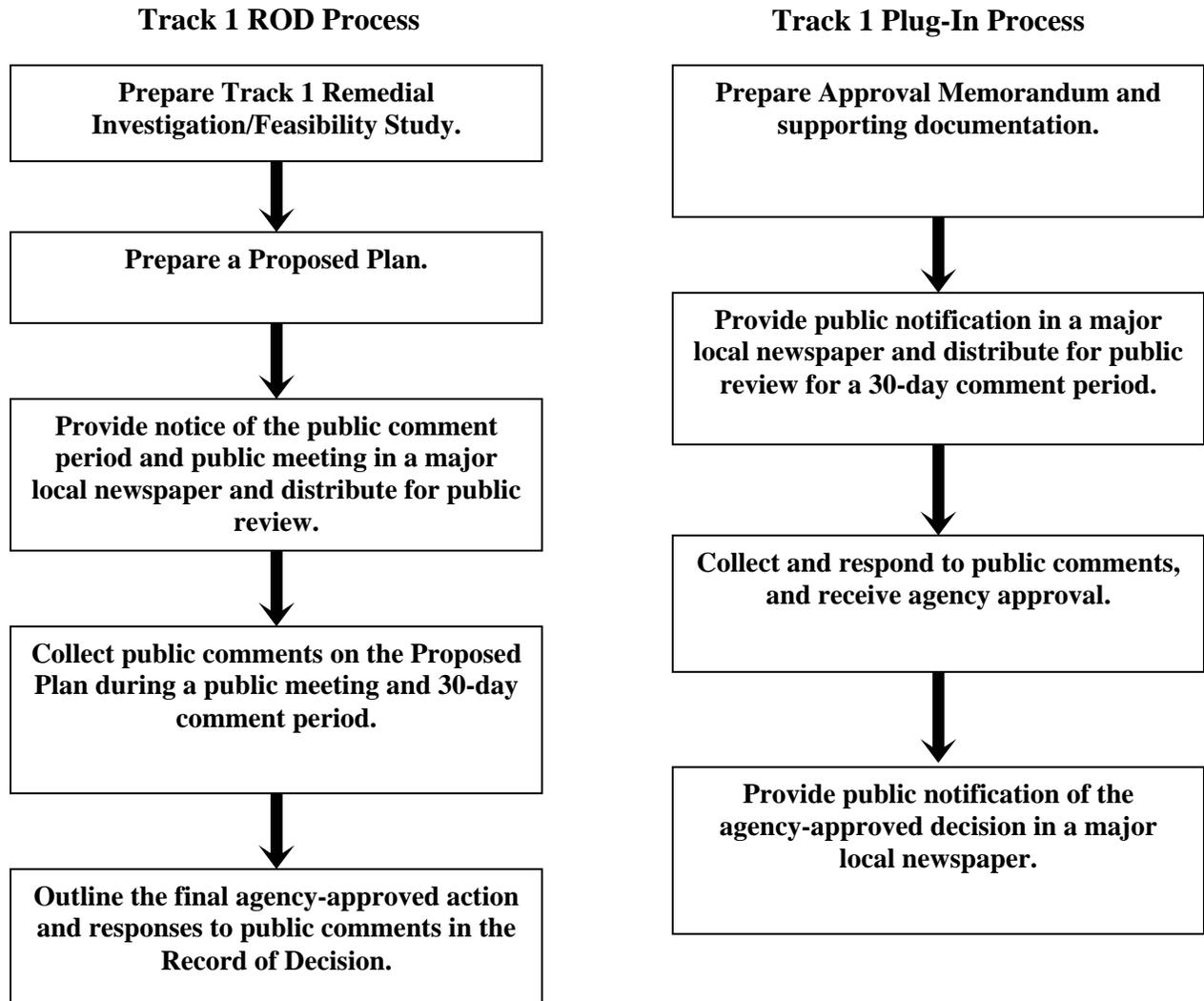
(1) Reconnaissance is the first step in the data collection effort and is generally part of a Preliminary Assessment/Site Inspection phase.

(2) Sampling is generally the next step in collection of data and involved dividing the site into grids or lanes and conducting geophysical sweeps of the site as directed by an approved work plan. Some sites went directly to sampling, skipping the reconnaissance step, based on the results of the initial 1993 Archive Search Report. These sites included MRS-1 and MRS-6. Sampling would generally be considered part of a remedial investigation (RI).

