
Unexploded Ordnance Identification, Training, and Reporting Plan Condition of Certification WASTE-4

for the

Rice Solar Energy Project (09-AFC-10C)

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SOLARRESERVE

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Acronyms and Abbreviations

ASR	archaeological survey report
CEC	California Energy Commission
COC	Condition of Certification
CPM	Compliance Project Manager
DDESB	Department of Defense Explosives Safety Board
DoD	Department of Defense
DTC/CAMA	Army's Desert Training Center/California-Arizona Maneuver Area
EM	engineering manual
EOD	explosive ordnance disposal
EPC	Engineering, Procurement, and Construction
FUDS	Formerly Used Defense Sites
GPS	geographic positioning system
HEITRP	High Explosive Identification, Training, and Reporting Plan
kV	kilovolt(s)
MEC	munitions and explosives of concern
mm	millimeter(s)
MRS	munitions response site
MW	megawatt(s)
Plan	Unexploded Ordnance Identification, Training, and Reporting Plan
RDX	Research Department Explosive
RI/FS	Remedial Investigation/Feasibility Study
Rice AAF	Rice Army Airfield
RSEP	Rice Solar Energy Project
SI	Site Investigation
SR	State Route
TBD	to be determined
TNT	trinitrotoluene
TP	Technical Paper
USACE	U.S. Army Corps of Engineers
UXO	unexploded ordnance
Western	Western Area Power Administration

Introduction

1.1 Overview

This Unexploded Ordnance Identification, Training, and Reporting Plan (UXO ITRP or Plan) is being submitted by SolarReserve, LLC for the Rice Solar Energy Project (RSEP) in response to the California Energy Commission's (CEC's) Condition of Certification (COC) WASTE-4.

The project site occupies private land that was historically used during World War II as the Rice Army Airfield (Rice AAF), a part of the Army's Desert Training Center/California-Arizona Maneuver Area (DTC/CAMA). The Rice AAF and adjacent Camp Rice were part of a three-state ad hoc training environment established to acclimatize troops to desert warfare between 1942 and 1944 and involved infantry, artillery, and air support forces. After World War II, the airfield was disposed by the military, transferred to the county, and later sold into private ownership. Rice Airfield was operated privately until it was abandoned between 1954 and 1958. Following its municipal use, the land has been in private holding.

Because of the site's former use for military training, there is potential for munitions and explosives of concern (MEC) and unexploded ordnance (UXO) to be encountered. The term "MEC" distinguishes specific categories of military munitions that may pose unique explosives safety risks and means the following: (A) UXO, as defined in 10 U.S.C. 101(e)(5); (B) Discarded military munitions, as defined in 10 U.S.C. 2710(e)(2); or (C) Munitions constituents (e.g., TNT and RDX), as defined in 10 U.S.C. 2710(e)(3), present in high enough concentrations to pose an explosive hazard. While it is understood that by definition MEC also includes UXO, in this plan the term UXO will be used as it is a more common term known to the general public.

As required by COC WASTE-4, this Plan identifies the types of munitions that have the potential to be found at the site, describes the recognition training program for construction workers, discusses the process for removing any discovered munitions or UXO, includes a list of available trained experts who will respond to notification of a discovery, and presents the reporting plan that will need to be implemented if UXO is discovered. The full text of WASTE-4 is provided below:

WASTE-4 The project owner shall prepare Unexploded Ordnance (UXO) Identification, Training and Reporting Plan to properly train all site workers in the recognition, avoidance and reporting of military waste debris and ordnance. The project owner shall submit the plan to the CPM and AO for review and approval prior to the start of construction. The plan shall contain, at a minimum, the following:

- A description of the training program outline and materials, and the qualifications of the trainers;

- Identification of available trained experts that will respond to notification of discovery of any ordnance (unexploded or not);
- A work plan to recover and remove discovered ordnance, and complete additional field screening, possibly including geophysical surveys to investigate adjacent areas for surface, near surface or buried ordnance in all proposed land disturbance areas; and
- The project owner shall provide documentation of the plan and provide survey results to the CPM.

Verification: The project owner shall submit the UXO Identification, Training and Reporting Plan to the CPM for approval no less than 60 days prior to the initiation of construction activities at the site. The results of geophysical surveys shall be submitted to the CPM within 30 days of completion of the surveys.

The U.S. Army Corps of Engineers (USACE) has developed performance standards and safe work practices for Military Munitions Response Program processes. This Plan has been prepared in accordance with USACE Data Item Descriptions and guidance documents that are applicable to the work. The Plan details the process for conducting MEC/UXO detection and removal within the proposed construction footprint, providing construction support, and presenting MEC/UXO recognition training for the RSEP workforce. USACE guidance documents, engineering manuals (EMs), and engineering pamphlets are referenced throughout this document.

1.2 Project Description

1.2.1 Project Background

Rice Solar Energy, LLC (RSE), a wholly owned subsidiary of SolarReserve, LLC, proposes to construct, own, and operate the RSEP. The RSEP will be capable of producing a nominal net generating capacity of 150 megawatts (MW).

The RSEP site is a privately owned parcel in eastern Riverside County (Figure 1-1). The site is adjacent to State Route (SR) 62, which parallels a portion of the Arizona-California Railroad and the Colorado River Aqueduct, near the junction of SR 62 and Blythe-Midland Road and near the sparse remains of the abandoned town of Rice, California. The nearest occupied residence is approximately 15 miles northeast at the rural crossroads community of Vidal Junction, California. The nearest town is Parker, Arizona (population 3,181), which is approximately 32 miles east. A small permanent residential settlement is located at the Metropolitan Water District of Southern California's Iron Mountain Pumping Plant, approximately 17 miles west.

The RSEP is within a larger 3,324-acre privately owned holding (the ownership property). Within this larger property, the RSEP is sited within a new square-shaped parcel (the project parcel) that has been created by merging four different assessor's parcels, resulting in a single 2,560-acre parcel. Within this project parcel will be the administration buildings area, heliostat field with power block, and evaporation pond areas, totaling 1,410 acres, that will be surrounded by a security fence (collectively, the project site or facility site). Areas outside

the facility site but within the project parcel will not be fenced, developed, or disturbed as part of the RSEP.

A new 230-kilovolt (kV) generator tie-line (gen-tie line) will interconnect to Western Area Power Administration's (Western's) 161-kV/230-kV Parker-Blythe #2 transmission line. The gen-tie line would extend for 10.0 miles from the RSEP fence line southeast to a new interconnection substation by way of an overhead transmission line on 75- to 115-foot-high tubular steel poles (CEC, 2010) (Figure 1-2).

1.2.2 Project Construction and Schedule

Construction of the generating facility from site preparation and grading to commercial operation is expected to occur from the third quarter of 2011 to the second quarter of 2014 (30 months total); the project construction schedule is provided in Table 1.

A peak workforce of approximately 438 construction craft, supervisory, support, and construction management personnel will be on-site during construction. The peak construction site workforce level is expected to occur between months 8 and 20.

Construction activities will generally occur between 5 a.m. and 7 p.m. on weekdays and Saturdays. Construction at times may occur on a 24-hour, 7-days-per-week basis to compensate for schedule deficiencies, to work around extreme midday heat during summer months and other extreme weather events, or to complete critical construction activities (e.g., pouring concrete at night during hot weather or working around time-critical shutdowns and constraints). During the commissioning phase of the project, some limited work activities may continue around the clock.

TABLE 1
Project Construction Schedule

Event Description	Expected Dates
Anticipated construction start date	September 1, 2011
Start construction of the project boundaries, clearing and grubbing, and sediment/wildlife fence installation.	September/October 2011
Start construction of laydown, parking, and construction offices	Third Quarter 2011
Start power plant construction	October 2011
Start gen-tie line construction	Fall 2012
Facility startup and commissioning activities	Fourth Quarter 2013
Commercial operation	March 2014

1.3 History of Military Activities in Vicinity of Project Area

Rice AAF began as a municipal airport for Rice, a small town in the Mojave Desert in southeast California. The original date of construction is unknown, but a review of the 1932 Los Angeles Airways Chart determined that Rice Airfield was not constructed until after 1932 (Freeman, 2008). Although no exact date of activation for Rice AAF is known, Rice Municipal

Airport was acquired by the IV Air Support Command on September 29, 1942, and was reportedly operational by October 26, 1942 (U.S. Air Force Historical Division, n.d.).

Rice AAF, like the Army airfield at Desert Center, was a sub-base of Thermal AAF. The facility was in the heart of DTC/CAMA operations, close to the Iron Mountain, Coxcomb, and Granite Army camps. Exact numbers of personnel stationed at Rice AAF are not known. By late 1943, however, there were approximately 4,000 personnel from the Army Air Forces in the DTC/CAMA, many of which were likely stationed at Rice AAF. Rice AAF was built using largely standard-plan, theater-of-operations-type buildings. These were similar to buildings found at other airfields of the time, including Desert Center. Barracks and recreation and mess halls, along with various other support facilities, were constructed that were reportedly designed to house 3,000 men. The base also contained an electrical generating facility, a water system, communications systems (including control tower), base weather office, post exchange, and base headquarters. The airfield was located adjacent to the small railroad town of Rice, which consisted of a small cafe and store (Eberling, 1997; U.S. Air Force Historical Division n.d.).

On April 30, 1944, after approximately 2 years of operation, the U.S. Army closed CAMA and abandoned the fourteen camps and airfields. By the following month, Rice AAF was assigned to March Field as a sub-base, and the 2nd Airdrome Detachment was disbanded. The airfield was closed on August 2, 1944, and was declared surplus in October. It was maintained for a while after this by a detachment of Squadron H from Thermal AAF (US Air Force Historical Division, n.d.). It operated as a civilian airport beginning in 1949. A 1954 U.S. Geological Survey topographic map depicted Rice AAF as having two paved runways, taxiways, and a ramp. Between 1952 and 1955, Rice AAF became a private airfield; however, by 1958, it was abandoned (Freeman, 2008). Aerial photography and site visits by private citizens documented the airfield's condition between 1996 and 2009. The runways, ramp, and pads were discernable from the surrounding desert landscape. No structures or buildings were on the site.

1.3.1.1 Camp Rice

This short-lived divisional camp was constructed adjacent to Rice AAF in early 1942. The camp was occupied by the 5th Armored Division between August and October of that year, followed by the 6th Armored Division. Firing ranges were constructed soon after the division's arrival, and soldiers were trained in anti-aircraft firing and anti-tank weapons. Camp Rice was closed in 1944 simultaneously with Rice AAF.

1.3.1.2 Training Areas/Ranges

Both air and ground units used the surrounding desert to train. Several areas have been identified as maneuver or training areas, with substantial ordnance found. The Big Maria Mountains, south of Rice, were used extensively for live-fire activities (USACE, 1998). These activities likely related to the training activities of the two divisions at Camp Rice. An aerial gunnery range was established in the mountains immediately north of Rice AAF, as depicted on a map of the CAMA from 1943. Approximately 5,000 acres of the Rice Valley Sand Dunes were set aside as bombing and strafing ranges for the Rice AAF. It also appears that troops from Camp Rice used the area for live-fire exercises. Several clearance efforts have been conducted in the area following the closure of the CAMA, with 105-millimeter

(mm) and 75mm projectiles recovered, along with one 37mm round (USACE, 1996). Section 1.4 provides further information regarding these clearance efforts.

1.4 Previous Investigations of the RSEP Site and Transmission Line Corridors

Although surveys have not been specifically conducted within the RSEP site, a Site Investigation (SI) was performed at the nearby Rice Valley Sand Dunes area, through which the RSEP gen-tie line will traverse. The SI was conducted in 2008 by Parsons (USACE, 2008) and included a discussion of previous investigations conducted at the site, as described in Table 2.

TABLE 2
Previous Investigations at Rice Valley Sand Dunes Area*

Year Conducted	Findings
January 1969	The 77th Ordnance Detachment from Fort Irwin, California, performed a clearance operation at the Rice Valley Sand Dunes in January 1969 prior to the construction of a power line through the southern end of Rice Valley. A 4-foot radius around each of the planned pole locations was cleared using a metal detector, and the team visually searched the area 50 feet to either side of the proposed path of the line. No buried munitions were found using the metal detectors, but a 105mm high explosive (HE) projectile, a 75mm projectile, two 37mm projectiles, and 250 rounds of 7.62mm blank ammunition were found during the visual search.
1996	The archaeological survey report (ASR) completed by the USACE St. Louis District compiled information obtained through historical research at various archives and records-holding facilities, interviews with individuals associated with the Formerly Used Defense Site (FUDS) or its operations, and a field visit. The field visit, conducted from January 8 through 19, 1995, found no evidence of munitions in the single munitions response site (MRS) at the FUDS. The investigation also found no evidence of the storage, use, or disposal of chemical warfare materiel. The ASR provides most of the historical information pertaining to site operations and identifies the key areas of focus for the SI.
2004	The ASR Supplement was completed in November 2004 by USACE St. Louis District as a supplement to the 1996 ASR. No field visit was performed for the ASR Supplement. This document identifies the single MRS at the former Rice Valley Sand Dunes and the types of munitions potentially used in this MRS. The potential munitions associated with the Rice Valley Training Area MRS include general small arms ammunition, M54 37mm HE projectiles, M48 75mm HE howitzer projectiles, M38 105mm fixed-gun projectiles, and M8 practice anti-personnel mines. These munitions, with the exception of the M8 practice mine, are based on the items found during the clearance operation in 1969. The reason for the inclusion of the practice mine is unknown other than the use of this mine at various locations in the CAMA.

*USACE, 2008

Based on these previous investigations and a site visit conducted during the 2008 SI efforts, Parsons recommended that the Rice Valley Sand Dunes area proceed to a Remedial Investigation/Feasibility Study (RI/FS) status because of the following (USACE, 2008):

- Historical documentation indicates that the area may have been used as part of CAMA.

- General small arm ammunition, M54 37mm HE projectiles, M48 75mm HE howitzer projectiles, M38 105mm fixed-gun projectiles, and M8 practice anti-personnel mines may have been used during training operations.
- During the SI field work, the site visit team found 60 rounds of small arms ammunition classified as MEC and many metal fragments derived from the explosive detonation of HE ordnance, most likely projectiles.
- In addition, at least one 105mm projectile that was suspected to be live was found during a clearance operation at the site in 1969.

1.5 Potential for Presence or Absence of Munitions Constituents

Because the RSEP project site is located within the CAMA, where WWII military training exercises were conducted, there is potential for UXO/MEC to occur. However, multiple site surveys have been conducted by biological, cultural, and paleontological staff over the past 18 months with no UXO/MEC located on the project site and only two potentially high explosive rounds found alongside the gen-tie line route;¹ thus, the possibility that these items are present at the project site is low. Additionally, the RAAF site was used as an airfield during training exercises, and in later years as a public airport. Therefore, it is unlikely that bombing exercises would have occurred during training exercises on the airfield site and associated facilities. However, the potential for UXO/MEC is greater along the gen-tie line, due to the proximity of the Rice Valley Sand Dunes training area, which is suspected to include a portion of the bombing ranges. Gen-tie line construction is anticipated to occur in 2013.

Appendix A identifies the types of UXO/MEC that may be present at the site.

1.6 Field Change Request to the Work Plan

This Plan was prepared after a review of prior investigations and an evaluation of the results of MEC discoveries that occurred during the aforementioned preconstruction surveys for the proposed RSEP. As noted earlier, no MEC/UXO were found on the project site during preconstruction surveys, and only two potentially high explosive rounds were identified on the gen-tie line route. The Plan is based on the information available at the time of its preparation and may require modification if unforeseen circumstances arise during the construction phase of the project.

The Engineering, Procurement, and Construct (EPC) contractor will be responsible for site development and installation of all aboveground and below ground improvements associated with RSEP. Should the Plan require modification, changes will be made using the following work process:

- The UXO Technical Manager will develop the changes;

¹ Exploded ordnance and fragments of munitions, as well as small arm casings were also located along the transmission line route.

- On-site implementation of changes may be initiated prior to inclusion of the formal written changes if verbal approval is agreed upon by the RSE Construction Manager;
- If the recommended modifications to this Plan are related to safety or quality, the affected task(s) will be suspended until written procedures are developed by the UXO Technical Manager and approved by the RSE Construction Manager's Health and Safety (H&S) Manager; and
- Project personnel will be briefed on the changes that have been approved.

Technical Management Plan

2.1 Objectives

This chapter describes the health and safety approach and procedures to be used if MEC/UXO is encountered during construction activities at the RSEP.

2.1.1 Applicability

This Plan is applicable to construction-related activities that will be performed at the RSEP and must be adhered to by all construction staff (including subcontractors and tiered subcontractors working on the site) as well as all visitors to the site (including visitors from the local agencies, CEC, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, California Department of Fish and Game, Western, and the public).