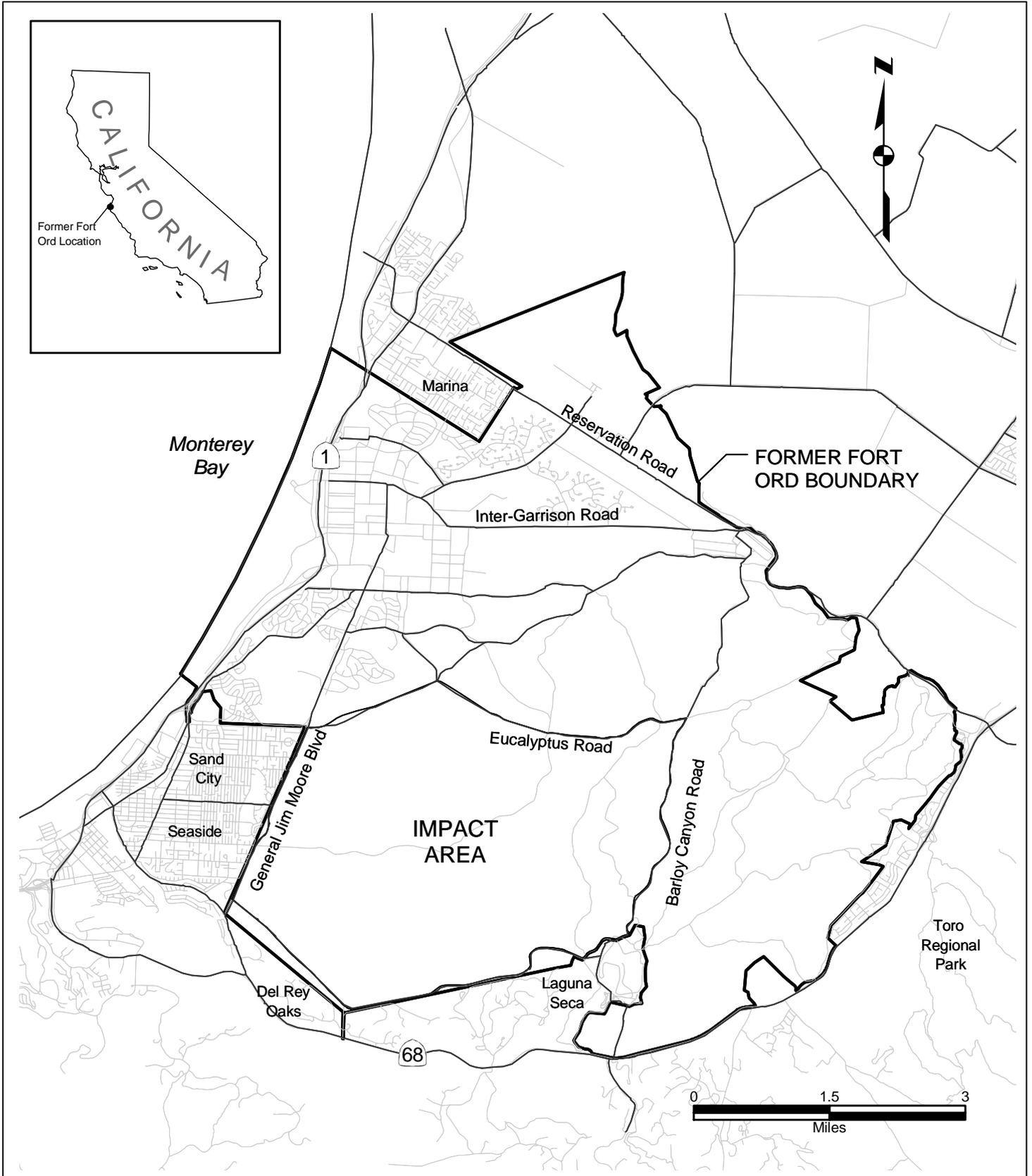
(3) Site Walks were conducted following the submittal of the Draft Final Track 1 OE RI/FS to address regulatory agency requests for additional site information. Site walk methodologies ranged from conducting visual surveys to sweeping the path walked with a magnetometer and excavation of detected anomalies depending on the site information needed.