This Plan defines the procedures and requirements for the health and safety of construction staff and visitors when they are physically on the work site. The work site includes the project area and the project offices, trailers, and facilities thereon.

This Plan will be kept on-site during field activities and will be reviewed as necessary. It will be amended or revised as project activities or conditions change or when supplemental information becomes available.

This Plan will be executed in accordance with requirements of the Comprehensive Environmental Response, Compensation, and Liability Act; Section 104; the National Substances Pollution Contingency Plan; and Section 300.120(d) and 300.400(e) as described in the Code of Federal Regulations Part 29, Subpart 1910.120. All operations will be conducted in full compliance with Department of Defense (DoD) requirements regarding personnel, equipment, and procedures, including the following:

- EM 385-1-1, Safety and Health Requirements Manual;
- EM 385-1-97, Explosives Safety and Health Requirements;
- DoD STD 6055.09-M, DoD Explosives Safety Board (DDESB), and DoD Component Explosives Safety Responsibilities;
- DA PAM 385-64, Ammunition and Explosives Safety Standards; and
- AR 385-64, U.S. Army Explosives Safety Program.

2.2 Organization/Roles and Responsibilities

Table 3 lists the primary organizations involved with construction activities at the RSEP and their project roles and responsibilities. In addition to the key organizations listed in Table 3, local emergency management agencies will also have roles in the project. The project UXO Technical Manager will support field work activities by coordinating removal response

upon notification of discovery of any munitions at the construction site. All UXO personnel dealing with munitions will meet or exceed the UXO Personnel Training and Experience Hierarchy requirements presented in DDESB Technical Paper (TP) 18, *Minimum Qualifications for Unexploded Ordnance (UXO) Technicians and Personnel* (DDESB, 2004).

TABLE 3
Overall Project Organization

Organization	Responsibility	Contact	Phone Number
Project Owner	Project Owner, responsible for overall project	Jeff Benoit	310-315-2212
Project H&S Manager	Maintain Field Logs. First Point of Contact if UXO discovered onsite. Will contact UXO Technical Manager.	TBD	TBD
UXO Technical Manager	If UXO discovered on-site, upon notice from H&S Manager, will coordinate activities with UXO contractor, RSE Construction Manager, and Riverside County Sheriff.	George DeMetropolis	619-564-9627
UXO Contractor	UXO project management and technical support (if needed).	TBD	TBD
RSE Construction Manager	EPC Site Development Contractor responsible for final design and construction of the RSEP as well as site control and on-site H&S management.	Pat Krum	770-713-6306
Riverside County Sheriff	Responsible for retrieval and disposal of any UXO found onsite.	Colorado River Station	760-921-7900 Non-Emergency: 760-836-3215

TBD = to be determined

The UXO Technical Manager will be on call should UXO be discovered on-site. The UXO Technical Manager or his delegate will make the first assessment, cordon off the area, and coordinate with the UXO contractor (if needed), RSE Construction Manager, and Riverside County Sheriff.

The RSE Construction Manager will be responsible for notifying the Project Owner and the UXO Technical Manager of any munitions discoveries within the construction site and will follow appropriate protocols for suspension of work when or if such discoveries occur.

The UXO Technical Manager will coordinate closely with the EPC Site Manager as well as the EPC's assigned H&S Manager. The UXO Technical Manager will provide the personnel, expertise, and technical approaches to safely; effectively assess any MEC identified at the construction site; and decide whether field work can continue under the present conditions. The UXO Technical Manager will also provide ongoing technical support if ground-disturbing activities are required to ensure that expert capability is available to respond to unanticipated discoveries. Both of these functions will be carried out in a manner that is consistent with DoD guidelines, regulatory requirements, federal facility agreements, and stakeholder issues, while maintaining safe operations and protection of the environment.

The identified UXO Technical Manager will be qualified as a Senior UXO Supervisor per the requirements of DDESB TP 18 (DDESB, 2004).

The Riverside County Sheriff will be the primary agency to remove any MEC/UXO at the site. However, if significant amounts of MEC/UXO are found on-site and the Riverside County Sheriff deems it necessary, and if MEC/UXO removal and clearance activities are required, a MEC/UXO Contractor will be selected. If needed, the UXO Technical Manager will provide technical expertise if MEC/UXO is encountered and will serve as the overall Technical Manager for performance of MEC/UXO removal action at the RSEP, as set forth in this Plan. If full clearance is needed, then the MEC/UXO contractor will prepare their own specific work plan.

2.3 Organization/Roles and Responsibility for Health and Safety

The health and safety of employees, contractors, subcontractors, and the community is the first priority. The health and safety measures described herein are focused on field operations. If an activity or condition at a location is determined to not be consistent with health and safety policies and procedures, all efforts shall be made to correct the situation immediately or as soon as feasibly possible. At no time shall any construction staff perform duties in a work environment that is immediately dangerous to life and health or in an imminently dangerous situation. In these situations, the task will not proceed until the situation is corrected.

2.4 Schedule

A comprehensive project schedule for the construction activities is in the process of being developed. If MEC/UXO is encountered, thereby causing a delay in project progression, the schedule will be modified to reflect the delay. The timeframe for completing construction activities will be designed to support the RSE Construction Manager's schedule and construction progress.

2.5 Field Management Procedures

Project management activities will occur frequently throughout the project period. These activities will include monthly progress reports, periodic project meetings, periodic safety and quality audits, and other unspecified activities.

If MEC/UXO is identified on-site, the UXO Technical Manager will oversee MEC/UXO field operations in coordination with the EPC Site Manager. Daily operations for collecting field data will be managed from the field office.

If an MEC/UXO Contractor is needed, the UXO Technical Manager will oversee the MEC/UXO contractor including mobilization, site preparation, field work activities, report preparation, and demobilization of personnel and equipment. The MEC/UXO team will rely upon site control established by the RSE Construction Manager, and work will be performed in a manner that is consistent with broader site control established over the RSEP

work site. MEC/UXO clearance teams will stop operations if approached by unauthorized personnel. Work will resume once those individuals leave the controlled area.

The UXO Technical Manager will be the single point of contact responsible for any MEC/UXO effort and will coordinate team activities. This manager will serve as a liaison/planner/consultant with the client staff, advising the client regarding MEC safety, scheduling, and execution of the operations. The UXO Technical Manager will attend project planning meetings, as required, for the duration of the project and will oversee project activities necessary to maintain project control that include but will not be limited to the following:

- Development of a project schedule for the areas being cleared, if MEC is found;
- Coordination and scheduling of activities with the EPC to avoid conflicts with scheduled activities;
- Compliance with communication requirements while on-site, including monitoring designated safety communications at all times;
- Communication, as required, to ensure that contact is maintained with all contractor teams working at the site;
- Preparation and submittal of reports/minutes of meetings attended and storage of records of telephone conversations and written correspondence; and
- Preparation and submittal of Project Status Reports.

If clearance of a construction area is required because of an MEC finding, a representative from the MEC/UXO Contractor's Corporate Safety, Health, and Environment Department will support the site safety team. This Plan will be integrated into the EPC Contractor's overall H&S program for construction of the RSEP.

2.6 Recordkeeping

2.6.1 Project Records

During field work, the H&S manager will maintain records in the field. Following completion of field work, the H&S manager will maintain all files in a central location. Such records will include daily summary sheets and related field and daily logs.

The H&S manager will maintain a record of MEC encountered during operations. This record will include the unique identifying number, location of the item (if possible), and a digital photograph of the item. A cumulative total of munitions debris (MD)/range-related debris will be maintained.

The H&S manager will maintain a field logbook to record site activities and field data in a neat, legible manner. Logbooks will be bound, and pages will be consecutively numbered. The MEC/UXO Contractor personnel will make logbook entries in indelible ink.

The H&S manager will enter the following information during the course of the removal action/construction support field operations:

- Date and team location
- Personnel and work performed
- Equipment and instrument checks
- Injuries and/or illnesses
- Changes to work instructions
- Work stoppage
- Visitors
- Other relevant events
- Signature of the UXO Quality Control Supervisor

Logbooks and records may be supplemented by the use of preprinted forms (i.e., safety inspection forms, tailgate safety briefings, etc). These forms help to ensure uniformity of activities being conducted, inspected, and reviewed.

Relevant information from MEC/UXO work in progress for each month of construction activity will be summarized in the monthly compliance report to be submitted to the CEC's Compliance Project Manager (CPM).

Field Investigation Plan

3.1 Overall Approach

As previously stated, certain MEC-related prudence measures will be implemented to address the RSEP's desire to minimize injury and provide for a safe work environment. No field investigations are currently planned. This section describes and implements the following MEC mitigation measures:

- MEC health and safety awareness training (3R training) for construction workers and visitors
- Immediate response actions in the event suspect MEC is encountered, including an MEC reporting plan
- On-call construction support to be provided by the Riverside County Sheriff's Department (or alternately by a qualified UXO contractor as desired by the Project Owner)
- Provisions for stand-by construction support provided by a qualified UXO contractor (as desired by the Project Owner)
- Contingency actions to include or other MEC field activities as deemed appropriate by the Project Owner in coordination with its UXO Technical Supervisor

If contingency actions, such as airborne or ground-based geophysical investigation, MEC investigation, removal, or clearance, are deemed necessary at any time in the future, an addendum or addenda to this Plan will be prepared for review and approval by CEC. The addendum/addenda will include all sub-plans appropriate for the effort, such as an Accident Prevention Plan, Explosives Management Plan, and Quality Control Plan.

3.2 MEC/UXO Awareness Training

All personnel performing construction activities at the RSEP site who may come in contact with potential MEC will be familiar with the safety and health hazards associated with assigned tasks and with the safe work practices and control techniques to be used to reduce or eliminate hazards associated with MEC. Prior to commencing construction activities, all personnel working on-site will be provided ordnance recognition training as part of their overall environmental awareness training. Training will be conducted as presented in the Munitions Response Safety and Awareness Training, which is provided in Appendix B.

Training will be administered to workforce personnel assigned to the site. The training will be coordinated and provided in conjunction with the project-specific Worker Environmental Awareness Program training. The training outline is provided in Appendix C.

MEC awareness training will be routinely administered upon arrival to any new construction personnel, foremen, contractors, subcontractors, and other personnel potentially working in the project area prior to being permitted to work onsite. Upon completion of the awareness training, employees will sign an attendance form stating that they attended the program and that they understand the potential hazards, safety precautions, and protection measures in place. Attendance forms will be maintained onsite as a component of the project files and will be made available upon request.

The training materials and guide included in Appendix A promotes the 3Rs when working/operating in areas with past military use: **Recognize, Retreat and Report**.

Training will emphasize recognition of potential MEC hazards and avoidance. UXO and MEC come in many shapes and sizes and may resemble pieces of pipe, old soda cans, car mufflers, or even baseballs. All suspect MEC, whether complete or in pieces, should be considered dangerous and should NOT be touched, moved, or disturbed in any way.

3.2.1 Immediate Response Procedures to Suspect MEC

All MEC or suspect MEC encountered on job sites shall be treated as extremely dangerous. All personnel will be advised to follow the 3Rs – RECOGNIZE, RETREAT, REPORT – and take the following actions to ensure that employees have a safe working environment.

3.2.1.1 Recognize

Project personnel shall not touch, disturb, or move the item (munitions can become very unstable over time). These items can detonate with movement or sometimes as a result of ground vibration. Munitions come in all shapes, sizes, and colors, but exposure to weather and time can alter or remove these markings. When a suspect item is encountered, it is imperative that the item not be disturbed. Explosive ordnance that has been fired has completed its arming sequence and may be extremely sensitive to shock or movement.

3.2.1.2 Retreat

When located, personnel shall mark the general location of the MEC hazard with tape, colored cloth, or colored ribbon. If available, the marker will be attached to a branch, structure, or other existing object so that it is about 3 feet (0.9 meter) off the ground and visible from all approaches. The marker shall be placed no closer than the point where the MEC hazard was first recognized. Stakes shall not be driven into the ground so as to avoid any surface disturbance. When possible, a geographic positioning system (GPS) coordinate location will be collected. Workers will leave by the same route that the area was entered, if possible. The area will be cleared of workers and the area secured from unauthorized entry.

3.2.1.3 Report

Procedures for reporting suspect items will be summarized during the daily tailgate safety briefing provided to all personnel working on-site. An MEC report form is provided as Appendix C.

3.2.1.4 Obtain GPS Position

Trained UXO Technicians may not be immediately available and will have to be requested to respond to the location. If possible, without disturbing the item, use a GPS unit to record locations to assist technicians in reacquiring the item.

3.2.1.5 Photograph

A photograph of the suspect item is extremely helpful to the responding UXO personnel if they have prior knowledge of the type of item they will be working on. When possible, without moving or disturbing the item, photos will be taken of the item from various angles and forwarded to the RSE Construction Manager and UXO Technical Manager, who will make the photo available to the responding team.

3.2.1.6 Safety Precautions

3.2.1.6.1 Sensitivity to Heat, Shock, and Friction

Ordnance items are normally sensitive to excessive heat, shock, or friction. After being exposed to the elements for long periods of time, ordnance items may become more sensitive to these physical forces.

3.2.1.6.2 Communication Limits

Do not transmit on any radio frequencies within 10 feet of a suspected MEC. Signals transmitted from items such as cell phones, shortwave radios, single sideband radios, or other communications and navigation devices may detonate the MEC; therefore, transmitting of any radio frequencies will occur at least 10 feet from a suspected MEC.

3.2.1.6.3 Cell Phone Use

When in use, cell phones shall be no closer than 10 feet from the suspect item. During disposal operations where firing circuits are energized, the distance is increased to 30 feet.

3.2.1.6.4 Handheld Radios

Handheld radios shall be used no closer than 25 feet from ordnance items and energized circuits.

3.2.2 On-call Construction Support

On-call construction support will consist of notification to the UXO Technical Manager who will then contact the Riverside County Sheriff's Department regarding pending site work and confirmation with the Sheriff of emergency call numbers in the event MEC or suspect MEC is found.

In the event that suspect MEC is discovered, the UXO Technical Manager, in conjunction with the EHS Manager or Contractor's PM, will call the Riverside County Sheriff's Department, East-Blythe District to report the discovery, secure the area of the suspect MEC discovery, and coordinate the response. As appropriate, the Riverside County Sheriff's Department will engage its bomb squad to investigate and respond to MEC or may notify military EOD to request a response. When qualified UXO support personnel are present onsite (e.g., during anomaly avoidance), the designated UXO Technical Manager will act on behalf of the EHS Manager/Contractor's Construction Manager to implement the responsibilities identified above.

If deemed appropriate to facilitate project schedules, the Project Owner may opt to rely on UXO-qualified contracted support to provide on-call UXO-qualified personnel to assist in the initial identification if suspect MEC is encountered.

It is anticipated that a maximum of 24 hours response time may be required by either the Riverside County Sheriff's Department or contracted support. The Contractor will ensure that the area of the suspect MEC discovery is secured until response personnel arrive.

3.2.3 Stand-by Construction Support

At any time, the Project Owner may opt to implement "stand-by" in lieu of "on-call" construction support. When implementing "stand-by" construction support, UXO support personnel will be physically located onsite to preview the surface of the construction footprint and to monitor all excavation activities.

One member of the UXO support team will be positioned to the rear and upwind of the excavation equipment for continuous visual observation of activities.

If the construction contractor unearths or otherwise encounters suspect MEC, all excavation activities will cease. The UXO support team will assess the condition of the suspect MEC to determine if a disposal action is required. Once MEC has been encountered in an excavation, no further excavation will be allowed at that location until qualified personnel (for example, bomb squad) have removed the MEC. Excavation will not continue until a detailed assessment of the potential of encountering additional MEC is completed.

A stand-by UXO support team is not equipped or staffed to perform MEC disposition activities and the Riverside County Sheriff's Department will be called in the event MEC is discovered during the conduct of stand-by construction support.

3.2.4 Contingency

In the event that significant quantities of MEC are confirmed by qualified personnel (for example, bomb squad, EOD, UXO-qualified personnel) within the RSEP site, the Project Owner will engage an MEC Oversight/QC contractor to determine if additional immediate actions are indicated and to reassess the level of construction support and or other MEC activities required going forward.

If contingency field activities are indicated, an addendum or addenda to this Plan will be developed to detail the specific procedures to be implemented and will include additional and appropriate sub-plans, as applicable, such as a Quality Control Plan, Explosives Management Plan, and Accident Prevention Plan. The addendum/addenda will be provided to the BLM for review and approval. The addendum/addenda will be prepared in accordance with applicable requirements of Engineering Manual (EM) 1110-1-4009, *Military Munitions Response Actions*, and will, at a minimum, address calculation and implementation of EZs and team separation distances, detection equipment, investigation and response techniques, disposition techniques including explosives management, engineering controls, and quality control procedures.