FIGURE

Figure 1. Track 1 ROD and Plug-In Process



## PLATES



Track1-Rod-army-Plate 1 .mxd - 3/8/05

PLATE

**UNITED STATES  
DEPARTMENT OF  
THE ARMY**

**Site Location Map**

Track 1 Record of Decision  
Former Fort Ord  
Monterey County, California

**1**

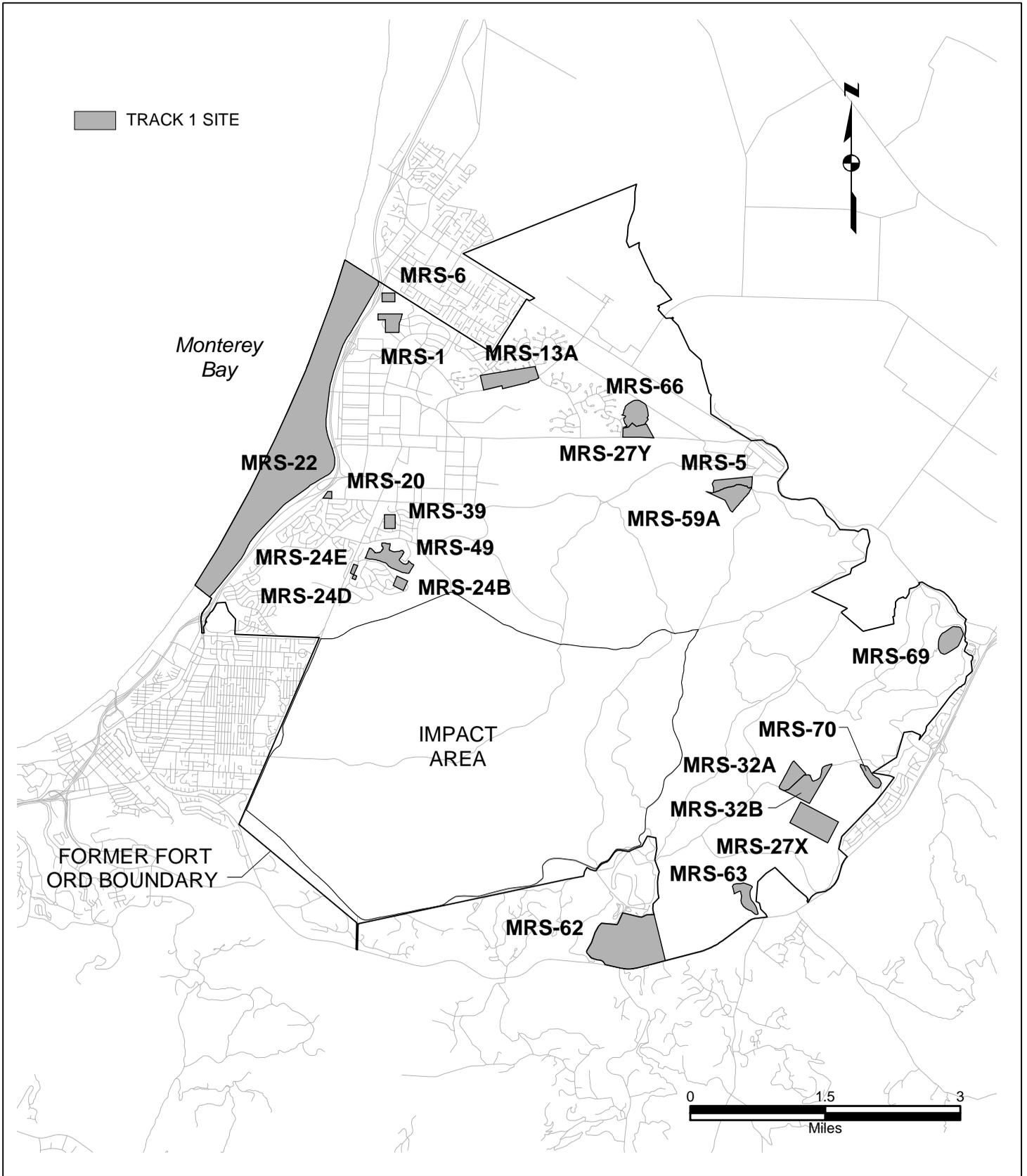
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Track1-Rod-army-Plate 2.mxd -3/10/05

PLATE

**UNITED STATES  
DEPARTMENT OF  
THE ARMY**

**Track 1 Munitions Response Sites**

Track 1 Record of Decision  
Former Fort Ord  
Monterey County, California

**2**

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.

**Approval Memorandum** – For the purposes of No Further Action, a document submitted for regulatory agency review with supporting documentation of eligibility that will serve as a record that no further action is necessary at a site upon approval.

**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 RI, FS, Proposed Plan, and ROD.

**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)).

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

**Ecological Risks** – The potential effects of site-related chemicals on plants and animals present in areas of contamination.

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

**Impact Area** [formerly Multi-Range Area (MRA)] – An 8000-acre portion of the base where multiple ranges were used for high impact military munitions training. The location of the Impact Area is shown on Plate 2.

**Military Munitions** [formerly OE] – Military munitions means all ammunition products and components produced for or used by the armed forces for national defense and security, including ammunition products or components under the control of the Department of Defense, 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, except that the term does include 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. 2710(e)(3)(A) and (B))

**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., 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] – This term, which distinguishes specific categories of military munitions that may pose unique explosives safety risks, means:

- (A) Unexploded Ordnance (UXO), as defined in 10 U.S.C. 2710 (e) (9);
- (B) Discarded military munitions (DMM), as defined in 10 U.S.C. 2710 (e) (2); or
- (C) Explosive munitions constituents (e.g., TNT, RDX) present in high enough concentrations to pose an explosive hazard.

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

**Munitions Response Area (MRA)** - Any area on a defense site that is known or suspected to contain MEC. Examples include former ranges and munitions burial areas. 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.

**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.

**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.

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

**Range-Related Debris** [formerly Non-OE Scrap] – Debris, other than munitions debris, collected from operational ranges or from former ranges (e.g., targets). Range-related debris is considered inert after inspection by technically-qualified personnel.

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

**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 material; and
- (C) remain unexploded either by malfunction, design, or any other cause. (U.S.C. 2710 (e)(9)).

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