3.3 Small Arms Ammunition Procedures

Review of historical reports and results of survey observations indicates that the most probable munitions-related items that may be found on the Project site are small arms ammunitions (unfired cartridges, fired projectiles, and expended casings). Small arms ammunitions and components are easily recognized, do not fire readily even when subjected to significant shock, and do not cause other adjacent cartridges to explode sympathetically, even if a single small arms round were caused to fire accidentally,

Discovery or recovery of small arms ammunition will be reported to the EHS Manager or Project Construction Manager as soon as possible, but does not warrant implementation of full MEC Response Procedures as described earlier. Any discovered small arms ammunitions should be left in place, untouched for further management by the Construction Manager.

SECTION 4

Preconstruction Surveys

The CEC Final Decision requires that the Project Owner conduct a systematic geophysical survey of the project area prior to initiating construction activities. This pre-construction requirement is set forth in COC CUL-9. The survey will be conducted with a mobile electromagnetic instrument or a detector (such as a Schonstedt) and a high-resolution GPS unit, which will measure both conductivity and magnetic susceptibility. Buried items found as a result of this survey will be excavated by a team of two EOD technicians to determine whether the items are UXO/MEC. If the items are determined to be UXO/MEC, the items will be photographed and mapped with a GPS identification location, and the information will be sent to the UXO Technical Manager, as set forth in Section 3 of this Plan. The UXO Technical Manager in conjunction with the EOD technicians will work with the Riverside County Sheriff to dispose of the material as needed. Items that are not UXO/MEC will be excavated as required by COC CUL-9.

SECTION 5

References

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Appendix A
Types of UXO Potentially Onsite

**TABLE 2.2
SUSPECTED OR KNOWN MUNITIONS
FORMER RICE VALLEY SAND DUNES, CALIFORNIA**

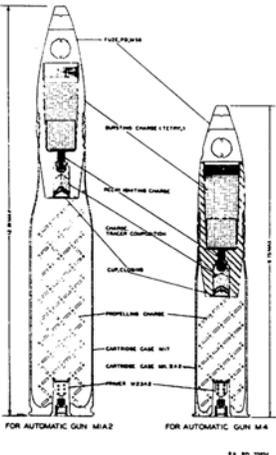
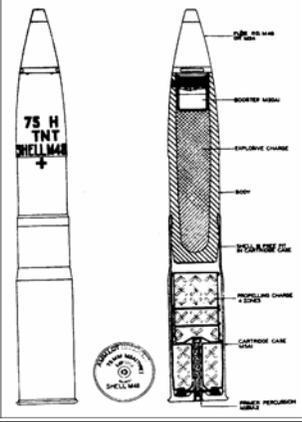
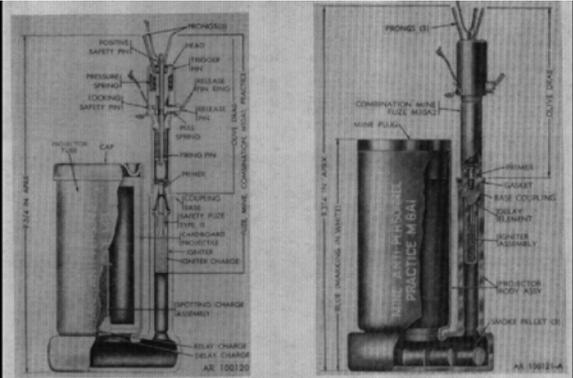
Munitions	Photograph/Diagram
<p>Small Arms, General (7.62mm shown)</p>	
<p>Cartridge, 37mm, HE, Fixed-Gun, M54</p>	
<p>Shell, 75mm Howitzer, HE, M48</p>	

TABLE 2.2 (Continued)
SUSPECTED OR KNOWN MUNITIONS
FORMER RICE VALLEY SAND DUNES, CALIFORNIA

Munitions	Photograph/Diagram
Shell, 105mm, HE, Fixed-Gun, M38	No diagram available
Mine, Antipersonnel, Practice, M8	

Appendix B
Munitions Response Safety and
Awareness Training

Munitions and Explosives of Concern (MEC) Awareness (3R) Training

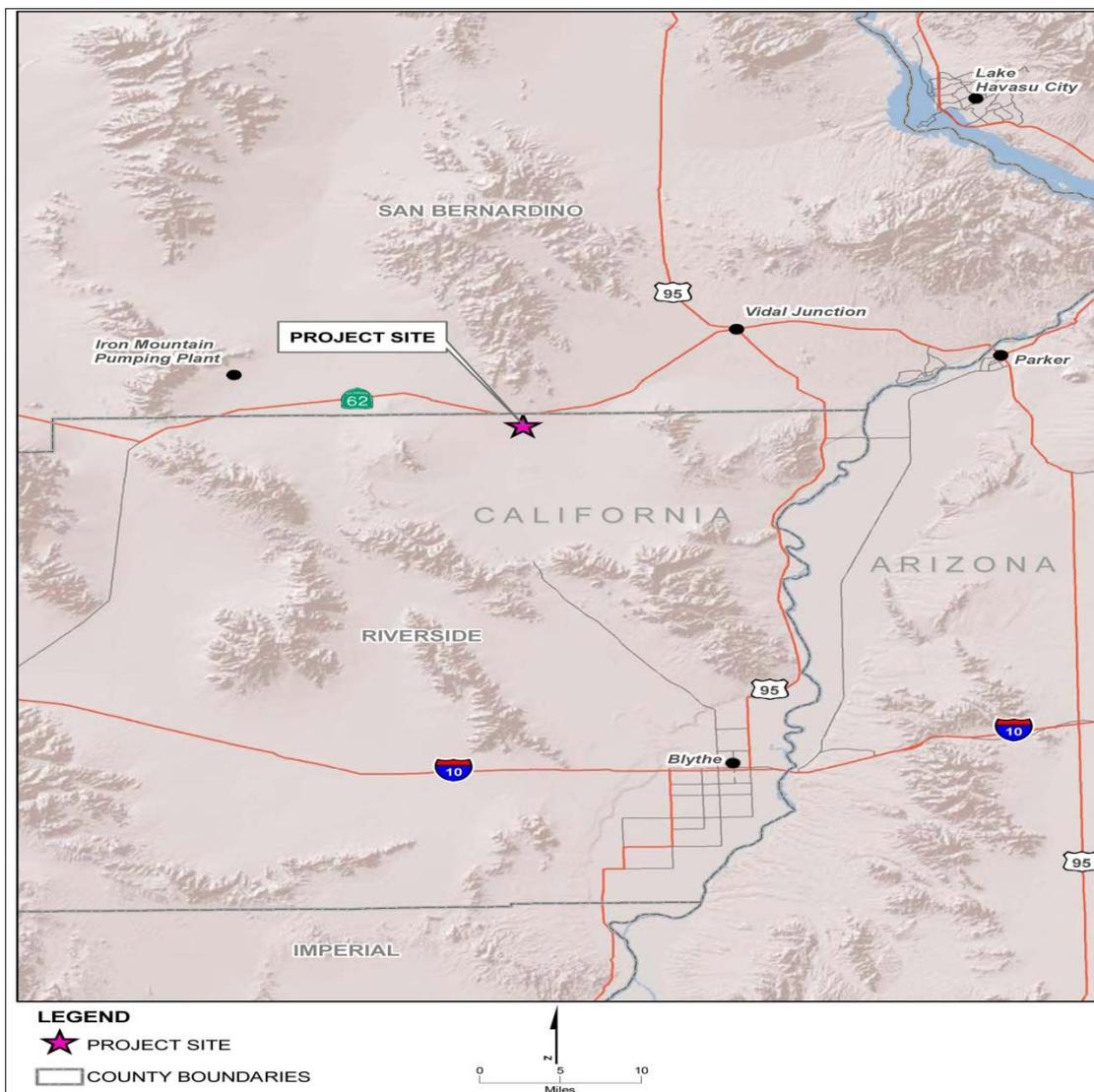
Safety Awareness Training

HSSE
Target Zero
World-Class Performance

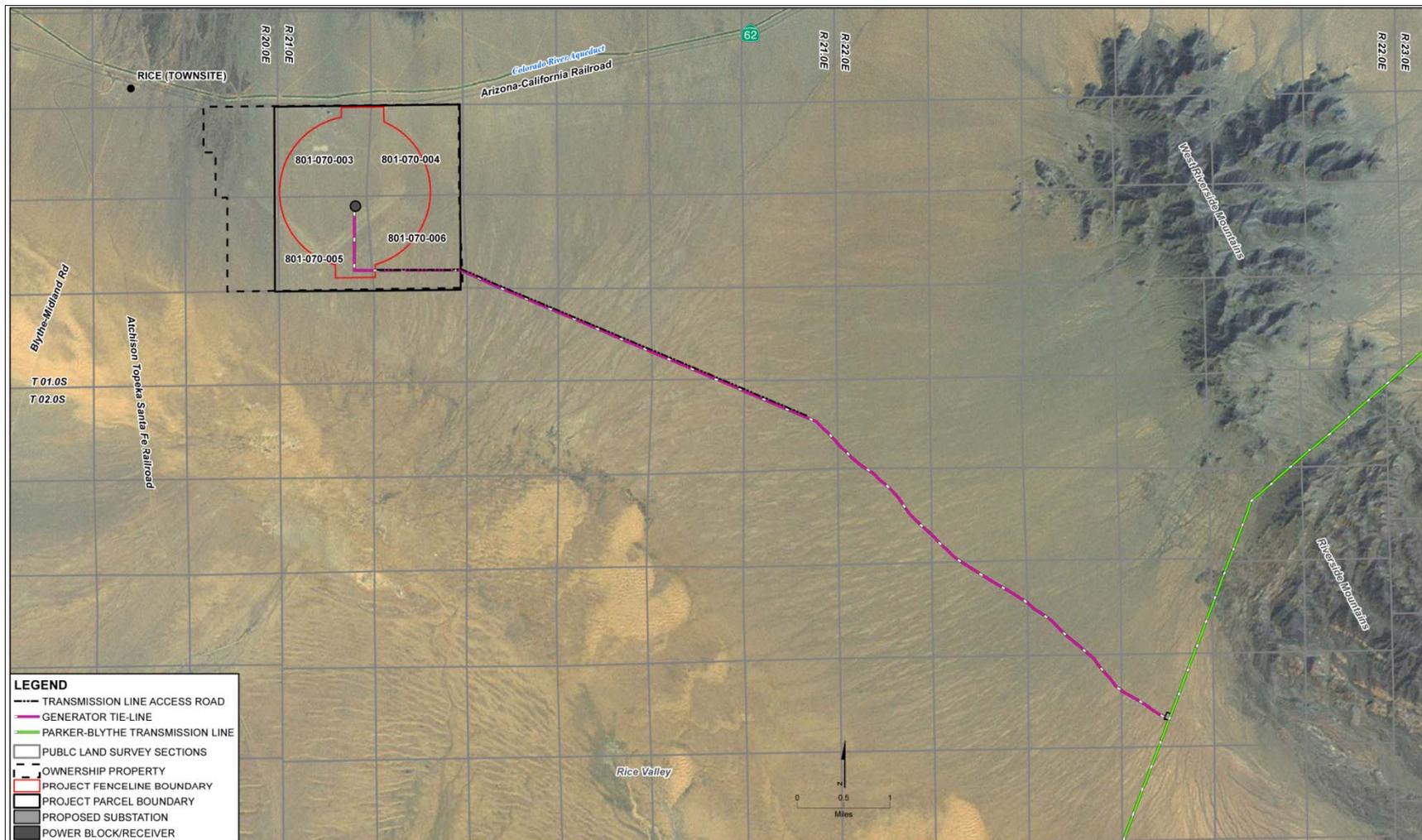
Training Objectives

- Provide overview of historic military activities in vicinity of Rice Solar Energy Project (RSEP) site
- Review munitions-related observations across the greater project area.
- Define munitions and explosives of concern (MEC) and provide examples.
- Teach the **3 Rs** when suspect MEC is encountered:
 - Recognize
 - Retreat
 - Report

Rice Solar Energy Project Vicinity Map



Rice Solar Energy Project Location



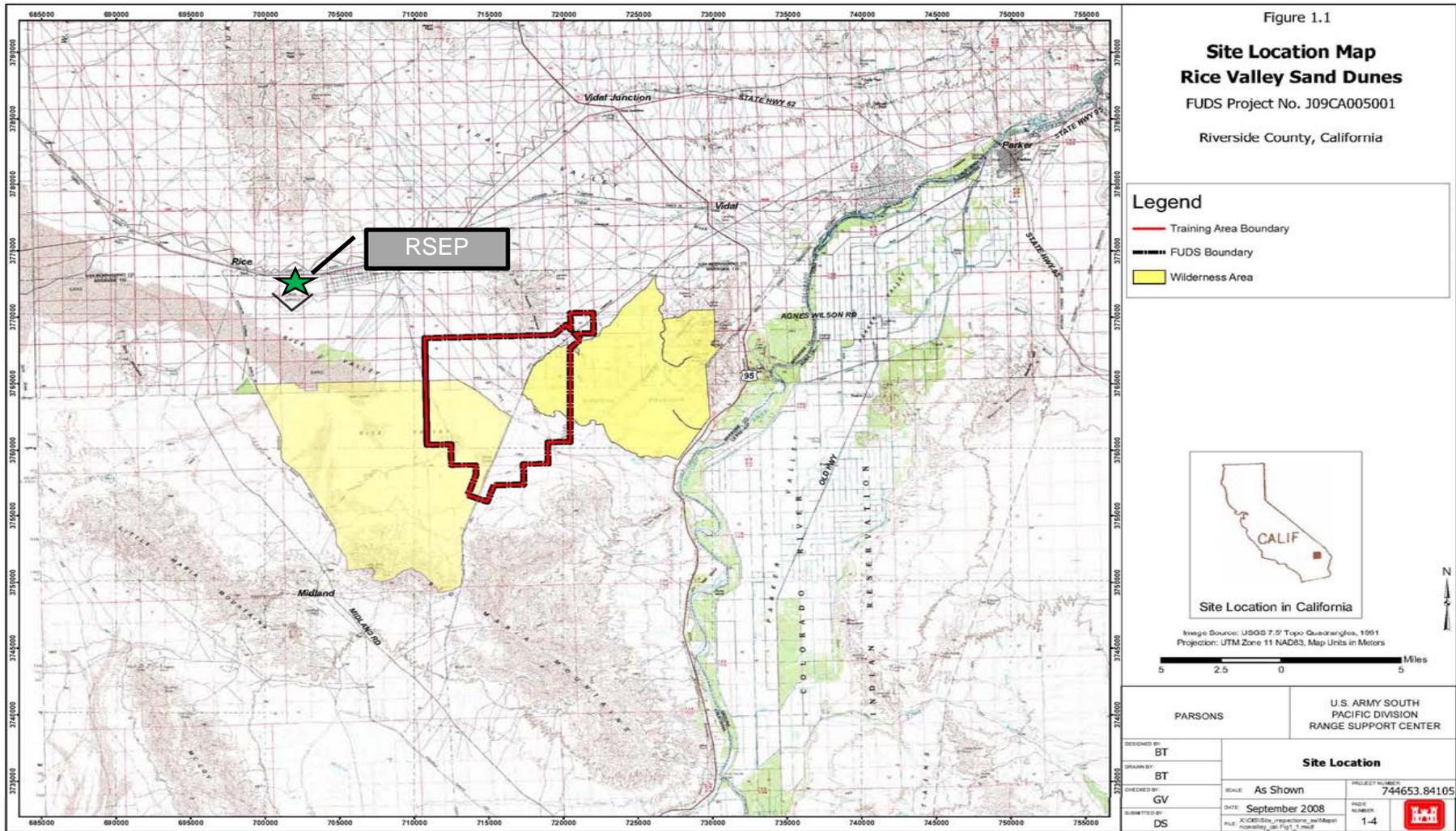
Site History

- The RSEP occupies approximately 2,560 acres that was used during World War II as Rice Army Airfield, a part of the Army's Desert Training Center/California-Arizona Maneuver (DTC/CAMA).
- Rice Army Airfield and the adjacent Camp Rice were used as a training environment to acclimatize troops to desert warfare between 1942 and 1944.
- Infantry, artillery and air support units were stationed here during that time, however no firing ranges were located on the RSEP property.
- In 1944, the airfield was declared surplus by the military, transferred to the county, and later sold into private ownership.

Site History (continued)

- Rice Army Airfield consisted of largely standard plan, theater of operations type buildings. Barracks, recreation and mess halls, as well as various other support facilities were present.
- Air and Ground units used the surrounding areas (Rice Valley Sand Dunes) for bombing and live-fire exercises.
- According to site records, no firing ranges or live-fire exercises were conducted on the RSEP project site.
- Investigations have been conducted in the Rice Valley Sand Dunes area (where the RSEP transmission line will be located), and some small arms ammunition and at least one 105 mm projectile have been discovered in those areas.

Rice Valley Sand Dunes Training Area



UXO Potential

- Because the RSEP is located within the DTC/CAMA where WWII military training exercises were conducted, there is potential for buried UXO.
- However, based on the multiple site surveys conducted by biological, cultural, and paleontological staff over the past 18 months with no UXO located, the possibility that these items are present at the site is remote.
- Small arms ammunition (for example, small arms casing, cartridge, or bullet) was found throughout the site, however appear to be of recent vintage (shotgun casings).
- Along the transmission line, more items were discovered; therefore, the potential for UXO is greater.

Munitions-Related Observations in the Project Area



Practice Bomb Tail Fin

Items Found on Other Solar Projects in the Area



ID 3

- ID 3: .30 Caliber small arms ammo casing
- ID 7: Empty blasting cap container
- ID 8: Ammo box lid
- ID 14: Small arms cartridge case



ID 7



ID 8



ID 14

Items Found on Other Solar Projects in the Area



Potential smoke or gas
grenade



Items Found on Other Solar Projects in the Area



Primer for 81-mm mortar projectile
(WWII Era)

Anti-personnel projectile, size and
nomenclature unknown, possible
intact burster tube



Items Found on Other Solar Projects in the Area



Unfired projectile, potential kickout from detonation and fragments

M-51 series point detonating fuze, likely expended



Items Found on Other Solar Projects in the Area



End cap from fiber container used
for shipping projectiles

Munitions and Explosives of Concern

MEC distinguishes specific categories of military munitions that may pose unique explosives safety risks to include the following:

- Unexploded ordnance (UXO)
- Discarded military munitions (DMM)
- Munitions constituents (MC) present in concentrations that are high enough to pose an explosive hazard



Munitions and Explosives of Concern (continued)

Unexploded Ordnance (UXO)

The most dangerous category of MEC because it has been readied for use, used, and malfunctioned (it has not yet functioned as planned). The fuze has thus been activated and the explosive condition is unknown. Munitions that have survived an attempt to destroy them by open burning/open detonation (OB/OD) are also considered to be UXO, as the condition of the fuze is unknown.

UXO is commonly associated with target and impact areas used for training with explosive ordnance and areas used for OB/OD.

Because historic documentation indicates that no training with explosive ordnance occurred in the vicinity of the project area, the potential for UXO is low.

Munitions and Explosives of Concern (continued)

Discarded Military Munitions (DMM)

Complete munitions that have not been readied for use and have not been used. DMM are munitions that are lost, buried, or otherwise abandoned. Untrained personnel must treat all potential MEC as UXO because the difference is not always readily visible.

DMM is commonly associated with areas where munitions may have been stored/issued/returned, firing points where unused munitions may have been abandoned or buried, vicinity of aircraft arm/de-arm areas, maneuver areas where troop convoys have traversed.

The potential for DMM cannot be disregarded at any location with past military use. DMM is unlikely to occur in high concentrations (with the exception of a potential burial site). DMM is more likely to occur as isolated incidents. DMM is also most likely found on the surface or near surface rather than subsurface.

Munitions and Explosives of Concern (continued)

Munitions Constituents (MC)

MC present in low concentrations (for example, in soils) does not pose an explosive hazard and is not MEC. Soils containing more than 10 percent explosives by weight may present an explosive hazard and are considered to be MC.

MC in concentrations high enough to pose an explosive hazard may be found at former explosives manufacturing facilities. Such high concentrations are not common to former military training ranges.

Historic use of the properties in and around the project site are not indicative of the potential for high concentrations of MC.

The MEC Hazard

- Although the probability of encountering MEC at the project site is deemed to be low on the basis of previous field surveys, MEC can be encountered anywhere military forces are or have been.
- MEC is a hazard just like any other hazard that may be encountered on a project site. Proper training and understanding the hazards will help minimize the risks to employees who may encounter MEC hazards.
- The key to reducing the risk to employees is the ability to recognize potential hazards and take the proper immediate action.
- Know the 3 Rs – Recognize, Retreat, Report

Recognize MEC

- Being able to recognize MEC is the first and most important step in reacting to an MEC hazard.
- As seen from the previous photographs, MEC can be found in all shapes and sizes.

Recognize MEC

The following categories of World War II munitions are most commonly encountered:

- Small arms ammunition
- Hand grenades
- Rifle grenades
- Artillery projectiles
- Mortar projectiles
- Air-to-ground rockets
- Ground-to-ground rockets
- Bombs
- Land mines
- Signals/illumination (flares)

Small Arms Ammunition



Small Arms Ammunition (continued)

- Small arms ammunition (defined as .50 caliber or less) is NOT an explosive hazard.
- Discovery or recovery of small arms ammunition does NOT warrant implementation of response procedures.
- Discovery or recovery of small arms ammunition will be reported to the RSEP Environmental Health & Safety Manager as soon as possible to ensure proper disposition.
- Photos will be taken and provided to the UXO Technical Manager for recordkeeping.

Hand Grenades – World War II Era



MK II
fragmentation



MK I
practice



M 58 gas



M 15 WP



MK II WP



M 18 smoke color



M 14 Thermite



MK I
illumination



M 25 gas

Rifle Grenades – World War II Era



M 11
practice



M 11
practice



M 9 HEAT



M 9 HEAT



M 13 HEAT



M 22 smoke



M 19 smoke WP

Artillery Projectiles – World War II Era



155-mm projectiles



155-mm M60
WP



155-mm illumination
canister

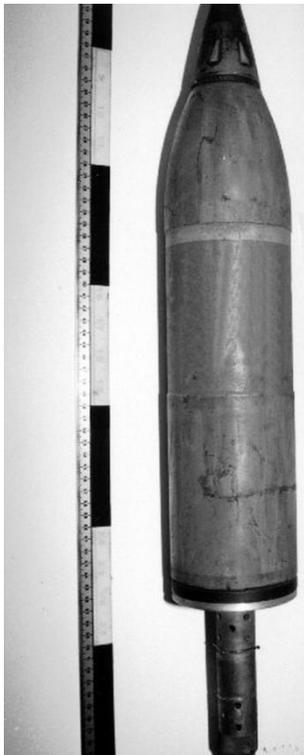
Artillery Projectiles – World War II Era (continued)



105-mm M1 HE



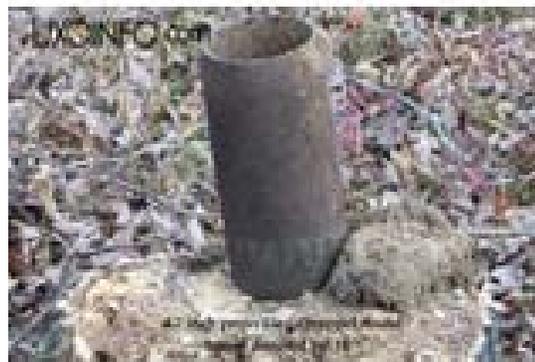
105-mm M60



4.2-inch XM453
HE



4.2-inch WP



4.7-inch projectile shrapnel



105mm M314
Illumination

Mortar Projectiles – World War II Era



3-inch Stokes Mortar projectiles



3-inch Stokes Mortar projectile



4-inch Stokes Mortar projectile FS



60-mm mortar projectile M49 HE



60-mm mortar projectile practice

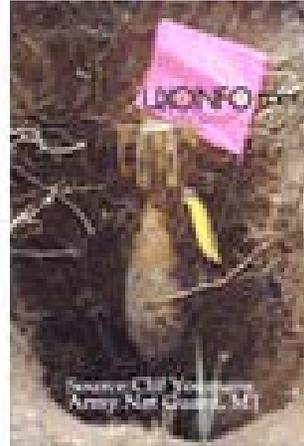


60-mm mortar projectile buried

Mortar Projectiles – World War II Era (continued)



60-mm mortar projectile illumination



81-mm mortar projectiles M 43 HE



81-mm mortar projectile HE



81-mm mortar projectile M49 HE



155-mm projectile WP



20-mm projectile HEI

Rockets – World War II Era



2.36-inch rocket M6 HEAT



2.36-inch rocket M6 HEAT Buried



2.75-inch rocket family



2.75-inch rocket parts



2.25-inch ACFT rocket SCAR

Bombs – World War II Era



100-lb. practice bombs



500-lb. GP bomb HE

As shown in these pictures, even aircraft bombs have different shapes and sizes, but maintain the same basic characteristics.



500-lb. GP bomb HE buried

Bombs – World War II Era (continued)



MK 106 practice bombs



MK-76 practice bomb



MK-76 practice bomb less fins

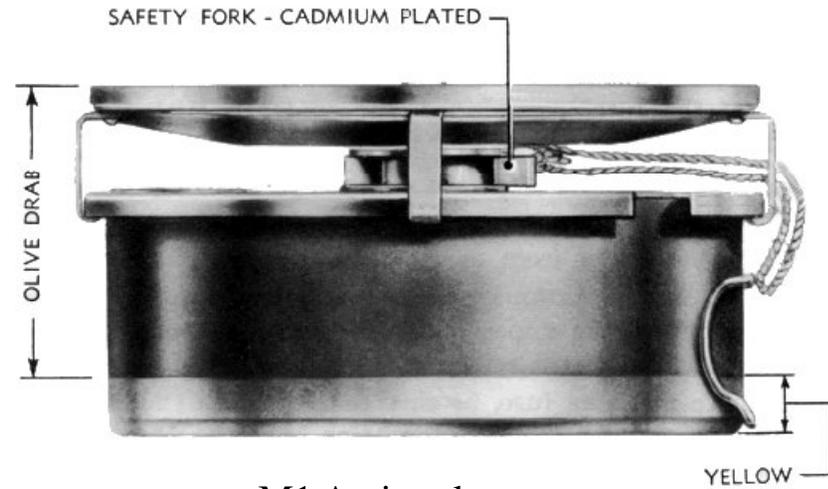


M 117 GP HE bomb 750 lb.



M 118 GP HE bomb 300 lb.

Land Mines – World War II Era



M1 Anti-tank



M2 Anti-personnel

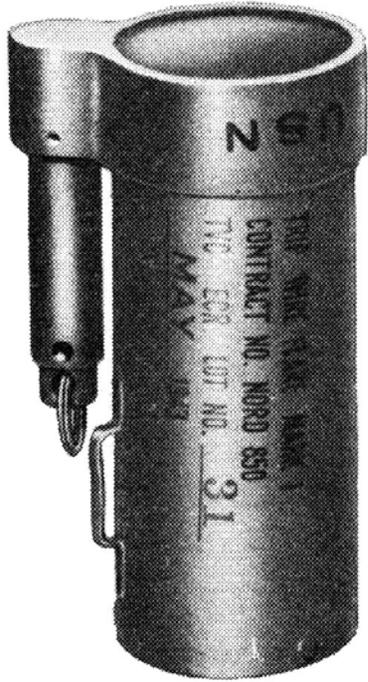


M2 Anti-personnel ejected



Recovered mines

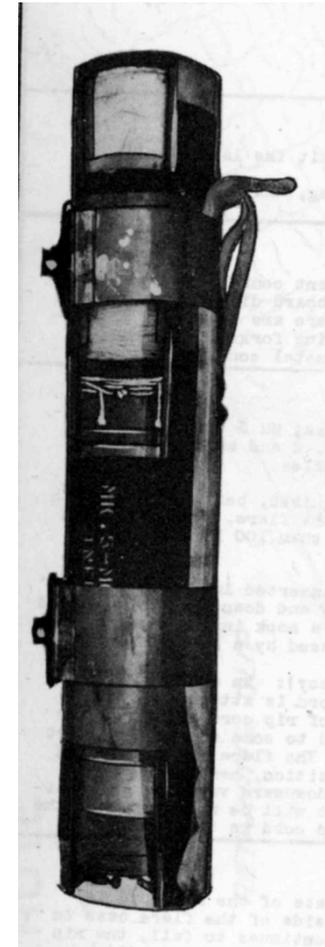
Flares – World War II Era



Flare MK 1 Illumination



Flare M 48 Illumination



Flare ACFT MK 4 Illumination

General Safety

- If you didn't drop it, don't pick it up.
- If you are unsure what it is, retreat and report.
- Don't take souvenirs!



General Safety (continued)

- When an MEC hazard is encountered or suspected:
 - Distance and shielding are the most effective protections from MEC hazards.
 - Evacuate all personnel from an MEC hazard area. Do not worry about evacuation of equipment (**retreat**).
 - If the MEC has not been disturbed, the chance of it functioning on its own is very remote.
 - If an MEC item is discovered in a piece of equipment (for example, a backhoe, earthmoving equipment, or drilling equipment), leave it in the position found and evacuate all personnel.
 - Immediately **report** the MEC through your direct Supervisor to the Health and Safety Manager, or, if present, the assigned UXO Technical Manager.



General Safety (continued)

DO NOT approach any suspected MEC item!



- Approaching a suspected MEC item can disturb the ground around it, causing it to move or causing undue influences to be exerted upon it.
- If you suspect an MEC hazard, take note of its location and general shape, evacuate, and report it.

General Safety (continued)

DO NOT use radios or cell phones in the vicinity of any suspected MEC item

- Radios and cell phones emit an electrical signal referred to as electromagnetic radiation (EMR).
- Some MEC have fuzes or other components which are electrically initiated, and EMR from cell phones or radios may cause them to function.
- A good rule of thumb is no transmissions within 100 feet of a suspected MEC item.



General Safety (continued)

DO NOT disturb any suspected MEC items



- Attempting to move or relocate a MEC hazard can cause it to function.
- Suspected MEC items **MUST** be left in the place and position found until they are evaluated by trained and authorized personnel.

General Safety (continued)

DO NOT attempt to disassemble or remove any part of suspected MEC items

- MEC items may have what appear to be harmless attachments, such as parachutes, strings, fin assemblies, or other such items.
- These parachutes or fin assemblies may be all that is visible. DO NOT attempt to recover these items if you do not know what it is attached to.
- Attempting to remove or alter these attachments can put undue stresses on the MEC item and cause them to function.
- Suspected MEC items MUST be left in the place and position found until they are evaluated by trained and authorized personnel.



General Safety (continued)

Avoid exposure of personnel to any suspected MEC Hazard



- Notify all personnel on the project site if a suspected MEC hazard is identified.
- Brief all personnel coming onto the site or in the area of its location so they can take appropriate actions to avoid the area.
- Mark the **general area** with an easily recognized method to alert personnel of its location.

Review

- MEC Mitigation Plan with procedures for MEC avoidance and reporting, as necessary.
- MEC Awareness Training (**3R training**) for all employees on a project site where MEC may be encountered.
- MEC Hazards can only be evaluated and handled by qualified and authorized personnel.

Appendix C
MEC Report

CONTRACT NO.:

MEC REPORT

PROJECT:

Please circle the appropriate information:
INITIAL / FINAL REPORT

1. LOG PREPARED BY:

Name:	Date:
E-mail Address (if applicable):	Phone Number:

2. LOCATION OF THE SUSPECT MEC:

Address/Tower/GPS:

City:	State:	Zip Code:
County:	Nearest Road:	

Additional Comments:

3. SPECIFIC INFORMATION:

Date of Discovery:	Time of Discovery:
--------------------	--------------------

Description of Suspected MEC (size, shape, color, markings or features):

Description of Location (Circle one):
Soil Surface / Partially Buried / Subsurface / In Water/In Vegetation / In a Piece of Equipment Other
If other, please specify:

Additional Comments:

4. IMMEDIATE MEC RESPONSE ACTIONS TAKEN (circle and/or provide additional information as indicated):

Evacuated Area

Marked Item Location

Photographed Item (attach)

GPSed Item Location (provide)

Reported Item to Construction Manager

Notified Riverside County Sheriff's Department

Entity Responding:

Time and Date of Response:

Nature of Response (e.g., determined to be something other than MEC, emergency demolitions, etc.):

Injuries:

5. REGULATORY NOTIFICATION:

Date:	Time:
Individual (First, Last):	Agency:
Phone Number:	Purpose/Comments:
Date:	Time:
Individual (First, Last):	Agency:
Phone Number:	Purpose/Comments:

6. ADDITIONAL INFORMATION: