FINAL

DECISION DOCUMENT

MINE AND BOOBY TRAP TRAINING AREA
MUNITIONS RESPONSE SITE
CAMP MAXEY FORMERLY USED DEFENSE SITE (FUDS)
LAMAR COUNTY, TEXAS

FUDS Project No. K06TX030512

Prepared for:

U.S. Army Engineering and Support Center, Huntsville

Geographic District:

U.S. Army Corps of Engineers, Fort Worth District

September 2017

EXECUTIVE SUMMARY

This Decision Document is being presented by the United States Army Corps of Engineers (USACE) to describe the Department of Army (Army) selected remedy for the Mine and Booby Trap Training Area Munitions Response Site (MRS) at the Camp Maxey Formerly Used Defense Site (FUDS) in Lamar County, Texas. The remedies described in this Decision Document were selected in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S. Code § 9601 et seq., as amended by the Superfund Amendments and Reauthorization Act of 1986, and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan, 40 Code of Federal Regulations Part 300 as amended.

The Defense Environmental Restoration Program (DERP) was established by Congress in 1986 and directed the Secretary of Defense to "…carry out a program of environmental restoration at facilities under the jurisdiction of the Secretary." DERP provides for the cleanup of Department of Defense (DoD) sites. DoD established a Military Munitions Response Program (MMRP) element under DERP in 2001 to address certain locations known or suspected to contain unexploded ordnance (UXO), discarded military munitions (DMM) or munitions constituents (MC). USACE is the program manager for DERP FUDS. USACE is the lead agency for investigating, reporting, making remedial decisions, and taking remedial actions at the MRSs identified at Camp Maxey, while the Texas Commission on Environmental Quality (TCEQ) is the lead regulatory agency.

Based on the results of the Remedial Investigation (RI), the Camp Maxey FUDS property was delineated into 13 MRSs. The RI based these delineations on the potential presence of MEC, differences in land ownership, and current and reasonably anticipated future land use. The 13 MRSs at Camp Maxey are listed in Table ES-1 (below) and identified in Figure 2.

Table ES- 1

Munitions Response Site (MRS)	Acreage
Western Range Area A	1,310
Western Range Area B	2,166
Western Range Area C	1,104
Western Range Area D	1,870
Western Range Area E	203
Eastern Range Area A	1,124
Eastern Range Area B	540
Eastern Range Area C	563
Grenade Range Area	97
Cave Training Area	7
Mine and Booby Trap Training Area	35
Bivouac Area	1,125
Pat Mayse Lake	4,283

In addition to the 12 land-based MRS listed in Table ES-1, approximately 4,283 acres of the Pat Mayse Lake are within the Eastern Range Area and Western Range Area. The 4,283 acres of water within the Pat Mayse Lake were not investigated as part of the RI completed in 2014.

This Decision Document addresses the Mine and Booby Trap Training Area MRS only. The Mine and Booby Trap Training Area MRS consists of approximately 35 contiguous acres of land south of Pat Mayse Lake and east of the Western Range Area at the former Camp Maxey. This MRS comprises a former mine and booby trap training area and east of the Western Range Area. MEC contamination has not been confirmed at this MRS; however, based on historical evidence and munitions debris (MD) provided by a property owner, the site was characterized to likely contain MEC.

The RI completed for Camp Maxey in 2014 concluded that potential MEC hazards are present for the future residents at the privately owned properties that comprise the MRS. Therefore, the RI for Camp Maxey recommended a Feasibility Study (FS) be conducted to evaluate a range of possible remedial alternatives. The FS for Camp Maxey, and the related Proposed Plan for select Camp Maxey MRSs, were completed in 2014. Following the public review of the proposed plan USACE recommended a revised remedy for the Mine and Booby Trap Training Area MRS that incorporates a 100 percent surface and 12-inch subsurface clearance that would allow for unlimited use and unrestricted exposure (UU/UE) for the MRS. The total estimated cost for the recommended remedy at the Mine and Booby Trap Training Area MRS is $617,000. Following stakeholder and public review of these recommendations and the Proposed Plan for Camp Maxey, USACE has determined that the recommended remedy is appropriate for this MRS.

Based on information currently available, the selected remedy (a 100 percent surface clearance and 12-inch subsurface clearance) is protective of human health, safety, and the environment; and satisfies the statutory requirements of CERCLA §121(b) with regards to the former use of this MRS by the Army and DoD.

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ACRONYMS AND ABBREVIATIONS

AP	Armor Piercing
ARAR	Applicable or relevant and appropriate requirement
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COC	Chemical of Concern
CSM	Conceptual Site Model
DERP	Defense Environmental Restoration Program
DGM	Digital geophysical mapping
DoD	Department of Defense
ESD	Explanation of Significant Difference
FS	Feasibility Study
FUDS	Formerly Used Defense Site
GPS	Global Positioning System
HA	Hazard Assessment
LUC	Land Use Control
LTM	Long-Term Management
MC	Munitions Constituents
MD	Munitions Debris
MEC	Munitions and Explosives of Concern
MMRP	Military Munitions Response Program
MRS	Munitions Response Site
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPV	Net Present Value
RAO	Remedial Action Objective
RI	Remedial Investigation
ROE	Right-of-Entry
TCEQ	Texas Commission on Environmental Quality
TPP	Technical Project Planning
TPWD	Texas Parks and Wildlife Department
U.S.	United States
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
UXO	Unexploded Ordnance
WMA	Wildlife Management Area

PART 1 – DECLARATION

1 SITE NAME AND LOCATION

Mine and Booby Trap Training Area Munitions Response Site (MRS), Camp Maxey Formerly Used Defense Site (FUDS), Lamar County, Texas (Figure 1).

2 STATEMENT OF BASIS AND PURPOSE

This Decision Document is being presented by the United States Army Corps of Engineers (USACE) to describe the Department of Army selected remedies for the Mine and Booby Trap Training Area MRS at the Camp Maxey FUDS in Lamar County, Texas (Figure 2). The Defense Environmental Restoration Program (DERP) was established by Congress in 1986 and directed the Secretary of Defense to "…carry out a program of environmental restoration at facilities under the jurisdiction of the Secretary." DERP provides for the cleanup of Department of Defense (DoD) sites. A Military Munitions Response Program (MMRP) element was established under DERP in 2001 to address non-operational range lands known or suspected to contain munitions and explosives of concern (MEC) or munitions constituents (MC) contamination. The USACE is the program manager for the DERP FUDS. USACE is the lead agency for investigating, reporting, making remedial decisions, and taking remedial actions at the MRSs identified at Camp Maxey, while the Texas Commission on Environmental Quality (TCEQ) is the lead regulatory agency.

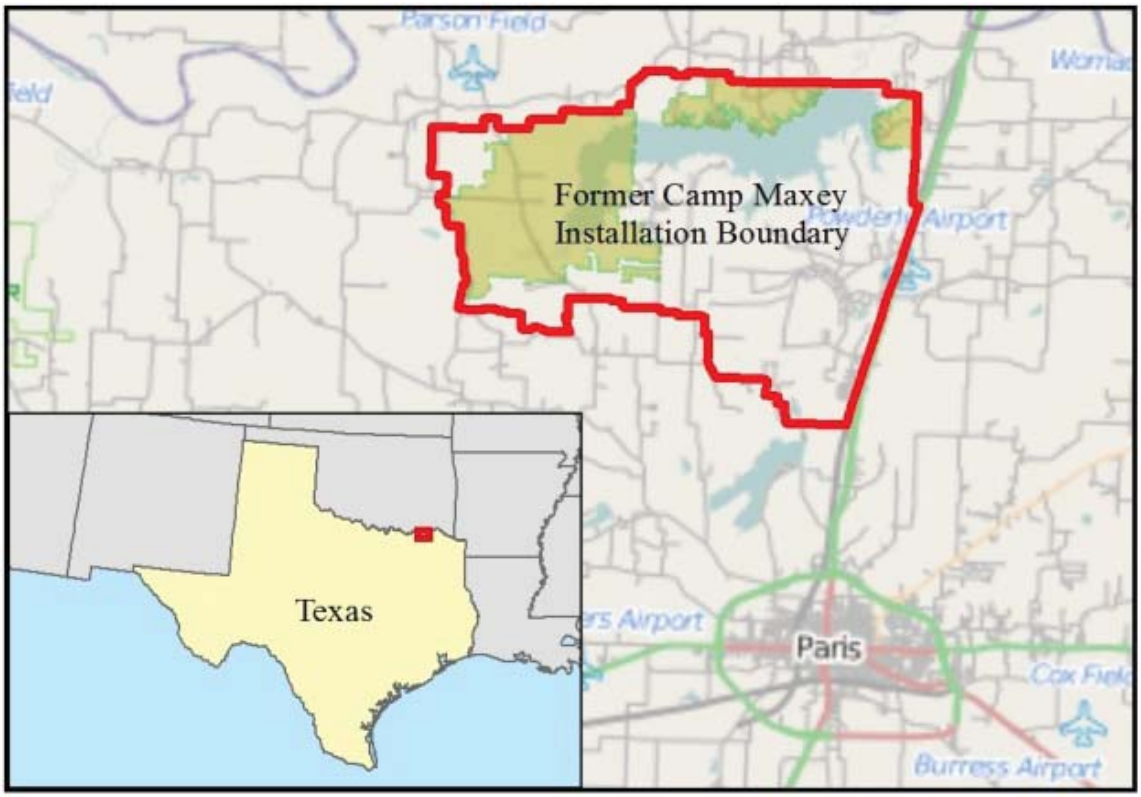
The site addressed by this Decision Document is the Mine and Booby Trap Training Area MRS, which consists of approximately 35 contiguous acres of land south of Pat Mayse Lake and east of the Western Range Area at the former Camp Maxey. This MRS is associated with a former mine a booby trap training area. MEC contamination is likely at the MRS based on historical evidence and munitions debris (MD) provided by a property owner. The Remedial Investigation (RI) completed for Camp Maxey recommended that a Feasibility Study (FS) be conducted to evaluate possible remedial alternatives to address MEC contamination that was identified. The *Final RI/FS Report* (EOTI, 2014) for Camp Maxey was completed in April 2014.

This Decision Document has been prepared in accordance with the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), also known as Superfund, and follows the requirements from *Engineer Regulation 200-3-1*; *FUDS Program Policy* (USACE, 2004); *MMRP Interim Guidance Document 06-04* (USACE, 2006); and the United States Environmental Protection Agency (USEPA) guidance provided in *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents*, *USEPA 540-R-98-031* (USEPA, 1999). Because this Decision Document follows the precise format specified in the USEPA guidance, some sections are included that might not apply to this site and the associated selected remedies. In these cases text is included explaining why the information required in the guidance is not relevant and/or not applicable to Camp Maxey.

The remedy described in this Decision Document was selected in accordance with CERCLA, 42 U.S. Code § 9601 et seq., as amended by the Superfund Amendments and Reauthorization Act of 1986, and, to the

extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 Code of Federal Regulations Part 300 as amended.

Figure 1: Camp Maxey Location



3 ASSESSMENT OF SITE

MEC contamination has not been confirmed at the MRS; however, based on historical evidence and munitions debris (MD) provided by a property owner, the site was characterized to likely contain MEC. During the RI fieldwork in 2013, rights-of-entry (ROEs) were only obtained for parcels in the northern portion of the MRS. No MEC, MD, or indicators of MEC were identified from the investigation conducted during the RI; however, a property owner provided MD previously discovered from a parcel where no ROE was granted. The MD was identified as M1 practice mines and what appear to be smoke canisters, both consistent with mine training suspected in the area. Based on this, the RI concluded that unexploded ordnance (UXO) may be present on the surface and in the subsurface at the Mine and Booby Trap Training Area MRS; therefore, the site poses a potential threat to public health, welfare, or the environment. MC sampling indicated that there are no unacceptable risks to human health or the environment due to exposure to MC at this MRS. Although no MC samples were collected from the MRS, the sampling that was conducted of the remainder of the former Camp Maxey (where MEC was found) was sufficient to complete a baseline risk assessment for MC for the entire former Camp Maxey.

Figure 2: Camp Maxey Munitions Response Sites

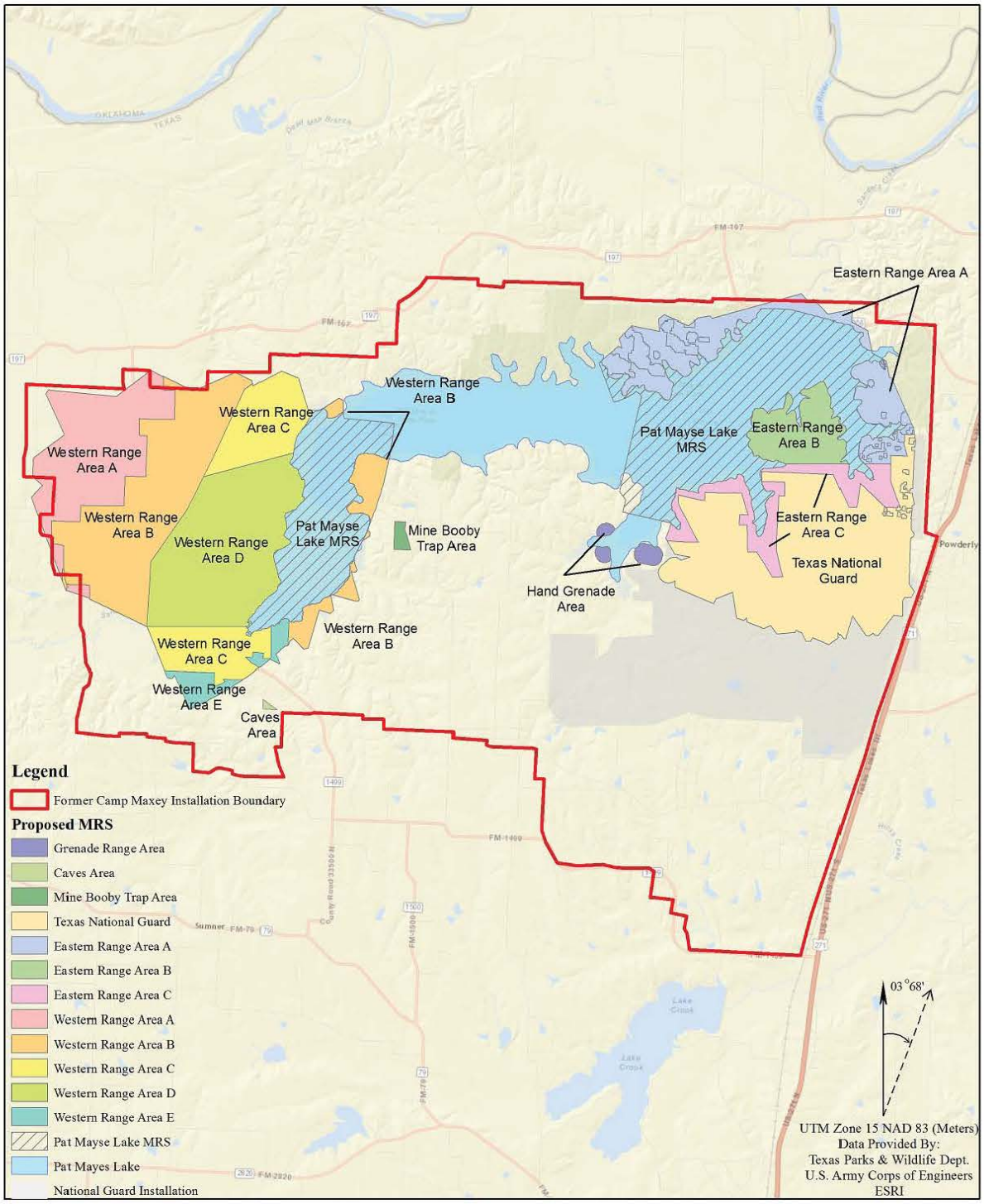
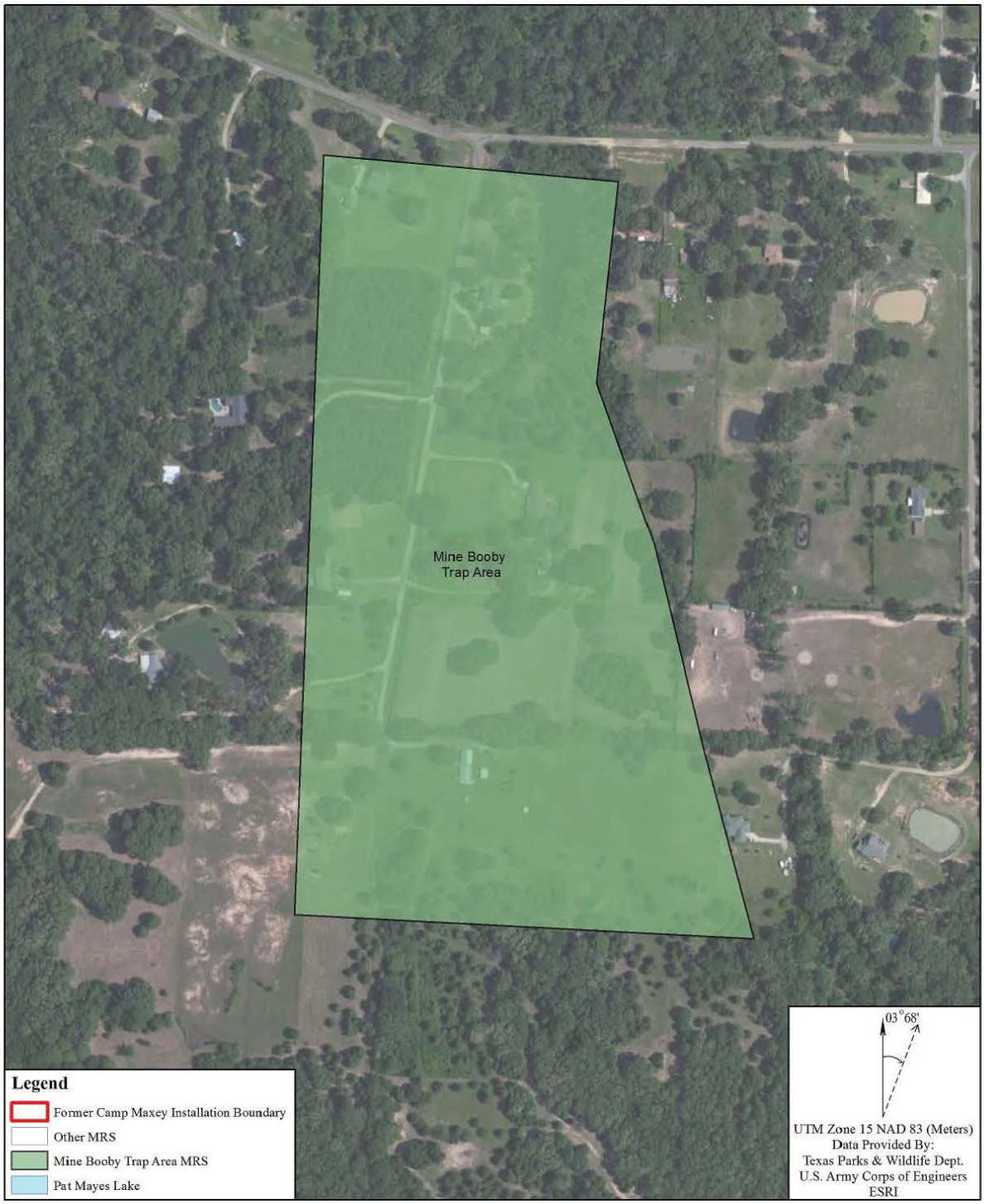


Figure 3: Mine and Booby Trap Area MRS



4 DESCRIPTION OF SELECTED REMEDIES

USACE has selected a combination of a 100 percent surface and 12-inch subsurface clearance that will allow for unlimited use and unrestricted exposure (UU/UE) at the MRS. As part of this remedy, no land use controls (LUCs) or long-term management of the MRS is required.

This selected remedy effectively reduces the MEC hazards present at the Mine and Booby Trap Training Area MRS by reducing the source material through surface and subsurface MEC clearances, thereby minimizing the direct contact threat associated with MEC.

5 STATUTORY DETERMINATIONS

Based on the information currently available, the selected remedy for the Mine and Booby Trap Training Area MRS is protective of human health, safety, and the environment and satisfies the statutory requirements of CERCLA §121(b) with regards to the former use of the MRS by the DoD. The selected remedy is cost-effective and utilizes permanent solutions and alternative technologies to the maximum extent practicable. The selected remedy does not meet the statutory preference for treatment; however, this is considered acceptable because no source materials constituting a principal threat waste are present at the site. Substantive portions of the Resource Conservation and Recovery Act (RCRA) Disposal Requirements (40 CFR 264, Subpart X) may apply as an applicable or relevant and appropriate requirement (ARAR) if, as part of a surface or subsurface clearance, munitions are consolidated for treatment, storage, or disposal.

Because this remedy allows for unlimited use and unrestricted exposure (UU/UE) at the MRS, a statutory five-year review will not be required.

6 DATA CERTIFICATION CHECKLIST

The following information is included or otherwise addressed in this Decision Document.

- A summary of the characterization of MEC hazards at the Mine and Booby Trap Training Area MRS.
- Current and reasonably anticipated future land use assumptions for the site.
- Key factors that led to the selection of the remedy for the Mine and Booby Trap Training Area MRS.
- Estimated costs related to the selected remedy.
- How source materials constituting principal threats will be addressed.

Information on chemicals of concern (COCs) and their respective concentrations, associate baseline risk, and established cleanup levels is not included because there are no unacceptable risks to human health or the environment due to potential exposure to MC at the Mine and Booby Trap Training Area MRS (EOTI, 2014).

7 AUTHORIZING SIGNATURE

This Decision Document presents the selected response action at the Mine and Booby Trap Training Area MRS, Camp Maxey, Lamar County, Texas. The USACE is the lead agency under the DERP at the Camp Maxey FUDS, and has developed this Decision Document consistent with the CERCLA, as amended, and the NCP. This Decision Document will be incorporated into the larger Administrative Record file for Camp Maxey, which is available for public view at Paris Public Library, 326 S. Main Street, Paris, Texas 75460. This document, presenting a selected remedy with a present worth cost estimate of $617,000, is approved by the undersigned, pursuant to Memorandum, CEMP-CED (200-1a), July 29, 2016, subject: Redelegation of Assignment of Mission Execution Functions Associated with Department of Defense Lead Agent Responsibilities for the Formerly Used Defense Sites Program, Engineer Regulation 200-3-1, FUDS Program Policy and to the Memorandum, CEMP (1200C PERM February 9, 2017, subject: Interim Guidance Document for the Formerly Used Defense Sites (FUDS) Decision Document (DD) Staffing and Approval.

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Digitally signed by PEREZ.PETE.G.1132012314
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PETE G. PEREZ, P.E., SES
Director, Regional Business Directorate

DATE

PART 2 - DECISION SUMMARY

1 SITE NAME, LOCATION, AND BRIEF DESCRIPTION

The site addressed in this Decision Document is the Mine and Booby Trap Training Area MRS at Camp Maxey in Lamar County, Texas. The Federal Facility Identifier (FFID) for Camp Maxey is TX9799F668600. The Camp Maxey Mine and Booby Trap Training Area MRS has been identified by the USACE under the FUDS program as Site Number K06TX030512. USACE is the lead agency for investigating, reporting, making remedial decisions, and taking remedial actions at Camp Maxey. TCEQ is the lead regulatory agency. Funding for implementing the selected remedy at the MRS will be appropriated through DERP.

Camp Maxey is a former military facility located nine miles north of Paris, Texas in Lamar County and approximately three miles south of the Texas-Oklahoma border. United States (U.S.) Highway 271 forms part of the eastern border of Camp Maxey and the former installation is within 105 miles of Dallas and Fort Worth, Texas; and 155 miles of Shreveport, Louisiana.

2 SITE HISTORY AND ENFORCEMENT ACTIVITIES

2.1 Site History

The Camp Maxey FUDS comprises approximately 10,144 acres of land and 4,283 acres of water (14,427 total acres) and was part of a 41,428-acre U.S. Army post in the northeast corner of the state utilized for training infantry during World War II. Camp Maxey was activated as an infantry basic training camp in July, 1942, shortly after the U.S. declared war on Japan in December 1941. In October 1944, the camp was designated an infantry Advance Replacement Training Center. Infantry were trained in live fire of weapons including pistols, carbines, rifles, tommy guns, automatic rifles, machine guns, mortars, bazookas, anti-tank guns, and artillery. The camp was deactivated in October 1945, after World War II had ended, and the camp was declared surplus in May 1947. During 1948 and 1949, certificates of decontamination, which included restrictions on land for any purpose and for surface use only, were issued by the USACE. Land was conveyed to the State of Texas and sold to private owners. Later, some of the land was returned to the ownership of the federal government for construction of a dam on Sanders Creek.

Today, there are three significant groups of property owners within the former Camp Maxey: the federal government, the State of Texas, and private owners. The federal government owns the largest amount of the former camp, including Pat Mayse Lake and the surrounding land. A large portion of the federally-owned property has been leased to the Texas Parks and Wildlife Department (TPWD) for use as a Wildlife Management Area (WMA). Most of the Western Range Area is located within the WMA. The State of Texas owns acreage where the current Camp Maxey Texas National Guard installation is located. Much of the southern portions of the East Range Area are located within this current Texas National Guard installation. The remaining land is privately owned. Privately-owned property is generally used for residential, farming, and ranching purposes, and the majority of privately owned land is in the southern portion of the former camp in areas not used for ordnance training and outside of the FUDS project footprint. The Mine and Booby Trap Training Area is located on numerous parcels of private residential properties.

2.2 Investigations Conducted to Date

Between 1965 and 2010, numerous removal actions, historical records reviews, and studies have been completed to remove MEC and identify past activities at former Camp Maxey which potentially resulted in contamination, and where those activities were conducted:

- Archive Search Report (USACE, 1994)
- Final Removal Report, Ordnance and Explosives Time Critical Removal Action (Human Factors Applications, Inc., 1997)
- Final Sampling Report, Ordnance and Explosives Survey and Sampling (UXB International, Inc., 1998)
- Engineering Evaluation/Cost Analysis (Parsons Engineering Science, Inc., 2000)
- Final Removal Report, Ordnance and Explosive Removal Action (UXB International, Inc., 2001)
- Archive Search Report Supplement (USACE, 2004)
- Final Report, Munition Constituents Sampling, Analysis, and Evaluation of Formerly Used Defense Sites (Parsons, 2006)
- Final Site Specific Final Report, Site Management, Ordnance Investigation and Removal (Tetra Tech EC, Inc., 2007)
- Site Specific Final Report, Non-Time Critical Removal Action (USA Environmental, Inc., 2010)

MEC was identified and removed in some areas identified as having the highest potential for interaction with UXO primarily in the Eastern Range Area.

An Archive Search Report Supplement, released in 2004, identified and described 14 MRSs based on previous studies, and summarized the ordnance items recorded or suspected for each MRS. In 2008, based on the anticipated response, the 14 MRSs at Camp Maxey were realigned into a single MRS (Camp Maxey Range Complex).

Although, MEC removal actions had already been completed in specific areas within the former Camp Maxey, USACE conducted an RI/FS between 2013 and 2014. The RI/FS was conducted in accordance with CERCLA to confirm the presence of MEC and/or MC, characterize the nature and extent of contamination, and present an analysis of remediation alternatives (EOTI, 2014). During the RI, the single MRS at Camp Maxey was delineated into thirteen MRSs, as shown in Figure 2. Eight MRSs were evaluated during the FS; of which, all eight were recommended to assess possible response actions for MEC. This Decision Document addresses one MRS, the Mine and Booby Trap Training Area MRS. The other seven MRSs fully investigated during the RI/FS are addressed in separate Decision Documents.

2.3 CERCLA Enforcement Actions

To date, there have been no CERCLA-related enforcement activities at the project site.

3 COMMUNITY PARTICIPATION

Community participation in the process leading to this Decision Document falls into three categories: 1) dissemination of information to the community; 2) stakeholder involvement in the technical project planning (TPP) process; and 3) formal public comment period. These three areas are described in more detail below.

3.1 Information Dissemination

The following activities were conducted to disseminate information to the community in the vicinity of Camp Maxey:

- An Administrative Record file was established at Paris Public Library, which currently contains past investigation reports, the *Final RI/FS Report for former Camp Maxey* (EOTI, 2014) , and the *Proposed Plan for former Camp Maxey* (EOTI, 2014b).
- Based on the consensus reached by the project planning team, a Proposed Plan was prepared for public review and comment. A newspaper announcement was published on 17 June 2014 in *The Paris News* to solicit public comment on the Proposed Plan for former Camp Maxey (Attachment 1).
- A public meeting to discuss the Proposed Plan was held at the Holiday Inn Express in Paris, Texas on 24 June 2014.

3.2 Technical Project Planning

The following activities were conducted during the TPP process for Camp Maxey:

- Representatives of USACE and state and federal regulatory authorities were invited to participate in the TPP process for the investigation of Camp Maxey. The initial TPP meeting was held on 12 June 2008 and, during this meeting, the TPP participants (stakeholders) were provided with an overview of the TPP process and the site history. The participants then worked with the USACE contractor to identify concerns related to ordnance activities at Camp Maxey, to agree upon a general approach to further investigation(s), and to reach a consensus on a site closeout statement.
- Further communication with the stakeholders took place during development of the RI/FS work plan. A second TPP meeting was held on 4 September 2008.
- Further communication with the stakeholders took place during development of the RI/FS work plan. A third TPP meeting was held on 4 December 2008.
- A fourth TPP meeting was conducted with the stakeholders on 26 July 2012 to finalize project data quality objectives (DQOs) and the work plan.
- A fifth TPP meeting was conducted on 25 November 2013 to review the results and conclusions of the RI and to discuss the implications of right-of-entry (ROE) refusal in several areas of Camp Maxey and the 13 delineated MRSs.

The details of the TPP meetings are recorded in TPP Memorandums. All TPP Memoranda are available in the Administrative Record at the Paris Public Library as an Appendix to the *Final RI/FS Report* (EOTI, 2014).

3.3 Formal Public Comment Period

The USACE made the *Proposed Plan for former Camp Maxey* (EOTI, 2014b) available for public comment between 17 June 2014 and 17 July 2014. This public comment period was announced through a notice placed in *The Paris News* newspaper (Attachment 1).

4 SCOPE AND ROLE OF OPERABLE UNIT OR RESPONSE ACTION

The contamination to be addressed at Camp Maxey is related to the potential MEC hazards present in and around the former range complexes. Based on the findings of the RI, the Camp Maxey Munitions Response Area (MRA) was delineated (subdivided) into 13 MRSs shown in Figure 2. The delineation was based on the potential presence of MEC, differences in land ownership, and current and reasonably anticipated future land use. Of these thirteen MRSs, remedial alternatives were developed and evaluated for eight MRSs. These eight MRS were evaluated in the FS and included in the Proposed Plan. The remaining four MRSs require additional investigation to adequately characterize the nature and extent of MEC potentially at each site. The four MRSSs requiring additional information are Western Range Area A, Western Range Area E, Cave Training Area, and Bivouac Area. Prior to the RI, the Camp Maxey MRA totaled 16,235 acres. Following the MRS delineation resulting from the RI, the combined acreage of all 12 land MRSs is 10,143 acres. Part of the 10,143 acres includes the 1,125-acre Bivouac Area MRS which was identified during the RI and was not included in the original 16,235-acre MRA. Additionally, 4,283 acres of water (Pat Mayse Lake MRS) within the eastern and western range areas were not investigated but are included in the revised 14,427-acre FUDS footprint. The Camp Maxey National Guard Military Reservation encompasses approximately 2,894 acres of the MRA in the Eastern Range Area; however, the reservation is active and therefore not eligible for the FUDS program. This DD only addresses the 35-acre Mine and Booby Trap Training Area MRS.

The overall remedial strategy for the Mine and Booby Trap Training Area MRS reflects USACE's desire to mitigate the potential risks posed from exposure to potential MEC hazards at the sites. Consequently, the Selected Remedy for this MRS is designed to reduce the potential for unacceptable exposures to MEC through a 100 percent surface and 12-inch subsurface clearance. Following approval of the Selected Remedy for the Mine and Booby Trap Training Area MRS that is determined to be protective of human health and the environment, minimizes explosive safety hazards, and satisfies the statutory requirements of CERCLA §121(b) with regards to the former DoD use of the MRS, the lead agency will develop a remedial design/response action plan that details how the Selected Remedy will be conducted. Following the completion of the remedial design/response action plan, the remedial action will be implemented.

5 PROJECT SITE CHARACTERISTICS

5.1 Site Overview

The Camp Maxey FUDS comprises approximately 10,144 acres of land and 4,283 acres of water (14.427 total acres) and was part of a 41,128-acre U.S. Army post in the northeast corner of the state utilized for training infantry during World War II. Camp Maxey was activated as an infantry basic training camp in July, 1942, shortly after the U.S. declared war on Japan in December 1941. In October 1944, the camp was designated an infantry Advance Replacement Training Center. Infantry were trained in live fire of weapons including pistols, carbines, rifles, tommy guns, automatic rifles, machine guns, mortars, bazookas, anti-tank guns, and artillery. The Mine and Booby Trap Training Area consists of approximately 35 contiguous acres of land south of Pat Mayse Lake and east of the Western Range Area in the former Camp Maxey. This MRS is associated with a mine and booby trap training area outside of the Western Range Area range

fans (Figure 2). MEC contamination has not been confirmed at the MRS; however, based on historical evidence and MD provided by a property owner, the site was characterized to likely contain MEC.

The camp was declared surplus in May 1947 and conveyed to the State of Texas and sold to private landowners. Later, some of the land was returned to the ownership of the federal government for construction of a dam on Sanders Creek. Today, the former camp is divided into federal, state, and privately owned properties. The federal government owns Pat Mayse Lake and the surrounding land used for management of the lake. The State of Texas owns the Camp Maxey Texas National Guard Military Reservation which was within portions of the Camp Maxey MRA but was determined to be ineligible for the FUDS program and was therefore not investigated as part of the RI. The remaining land is privately owned and generally used for residential, farming, and ranching purposes. The Mine and Booby Trap Training Area MRS, which this DD addresses, is on numerous private residential parcels.

The former Camp Maxey lies within the Gulf Coastal Plain which is generally a gently undulating plain characterized by uplands of low relief and broad river valleys. The majority of the vegetative cover consists of deciduous forest or woodland. The surficial geology of Lamar County reflects outcrops of primarily moderate to very slowly permeable loamy and/or clayey soils. The majority of the former Camp Maxey area lies within the Sanders Creek watershed and drainage basin. The Pat Mayse Dam was built in 1967 on Sanders Creek, a tributary of the Red River, and forms the Pat Mayse Lake which covers large portions of former range fans. The area generally drains to the northeast.

The former Camp Maxey area has a low probability of archeological and historical significance. No known significant Native American activities occurred in the area and military buildings and sites of historic significance from World War II have been lost through deactivation, inattention and redevelopment. In addition, no items of apparent historical or cultural significance were encountered during the RI fieldwork.

Several threatened and endangered species have been identified in Lamar County, Texas; however, the habitat requirements for most of the listed species does not exist at the former Camp Maxey and no protected species have been observed at the former Camp Maxey.

5.2 Investigation of Munitions and Explosives of Concern

The following general activities were performed to assess the presence of MEC at Camp Maxey and to define the nature and extent of potential MEC hazards:

- Historical document review: re-evaluation of site documents (e.g., Archive Search Report and Supplement, Removal Action Reports, Engineering Evaluation/Cost Analysis Report etc.) to assess the potential MEC presence at each MRS.
- Digital Geophysical Mapping (DGM) surveys: detection and mapping of subsurface metallic "anomalies" using digital instruments. The precise locations of anomalies detected using DGM were recorded using global positioning system (GPS) units or other methods.
- Intrusive excavation: a representative portion of the subsurface metallic anomalies detected during DGM or analog surveys were selected for excavation to characterize whether or not the anomalies were MEC-related

The RI effort at the Mine and Booby Trap Area MRS differed slightly from the approach at the remainder of the investigated MRSs. The majority of the former training area lies on three private land parcels. Eight other private parcels overlap smaller portions of the perimeter of the former training area. In order to investigate the area, the USACE requested ROEs from each property owner with parcels that contain a portion of the MRS. ROEs were not obtained for large portions of the central and southern portions of the training site, however access was granted in the northern portion and along the perimeter. Access was only granted to six of the 11 parcels which allowed access to 23.6 percent of the MRS.

An instrument-assisted visual inspection was conducted on the portion of the MRS where access was granted (approximately 23.6 percent). During the inspection, two UXO Technicians walked a meandering path through the accessible area using a metal detector to help visually identify MD or other indicators of previous mine or booby trap training. The total length of the path was approximately 13,263 feet.

No MEC, MD, or indicators of MEC were identified from the investigation conducted during the RI; however, a property owner provided MD previously discovered from a parcel where no ROE was granted. The MD was identified as M1 practice mines and what appear to be smoke canisters, both consistent with mine training suspected in the area. More details of the MEC investigation conducted at Camp Maxey are presented in the *Final RI/FS Report for former Camp Maxey* (EOTI, 2014).

5.3 Investigation of Munitions Constituents

To assess the presence as well as characterize the nature and extent of MC contamination at the former Camp Maxey MRA, surface and subsurface soil samples were collected and analyzed at locations where MEC was known or suspected to be present throughout Camp Maxey. In total, forty-four (44) surface soil samples were collected from all the MRSs at the former Camp Maxey where MEC was found during the RI or from RI grids designated as having medium/high munitions debris density. Because of the type of investigative activities conducted at the MRS (meandering transects were traversed instead of establishing investigative grids), no samples were collected within the MRS. No surface soil samples were collected from within the Mine and Booby Trap Area MRS because no MEC investigation grids were established within the MRS which could meet the criteria established for sample collection (i.e., confirmed MEC or medium/high MD density). Following the surface soil sampling and analysis, a total of 120 subsurface soil samples were collected from all of the MRSs at the former Camp Maxey and analyzed for lead from locations where surface soil sample results exceeded established screening levels for lead. Although no MC samples were collected from the MRS, the sampling that was conducted of the remainder of the former Camp Maxey (where MEC was found) was sufficient to complete a baseline risk assessment for MC for the entire former Camp Maxey.

The results of the surface and subsurface soil sample analyses were compared to preliminary screening values, which were developed using Camp Maxey site-specific background soil concentrations and selected applicable human health and ecological screening values. The results of the baseline risk assessment completed as part of the RI demonstrate that adverse health effects from human and ecological exposure to MC in soil at the former Camp Maxey are not expected; therefore, contamination is not expected to be present in other environmental media such as surface water, sediment, air, plants, or animals. Based on these results, no further investigation on the basis of potential human health or ecological risk is warranted and MC contamination will not be discussed further in this section. More

detailed information concerning the MC sampling and analysis conducted at the Mine and Booby Trap Training Area MRS are presented in the *Final RI/FS Report for former Camp Maxey* (EOTI, 2014).

5.4 Types of Contamination and Affected Media

Based on the results of the prior historical investigations and the RI, potential MEC hazards in the form of UXO remain at the Mine and Booby Trap Training Area MRS. The presence of MD, an indicator of MEC, has been confirmed at the MRS. The MD, coupled with the residential use of the properties and the existence of potentially complete MEC exposure pathways at the surface and in the subsurface, confirms the potential for MEC hazards at this MRS.

5.5 Location of Contamination

As described above, MD items have been found within the Mine and Booby Trap Training Area MRS on the ground surface and in the shallow subsurface indicating the potential for MEC. The exact location of MD finds is unknown.

5.6 Migration and Exposure Routes

As described above, the potential for MEC exposure exists at the Mine and Booby Trap Training Area MRS. For this reason, there is a potential for residents and commercial and industrial workers to come into contact with surface or subsurface MEC.

5.7 Potential Receptors Present

The primary receptors at the Mine and Booby Trap Training Area MRS are anticipated to be residents and outdoor site workers (e.g., utility workers).

5.8 Potential MEC Exposure Pathways

Potential exposure to MEC contamination in soil could occur via direct contact of receptors to MEC contamination present in surface or subsurface soil. As described above, potential receptors that could interact with these pathways include residents and outdoor site workers (e.g., utility workers). These receptors would most typically be in contact with soil on the ground surface and within the first foot (12 inches) bgs; however, based on the type of training conducted at the site (mine and booby traps), munitions are not expected at depths greater than six inches bgs. MEC in soil could also migrate via natural processes (i.e., erosion) to the surface.

5.9 Conceptual Site Model

A conceptual site model (CSM) is a representation of a site and its environment that is used to facilitate understanding of the site and the potential contaminant exposure pathways that might be present. The CSM describes potential contamination sources and their known or suspected locations, human and/or ecological receptors present, and the possible interactions between the two. The CSM summarizes which potential receptor "exposure pathways" for MEC and MC are (or may be) "complete" and/or "potentially complete" and which are (and are likely to remain) "incomplete." An exposure pathway is considered incomplete unless all of the following elements are present: (a) MEC or MC contamination; (b) a receptor that might be affected by that contamination; and (c) a method for the receptor to be exposed to (i.e., come into contact with) the contamination. If all of these elements are present, an exposure pathway is

considered complete. If no MEC or MC has been confirmed at the MRS, the pathway is considered "potentially complete" if 1) significant MD is present indicating the potential for either MEC or MC to exist and 2) both receptors and an exposure method are present.

Following completion of the RI and the evaluations of contamination and potential exposure pathways described above, the initial CSM for the Mine and Booby Trap Training Area MRS was updated to reflect the status of MEC and MC exposure pathways using the results of the investigation. Because the baseline risk assessment completed as part of the RI demonstrates that adverse health effects from human and ecological exposure to MC in soil at the former Camp Maxey are not expected, all MC exposure pathways in the CSM are considered to be incomplete for the Mine and Booby Trap Training Area MRS. Since no MEC was observed at the Mine and Booby Trap Training Area MRS during the RI but because MD was found during the RI, pathways are considered potentially complete for all receptors. The updated CSM is included as Figures 3 and 4.

6 CURRENT AND POTENTIAL FUTURE LAND USES

The land uses within the former Camp Maxey are predominantly ranching, farming, rural residential, and recreational. The majority of the lands within the MRSs at Camp Maxey are used for parks, wildlife management, and flood control for Pat Mayse Lake.

At the Mine and Booby Trap Training Area MRS, all the private properties which are part of the MRS are considered residential. Based on discussions with landowners and stakeholders, these current land uses are projected to remain the same for the foreseeable future. The land uses identified at Camp Maxey are discussed in detail in the *Final RI/FS Report for the former Camp Maxey* (EOTI, 2014).

Figure 4: Exposure Pathway Analysis for MEC – Mine and Booby Trap Training Area

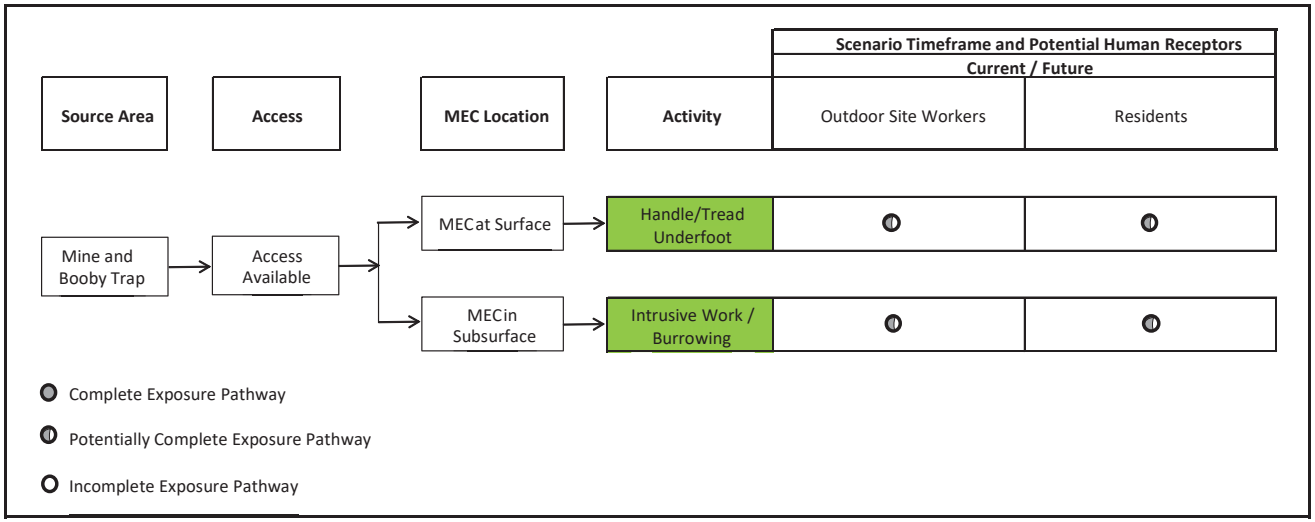
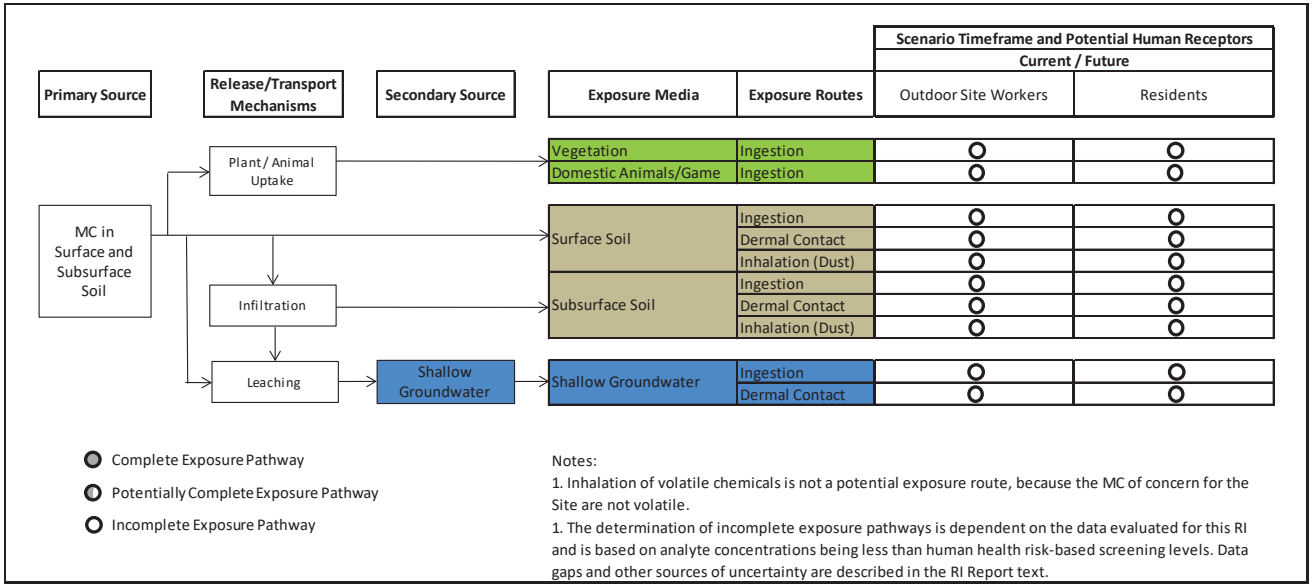


Figure 53: Exposure Pathway Analysis for MC – Mine and Booby Trap Training Area



7 SUMMARY OF PROJECT SITE RISKS

7.1 Human Health Risks

Potential receptors of MEC hazards present at the Mine and Booby Trap Training Area MRS are anticipated to be residential property owners, visitors and outdoor site workers. Based on the findings at Camp Maxey, MEC hazard assessments (HAs) were performed to qualitatively characterize the potential MEC hazards at select MRSs. The MEC HA method generates a score and a corresponding "Hazard Level" ranging from 1 (highest) to 4 (lowest) that provides a qualitative indication of the MEC hazard in each area (these are not quantitative measures of explosive hazard). Because no MEC has been found within the Mine and Booby Trap Training Area MRS, the MEC HA could not be completed; however, a qualitative risk evaluation was completed during the RI. This evaluation considered all elements of risk and based on MD found within the MRS, which is an indicator of potential MEC, concluded there is low risk related to MEC at the Mine and Booby Trap Training Area MRS (EOTI, 2014).

As discussed previously, no MC contamination was detected in the soil at the former Camp Maxey, and therefore the Mine and Booby Trap Training Area MRS, during the RI (EOTI, 2014). Based on these results, the MC risk assessment conducted as part of the RI concluded that there was no unacceptable human health risk posed by exposure to MC at the Mine and Booby Trap Training Area MRS.

7.2 Ecological Risks

Ecological receptors are not considered in the evaluation of MEC hazards. As discussed previously, no MC contamination was detected in the soil at the Mine and Booby Trap Training Area MRS during the RI (EOTI, 2014). Based on these results, the MC risk assessment conducted as part of the RI concluded that there was no unacceptable ecological risk posed by exposure to MC at the Mine and Booby Trap Training Area MRS.

7.3 Basis for Response Action

The basis for taking the response action at the Mine and Booby Trap Training Area MRS is the risk associated with the potential MEC hazard. The response action selected in this DD is necessary to protect public health and welfare from potential MEC on the surface and subsurface at the Mine and Booby Trap Training Area MRS.

8 REMEDIAL ACTION OBJECTIVES

The general Remedial Action Objective (RAO) at Camp Maxey is to limit exposure to potential hazards/risks for site workers, residents, site visitors, and ecological receptors resulting from exposure to MEC and MC at the site. However, no unacceptable risk posed by exposure to MC was identified at the former Camp Maxey, so no RAOs are required for MC at the MRS. The specific RAO for the Mine and Booby Trap Training Area MRS is to minimize direct contact with MEC during residential activities on the ground surface and to a maximum anticipated receptor contact depth of six inches.

9 DESCRIPTION OF ALTERNATIVES

A range of general response actions were identified, evaluated, and screened to develop a list of possible remedial alternatives for the Camp Maxey MRSs. These general response actions were (a) no action, (b)

LUCs (e.g., public education, signage, etc.), and (c) surface and subsurface MEC removals. Various technology options for these general response actions were evaluated based on screening criteria that included effectiveness, implement ability, and cost. Methods deemed to be viable were combined into possible remedial alternatives for the Mine and Booby Trap Training Area MRS. A No Action alternative was also evaluated. The No Action alternative refers to a remedy where no active remediation or enforceable LUCs are implemented. Under CERCLA, evaluation of a No Action alternative is required to provide a baseline for comparison of other remedial technologies and alternatives. A detailed description of the alternative development process is provided in the FS for former Camp Maxey for eight of the thirteen MRSs at Camp Maxey (EOTI, 2014). Rights-of-entry could not be obtained for the any portion of the remaining four MRSs; therefore, investigations will be completed and remedial alternatives developed and evaluated at a later date. The water within the Eastern Range Area and the Western Range Area complexes (Pat Mayse Lake MRS) was not included as part of the RI and was also not investigated. Four remedial alternatives were developed during the FS for the Mine and Booby Trap Training Area MRS, each extending over a time frame of 30 years.

9.1 Remedy Components

The major components of each alternative are described below:

9.1.1 Alternative 1: No Action

The No Action alternative (also referred to as No Further Action under CERCLA) has no major components because it means that a remedy will not be implemented to reduce the potential safety risk posed by MEC interaction with human receptors.

9.1.2 Alternative 2: Land Use Controls

Alternative 2 employs the use of LUCs to reduce and prevent explosive hazard exposure to potential human and ecological receptors. LUCs for MEC generally include physical and/or administrative/legal mechanisms that minimize the potential for exposure by increasing awareness and limiting land use. This process does not prevent exposure to MEC in all cases; however, it can effectively prevent exposure by increasing awareness and/or restricting access to areas where MEC may potentially be present. The use of LUCs at the Mine and Booby Trap Area MRS is limited compared to other MRSs at the former Camp Maxey because the property is privately owned and implementation of LUCs is therefore much more difficult. The LUCs for Alternative 2 include the following:

- **Public Education:** Public education would consist of periodic 3Rs of Explosives Safety "Recognize, Retreat, and Report" Program (3Rs) educational meetings, fact sheets, and letters to landowners. A 3Rs program would focus on providing information on the areas containing the MEC hazards and the appropriate response if MEC is encountered. These preventive measures have the goal of modifying behavior to reduce the risk of exposure and reduce the impact if exposure occurs. Fact sheets and educational materials can be distributed through the community as posted notices or handouts. In addition, letters and fact sheets would be sent to landowners and residents on parcels in areas identified as having MEC hazards as a result of the RI, and a Community Relations Plan (CRP) would be updated every five years.

- **LTM Program:** Establishment of a LTM program that includes monitoring the effectiveness of LUC and addresses the potential for MEC to become exposed due to natural forces such as erosion.

9.1.3 Alternative 3: Land Use Controls; 100 Percent Surface and Six-inch Subsurface Clearance

Alternative 3 employs the use of LUCs in combination and a 100 percent surface and six-inch subsurface clearance over the entire MRS to reduce the source of the hazard and prevent explosive hazard exposure to potential human and ecological receptors. The completion of the surface and subsurface clearances would result in a significant reduction in MEC hazards. Some munitions may remain under existing structures such as roads, buildings, sidewalks, and paved areas within the clearance footprint. Planning for the clearances should consider potential impacts to the environment in the MRS, and will involve coordination with property owners and may require endangered species surveys; however, based on current listings, affects to endangered species and their habitat is not anticipated as a result of the remedial action. This alternative would also include LUCs discussed under Alternative 2.

9.1.4 Alternative 4: 100 Percent Surface and Subsurface Clearance (Unlimited Use/Unrestricted Exposure)

This alternative consists of conducting a surface and subsurface clearance over the entire MRS (100 percent) allowing unlimited use and unrestricted exposure for the property. The subsurface clearance will be completed to a specified depth outside of areas that can be confirmed to have been cleared in previous remedial actions to ensure the property is acceptable for unlimited use and unrestricted exposure. The specific subsurface clearance depth for the Mine and Booby Trap Training Area MRS is 12 inches bgs. The 12-inch clearance depth is conservative and based on the historic munitions use within the MRS and current and anticipated future land use. The completion of the remedial action over 100 percent of the MRS would result in a significant reduction in MEC hazards; however, some munitions may be missed under existing structures such as roads, buildings, sidewalks, and paved areas not likely to be cleared. Planning for the surface clearance should consider the significant impacts to receptors and the environment in the MRS, and will involve coordination with property owners and may require endangered species surveys. While no endangered species have been encountered at the former Camp Maxey and the habitat necessary to support most of Lamar County's federal or state protected species does not exist at the former Camp Maxey, any comparable habitat would be destroyed as a result of Alternative 4.

LUCs and five-year reviews are not required as part of this alternative as it is designed to provide for unlimited use and unrestricted exposure for the entire MRS.

9.2 Five-Year Reviews

Remedial Alternative 1, Alternative 2, and Alternative 3, do not allow for unlimited use/unrestricted exposure (UU/UE) in accordance with 40 Code of Federal Regulations (CFR) 300.430(f)(4)(ii); therefore, five-year reviews will be performed in addition to the remedial actions included in each of the three alternatives identified to ensure that the remedy remains protective of human health and the environment. Five year reviews are a requirement for all alternatives not allowing for UU/UE use in accordance with 40 CFR 300.430(f)(4)(ii). A Five-Year Review Report will document the information collected and evaluated, and present the findings of the evaluation of the continued protectiveness of

LUCs at the Mine and Booby Trap Training Area MRS. The report will document whether the selected alternative continues to minimize explosive safety risks and is still protective of human health, safety, and the environment and/or recommend follow-up actions that may be warranted.

9.3 Expected Outcomes of Each Alternative

There are no socioeconomic or community revitalization impacts anticipated as a result of implementing any of the alternatives, and no environmental or ecological benefits (such as restoration of sensitive ecosystems, protection of endangered species, protection of wildlife resources, or wetlands restoration).

9.3.1 Alternative 1: No Action Alternative

No further action is conducted under this alternative to locate, remove, dispose of, or limit exposure to any potential MEC. No institutional controls (e.g., education, deed notices, construction permits, etc.) are implemented. No costs are associated with this alternative since there would be no action. Evaluation of this alternative is required and used as a baseline for comparison with other alternatives. This alternative does not meet the RAOs or effectiveness screening criteria for the Mine and Booby Trap Training Area MRS because there is a potentially complete MEC pathway.

9.3.2 Alternative 2: Land Use Controls

The LUC alternative requires that a 3Rs educational program be implemented to warn of the potential explosive hazards associated with the site. A LTM plan would be required to inspect LUCs and provide 3Rs educational material on a periodic basis. In addition, the LTM plan will address the potential for MEC that may become exposed due to natural forces such as erosion.

The LUC alternative would provide for reasonable protection of human health and the environment through education of site risks and limitation of access to potential human receptors. This alternative is effective in both the short- and long-term because it reduces the potential for human receptors to encounter MEC at the MRS. There is no source reduction of MEC associated with this alternative. The LUC alternative can be implemented easily as no specialized equipment or personnel are required, there is a very low level of potential environmental disturbance. Because the property is privately owned the implementation of LUCs is much more difficult and may not be feasible without consent of landowners.

9.3.3 Alternative 3: Land Use Controls; 100 Percent Surface and Six-inch Subsurface Clearance

This alternative consists of conducting a 100 percent surface and six-inch subsurface clearance over the entire MRS along with LUCs. LUCs would require that a 3Rs educational program be implemented to warn of the potential explosive hazards associated with the site. A LTM plan would be required to inspect LUCs and provide educational material on a periodic basis. In addition, the LTM plan will address the potential for MEC that may become exposed due to natural forces such as erosion.

The LUC and focused surface clearance alternative would be protective of human health and the environment through education of site risks and because it removes the direct contact pathway between potential receptors and MEC on the ground surface in areas most likely to be accessed by receptors. This alternative is effective in both the short- and long-term because it reduces the potential for human receptors to encounter MEC at the MRS. The completion of the removal action on the ground surface and in the subsurface would result in a significant reduction of MEC hazards. The surface clearance is

implementable using conventional surface clearance techniques and LUCs require no specialized equipment or personnel. UXO technicians will use handheld metal detectors to determine the presence of metallic anomalies and suspect UXO will be removed and disposed of on-site using demolition procedures. All MD will be inspected, certified, and shipped offsite for disposal. The MEC removal will be conducted by trained UXO technicians. Implementation of this alternative is problematic due to the high level of potential environmental disturbance and substantial vegetation removal required to complete a surface clearance over the entire MRS. The entirety of the MRS is on private property, making the implementation of LUCs difficult similarly to Alternative 2.

Due to limitations in detection technology and because 100 percent coverage will not be possible in all areas of the MRS, it is possible that some munitions may be missed. As part of Alternative 2, a 3Rs educational awareness program will be conducted as described in Section 9.1.2.

9.3.4 Alternative 4: 100 Percent Surface and Subsurface Clearance (Unlimited Use/Unrestricted Exposure)

Alternative 4 is similar to Alternative 3 for the Mine and Booby Trap Training Area MRS, except a subsurface clearance would be conducted over the entire MRS (100 percent) (with the exception of under existing structure, roads, buildings, paved areas, etc.) to a depth of 12 inches bgs, in conjunction with the surface removal, allowing unlimited use and unrestricted exposure for the property. The subsurface clearance will be completed to a specified depth. Based on munitions finds and current and anticipated future land use Alternative 4 provides for MEC to be removed from the subsurface to a depth of 12 inches bgs.

The UU/UE alternative would be protective of human health and the environment because it removes the direct contact pathway between potential receptors and MEC on the ground surface and from the subsurface. This alternative is effective in both the short- and long-term because it reduces the potential for human receptors to encounter MEC at the MRS. The completion of the surface and subsurface clearances would result in a significant reduction of MEC hazards. The clearances are implementable using conventional surface and subsurface clearance techniques. The detection and identification of anomalies attributable to MEC will be performed by specialists (geophysicists) experienced in the detection of buried munitions. These specialists will conduct DGM using a specialized metal detector that records the locations of buried metallic items and interpret the data to identify locations of subsurface MEC. In areas where DGM cannot be conducted, UXO technicians will use handheld metal detectors to determine the presence of underground metallic anomalies. Suspect UXO will be removed and disposed of on-site using demolition procedures. All MD will be inspected, certified, and shipped offsite for disposal. The MEC removal will be conducted by trained UXO technicians. Implementation of this alternative is problematic due to the high level of potential environmental disturbance and substantial vegetation removal required to complete a surface and subsurface clearance over the entire MRS. LUCs and five-year reviews would not be required as part of this alternative as risk associated with potential MEC would be reduced to an acceptable level.

10 COMPARATIVE ANALYSIS OF ALTERNATIVES

10.1 Evaluation Method

A detailed analysis was completed for the various remedial alternatives developed to address the potential MEC hazards at the Mine and Booby Trap Training Area MRS. The purpose of this detailed analysis was to evaluate and compare the range of remedial action alternatives against the baseline condition (no action) and each other to select one preferred alternative that was considered the most suitable to address the risks present. A detailed account of this analysis is provided in the FS for Camp Maxey (EOTI, 2014). A summary of this process is provided here.

The detailed analysis involved evaluating each identified remedial alternative against nine criteria, as defined by CERCLA. These nine criteria fall into three groups: threshold criteria, primary balancing criteria, and modifying criteria. A description and purpose of the three groups of criteria follows:

- **Threshold criteria** are requirements that each alternative must meet in order to be eligible for selection and include (a) overall protectiveness of human health and the environment and (b) compliance with ARARs.
- **Primary balancing criteria** are used to weigh major trade-offs among alternatives and include (a) long-term effectiveness and permanence, (b) reduction of toxicity, mobility, or volume of contaminants through treatment, (c) short term effectiveness, (d) implementability, and (e) cost
- **Modifying criteria** include (a) state/support agency acceptance and (b) community acceptance, and require review of the remedial alternatives by stakeholders. For this reason, while these criteria may be considered to the extent that information is available during the FS, they can only be fully considered after public comment is received on the Proposed Plan. In the final balancing of trade-offs between alternatives upon which the final remedy selection is based, modifying criteria are equally important as the balancing criteria.

The details of the nine evaluation criteria are explained further in Table 1 below. A summary of the evaluation of the threshold and primary balancing criteria, applied to the alternatives applicable to the Mine and Booby Trap Training Area MRS, is provided in Table 2 and the estimated costs to implement the alternatives are presented in Table 3. Further details regarding this evaluation are provided in Chapter 9 of the *Final RI/FS Report for the former Camp Maxey* (EOTI, 2014).

Table 1: Summary of Evaluation Criteria for Remedial Alternatives

Overall Protection of Human Health and the Environment addresses whether a remedial alternative will achieve adequate protection of human health and the environment and describes how MEC at the site will be eliminated, reduced, or controlled through treatment, engineering, and/or LUCs. Because there is not an established threshold for MEC hazard, the goal is to effectively minimize or eliminate the exposure pathway between the MEC and receptor.
Compliance with ARARs addresses whether a remedial alternative meets all applicable, appropriate, or relevant selected federal and state environmental statutes and regulations. To be acceptable, an alternative shall comply with ARARs or be covered by a waiver. Based on the results of the RI, risks from concentrations of MC to human health or ecological receptors at the former Camp Maxey MRSs are negligible. As such, ARARs for MC are not applicable. Substantive portions of the Resource Conservation and Recovery Act (RCRA) Disposal Requirements (40 CFR 264, Subpart X) may apply if, as part of a surface or subsurface clearance, munitions are consolidated for treatment, storage, or disposal. This ARAR would not be applicable for either the No Action Alternative or the stand-alone LUC Alternative as no munitions would be encountered during the remedial action.
Long-Term Effectiveness and Permanence addresses the ability of a remedial alternative to maintain reliable protection of human health and the environment over time. This criterion considers the magnitude of residual hazard, the adequacy of the response in limiting the hazard, and whether LUCs and long-term maintenance are required.
Reduction of Volume, or Removal, of MEC relates to the extent to which the remedial alternatives permanently reduce the volume of MEC and reduces the associated safety hazard. Factors for this criterion for MEC include the degree of permanence of the remedial action, the amount of MEC removed/demolished, and the type and quantity of MEC remaining.
Short-Term Effectiveness addresses the period of time needed to implement the remedy and any adverse impacts that may be posed to workers, the community, and the environment during implementation. MEC removal poses risks to workers and the public that are not associated with environmental contaminants that must be considered and controlled.
Implementability refers to the technical and administrative feasibility of implementing each Alternative and the availability of services and materials are addressed by this criterion. This criterion also considers the degree of coordination required by the regulatory agencies, successful implementation of the remedial action at similar sites, and research to realistically predict field implementability.
Cost addresses the capital costs, in addition to annual costs anticipated for implementation of the response action.
Regulatory Acceptance is used to evaluate the technical and administrative concerns of the regulatory community regarding the alternatives, including an assessment of the regulatory community's position and key concerns regarding the alternative, and comments on ARARs or the proposed use of waivers.
Community Acceptance includes an evaluation of the concerns of the public regarding the alternatives. It determines which component of the alternatives interested persons in the community support, have reservations about, or oppose.

Table 2: Detailed Analysis of Alternatives for Mine and Booby Trap Training Area MRS

Criteria		Alternative 1: No Action
Threshold Criteria	Overall Protection of Human Health and the Environment	This alternative is not protective of human health or the environment because it does not mitigate risk associated with the potential presence of MEC.
	Compliance with ARARs	No actions are associated with this alternative; therefore, no ARARs are identified.
Primary Balancing Criteria	Short-term Effectiveness	Does not meet short-term effectiveness requirements (does not remove or reduce exposure to MEC)
	Long-term Effectiveness	Does not meet long-term effectiveness requirements (does not remove or reduce exposure to MEC)
	Reduction of Toxicity, Mobility, Volume	Does not reduce toxicity, mobility, or volume because no remediation takes place.
	Implementability	Highly implementable because no remedial action occurs.
	Cost Estimate (Net Present Value [NPV])	No cost is associated with this alternative because no action would be taken.
Modifying Criteria	Regulatory and Community Acceptance	TCEQ does not concur with Alternative 1 as no actions are associated with this alternative to address hazards at the site. As described in Part 3 of this Decision Document, no comments pertaining to any of the alternatives were received during the public comment period.
Criteria		**Alternative 2: LUCs**
Threshold Criteria	Overall Protection of Human Health and the Environment	This alternative protects human health and the environment by educating potential receptors about the explosive hazards associated with MEC and by deterring unnecessary access to impacted areas.
	Compliance with ARARs	No ARARs are identified for this alternative. The only ARAR identified for the former Camp Maxey (RCRA Subpart X) is not applicable for this alternative as no MEC will be encountered and no consolidated demolition shots will be required.
Primary Balancing Criteria	Short-term Effectiveness	Offers short-term effectiveness by reducing the potential for human receptor interaction with MEC at the site because the risk would be reduced shortly after implementation of the LUCs and because the remedy does not increase risk to workers.
	Long-term Effectiveness	Offers long-term effectiveness by reducing the potential for human receptor interaction with MEC at the site. Statuary five-year reviews are required to ensure the remedy remains protective of human health and the environment.
	Reduction of Toxicity, Mobility, and Volume	Reduces the potential for human receptor exposure to MEC risks by education and determent. Does not reduce the toxicity, mobility, or volume of MEC.
	Implementability	Highly implementable because the monetary and environmental cost to implement is relatively low; services and materials are available; and specialized equipment and/or personnel are not required. The MRS is on private property making the implementation of signage difficult or even unfeasible.
	Cost Estimate (NPV)	Total cost is $272,000.
Modifying Criteria	Regulatory and Community Acceptance	TCEQ does not concur with Alternative 2 as deed restrictions are not included as a LUC (see Section 10.3). As described in Part 3 of this Decision Document, no comments pertaining to any of the alternatives were

		received during the public comment period.

Criteria		Alternative 3: LUCs; 100% Surface and Six-inch Subsurface Clearance
Threshold Criteria	Overall Protection of Human Health and the Environment	This alternative protects human health and the environment by removing MEC from the ground surface and from the subsurface over the entire MRS.
	Compliance with ARARs	This alternative will comply with ARARs by following RCRA Subpart X requirements when consolidating shots of MEC.
Primary Balancing Criteria	Short-term Effectiveness	Offers short-term effectiveness by reducing the potential for human receptor interaction with MEC because the risk would be reduced immediately following the MEC clearance. There is an increase in short-term risk to workers associated with the surface and subsurface clearances.
	Long-term Effectiveness	Offers greater long-term effectiveness by removing the source on the ground surface and from the subsurface; thereby, reducing the potential for human receptor interaction with MEC at the site. This alternative is considered permanent and statutory five-year reviews are not required.
	Reduction of Toxicity, Mobility, and Volume	Effective at reducing the volume of MEC on the ground surface and from the subsurface.
	Implementability	This alternative is implementable using conventional MEC clearance techniques and services and materials are available. Specially trained personnel are required for the MEC clearance. The MRS is on private property making the implementation of signage difficult or even unfeasible.
	Cost Estimate (NPV)	Total cost is $566,000.
Modifying Criteria	Regulatory and Community Acceptance	In response to the Final RI/FS Report, the State of Texas has stated, "…detection and removal methods are not 100-percent effective, therefore TCEQ cannot support unlimited use and unrestricted exposure as part of a final remedy." As described in Part 3 of this Decision Document, no comments pertaining to any of the alternatives were received during the public comment period.
Criteria		**Alternative 4: 100% Surface and Subsurface Clearance (12 Inches) (Unlimited Use/Unlimited Exposure)**
Threshold Criteria	Overall Protection of Human Health and the Environment	This alternative protects human health and the environment by removing MEC from the ground surface and from the subsurface over the entire MRS.
	Compliance with ARARs	This alternative will comply with ARARs by following RCRA Subpart X requirements when consolidating shots of MEC.
Primary Balancing Criteria	Short-term Effectiveness	Offers short-term effectiveness by reducing the potential for human receptor interaction with MEC because the risk would be reduced immediately following the MEC clearance. There is an increase in short-term risk to workers associated with the surface and subsurface clearances.
	Long-term Effectiveness	Offers greater long-term effectiveness by removing the source on the ground surface and from the subsurface; thereby,, reducing the potential for human receptor interaction with MEC at the site. This alternative is considered permanent and statutory five-year reviews are not required.
	Reduction of Toxicity, Mobility, and Volume	Effective at reducing the volume of MEC on the ground surface and from the subsurface.
	Implementability	This alternative is implementable using conventional MEC clearance techniques and services and materials are available. Specially trained personnel are required for the MEC clearance. The MRS is on private property making the implementation of signage difficult or even unfeasible.
	Cost Estimate (NPV)	Total cost is $617,000.

Modifying Criteria	Regulatory and Community Acceptance	In response to the Final RI/FS Report, the State of Texas has stated, "…detection and removal methods are not 100-percent effective, therefore TCEQ cannot support unlimited use and unrestricted exposure as part of a final remedy." As described in Part 3 of this Decision Document, no comments pertaining to any of the alternatives were received during the public comment period…

Table 3: Mine and Booby Trap Training Area Cost Analysis Table

Alternative	Cost[1]
Alternative 1: No Action	No Cost
Alternative 2: Land Use Controls (LUCs)	$272,000[2]
Alternative 3: LUCs; 100 Percent Surface and Six-inch Subsurface Clearance	$566,000[2]
Alternative 4: 100 Percent Surface and Subsurface Clearance (12 inches) (Unlimited Use/Unrestricted Exposure)	$617,000

Notes: [1]Cost are NPV
[2]Alternative 2 and 3 include costs for 30 years of five-year reviews.

10.2 Evaluation Summary

The four alternatives were evaluated in terms of the nine criteria (Table 1 above). Table 2 above summarizes the evaluation and identifies the most practicable solution for reducing the potential MEC exposure hazard at the MRS.

Alternative 1 – Alternative 1 must be ruled out for the Mine and Booby Trap Training Area MRS at Camp Maxey because it is ineffective. Alternative 1 provides no source reduction or reduction of future risk, and is therefore the least protective of human health and the environment. Alternative 1 provides no reduction of source area toxicity, mobility, or volume. Because no actions are required for Alternative 1, it is highly implementable, could be implemented immediately, and there would be no short-term risks associated with implementing it.

Alternative 2 – Alternative 2 is protective of human health and the environment and reduces risk associated with MEC hazards through LUCs. However, this alternative provides no source reduction or any reduction of source toxicity, mobility, or volume because no MEC would be removed. The LUCs associated with Alternative 2 are easily implementable from a technical perspective; however, the MRS is on private property making the implementation of signage difficult or even unfeasible. There would be no short-term risks associated with Alternative 2. Estimated costs associated with Alternative 2 are relatively low compared to the other evaluated alternatives ($272,000).

Alternative 3 – Alternative 3 is protective of human health and the environment and reduces risk associated with MEC hazards. A combination of LUCs and the 100 percent surface and six-inch subsurface clearances is effective at reducing risk of MEC exposure. Both the MEC source and its toxicity, mobility, and volume will be reduced on the ground surface and in the subsurface; however, potential MEC will remain on the surface in areas outside of the surface clearance footprint and in the subsurface. It is implementable, though trained and qualified UXO technicians and specialized equipment are required; however, these are both available. Implementation of the clearances is feasible because the level of environmental disturbance (i.e., vegetation removal) required is limited because much of the property is residential and free of dense vegetation. Although there are some short-term risks to workers and the environment associated with the removal,

they would be mitigated by best practices. Similarly to Alternative 3, the MRS is on private property making the implementation of signage difficult or even unfeasible. This alternative would be implemented relatively quickly, depending on availability of funding. Estimated costs associated with Alternative 3 are moderate compared to the other evaluated alternatives ($566,000).

Alternative 4 – Alternative 4 is also protective of human health and the environment relative to the removal of explosive hazards associated with MEC. A combination of surface and subsurface clearances throughout the entire MRS (100 percent) is very effective at reducing risk of MEC exposure. The MEC source and its toxicity, mobility, and volume will be reduced. It is implementable, though trained and qualified UXO technicians and specialized equipment are required. Although there are some short-term risks to workers and the environment associated with the removal, they would be mitigated by best practices. Estimated costs associated with Alternative 4 are moderate compared to the other evaluated alternatives ($617,000).

10.3 State Acceptance

TCEQ has requested that LUCs at the former Camp Maxey include the following, ”A legal instrument be placed in the property records… which indicates the limitations on or the conditions governing use of the property which ensures protection of human health and the environment (Texas Administrative Code §350.4(a)(47) as well as §350.11 (Subchapter F)).” In a letter dated August 17, 2017, TCEQ stated “Based on our review, the TCEQ approves the plans outlined in the Decision Documents and the USACE response to comments with some exceptions. Please proceed with actions outlined in the Decision Documents while noting the comments below…” The comments re-iterated TCEQ’s desire to have deed notices or restrictions placed on the property. USACE has no authority to implement legal instruments at FUDS; therefore, since the inclusion of the requested legal instrument is not implementable it is not included as part of any remedial alternative.

10.4 Community Acceptance

As described in Part 3 of this Decision Document, no comments pertaining to any of the alternatives were received during the public comment period. After the Decision Document is signed, USACE shall publish a notice of the availability of the Decision Document in *The Paris News* and make the Decision Document available for public inspection and copying at the Paris Public Library, 326 S. Main Street, Paris, Texas prior to the beginning of any remedial action.

11 PRINCIPAL THREAT WASTES

As discussed in the prior sections of this Decision Document, potential hazards from MEC were identified at the Mine and Booby Trap Training Area MRS. There are no materials constituting principal threats related to MC at the Mine and Booby Trap Training Area MRS.

12 SELECTED REMEDY

12.1 Rationale for the Selected Remedy

Based on the comparative analysis, the UU/UE alternative (Alternative 4: 100 Percent Surface and 12-inch Subsurface Clearance) is the selected remedy for the Mine and Booby Trap Training Area MRS because it offers an acceptable solution to controlling the low MEC risk to human receptors and allows for current use of the property as a residential area without extensive environmental disturbance. Additionally, as part of Alternative 4, LUCs, LTM, and five-year reviews will not be required following the clearance activities.

The completion of the remedial action would result in a significant reduction in hazards associated with MEC through 100 percent surface and subsurface clearances and provides benefits over other alternatives as MEC and munitions debris density is low and Alternative 4 can be implemented relatively quickly without the need for extensive vegetation removal and at a moderate cost. The estimated total cost for Alternative 4 at the Mine and Booby Trap Training Area MRS is $617,000.

12.2 Description of the Selected Remedy

As described above in Section 9.0, the selected remedy is a 100 percent surface clearance and 12-inch subsurface clearance in the Mine and Booby Trap Training Area MRS. LUCs are not required as part of this alternative and five-year reviews will not be conducted.

12.3 Cost Estimate for the Selected Remedy

The information in the cost estimate summary table below (Table 4) is based on the best available information regarding the anticipated scope of the selected remedy. The total estimated cost for the selected remedy is $617,000. Changes in this cost estimate are likely to accrue as a result of new information. Major changes may be documented in the form of a memorandum in the Administrative Record file, an Explanation of Significant Difference (ESD), or a Decision Document amendment. This is an order-of-magnitude cost estimate that is expected to be within +50 to -30 percent of the actual project cost.

12.4 Expected Outcomes of the Selected Remedy

Following the implementation of the selected remedy at the Mine and Booby Trap Training Area MRS, the land uses at the MRS will remain the same.

There are no socioeconomic or community revitalization impacts anticipated as a result of implementing the selected remedy, nor are there any significant expected environmental or ecological benefits.

Table 4: Cost Estimate Summary for the Selected Remedy

Alternative 4: 100 Percent Surface Clearance and 12-inch Subsurface Clearance	
Administrative Actions (Planning [Remedial Design] and Coordination) [1]	$110,000
Site Preparation and Clearance (Mobilization/Demobilization, Land Survey, Surface Clearance, Demolition and Scrap Management)[1]	$314,000
Site Closure[2]	$11,000
Implementation Costs (e.g., Administrative and Legal, Management, Reporting, etc.)[1/2]	$182,000
Total Estimated Cost	**$617,000**

Notes: [1]Capital Cost
[2]Present Value of Annual Costs

13 STATUTORY DETERMINATIONS

Based on the information currently available, the selected remedy for the Mine and Booby Trap Training Area MRS (100 percent surface and 12-inch subsurface clearance) is protective of human health and the environment and satisfies the statutory requirements of CERCLA §121(b) with regards to the former use of the MRS by the Army and DoD. The selected remedy is cost-effective and utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable. Substantive portions of the Resource Conservation and Recovery Act (RCRA) Disposal Requirements (40 CFR 264, Subpart X) may apply as an applicable or relevant and appropriate requirement (ARAR) if, as part of a surface or subsurface clearance, munitions are consolidated for treatment, storage, or disposal.

Because this remedy allows for unlimited use and unrestricted exposure at the MRS, a statutory five-year review will not be required. If new information arises concerning contamination conditions at the site or if land uses change beyond what has been assumed, the evaluation of remedial alternatives may need to be revisited.

14 DOCUMENTATION OF SIGNIFICANT CHANGES FROM PREFERRED ALTERNATIVE OF PROPOSED PLAN

The selected remedy described in this Decision Document (100 percent surface clearance and 12-inch subsurface clearance) is different from the alternative detailed in the *Final Proposed Plan for the former Camp Maxey* (EOTI, 2014b). Alternative 3 (LUCs; 100% Surface and Six-inch Subsurface Clearance) was the remedy put forth in the June 2014 Proposed Plan. Following review of the site risks, USACE chose to select the UU/UE alternative for the Mine and Booby Trap Training Area MRS. While Alternative 3 and the selected Alternative 4 are very similar, Alternative 4 provides for an additional level of protectiveness by completing the 12-inch subsurface clearance versus the six-inch subsurface clearance included in Alternative 3 for a relatively low increase in cost.

PART 3 - RESPONSIVENESS SUMMARY

1 Stakeholder Issues and Lead Agency Responses

1.1 Regulatory Concurrence and Comment

The *RI/FS Report for former Camp Maxey* (EOTI, 2014) and *Proposed Plan for former Camp Maxey* (EOTI, 2014b) were submitted to TCEQ for review and comment. TCEQ made one comment regarding the general implementation of LUCs at the former Camp Maxey. They comment and response are provided below:

Comment: "Land Use Controls: In addition to signage, training, and education, the State of Texas requires "A legal instrument be placed in the property records .... which indicates the limitations on or the conditions governing use of the property which ensures protection of human health and the environment (Texas Administrative Code §350-4(a)(47) as well as §350.11(Subchapter F)).

The purpose of the controls are to provide permanent notice of actual and/ or potential hazards associated with the property and to inform potential landowners and users of conditions to ensure protective property use.

These legal instruments range from deed notices, restrictive covenants, and equivalent zoning or government ordinance that would be functionally equivalent to a deed notice. Although the munitions constituents (MC) may be controlled on site, MEC will never be 100% certain of removal. More is needed to notify the public of the potential hazards of owning and using the property."

Response: "The TAC provisions require that a legal instrument in the form of a deed notice, Voluntary Cleanup Program Certificate of Completion, or restrictive covenant be placed in the appropriate property records. Some of the property at this site is under USACE control and we will ensure appropriate LUCs are in place for that property -these LUCs would not include deed restrictions; but, would be in keeping with USACE's federal landownership responsibilities. However, other property is in private ownership and USACE has no authority to place restrictions on that property. TAC 350.111 specifically requires landowner consent for the requested property restrictions. Moreover, the statute specifically states that, "restrictive covenants shall be executed only by the landowner". While TCEQ may have the regulatory authority to override a landowner, USACE does not.

Accordingly, USACE is unable to agree to your request to include TAC §350.11[1] (Subchapter F) in the FS as a proposed ARAR."

1.2 Public Comment

The USACE also made the Proposed Plan for the former Camp Maxey MRSs available for public comment between 17 June and 17 July 2014. This public comment period was announced through a notice placed in *The Paris News* newspaper (Attachment 1). No written comments were received during the public comment period.

In addition, a public meeting was held on 24 June 2014 at the Holiday Inn Express in Paris, Texas. At the public meeting, the results of the RI were summarized, the alternatives considered were described, and the alternative preferred by USACE was presented. Three people attended the 24 June 2014 public

meeting, and one question was asked during the presentation. The audio of the meeting was recorded, and a copy of the transcript is included in the Meeting Summary, which is part of the Administrative Record at the Paris Public Library, Paris, Texas.

Overview of Oral Questions at 24 June 2014 Public Meeting

Question (Assistant Police Chief): "If the Pat Mayes lake recedes a great amount around the areas that we are talking about during a drought and exposes more land around the area, are there plans to go in, if that happens, in the impact area?

Answer: There are no plans at this time for this effort. (But) If there is a need, it would be USACE Ft. Worth's call, then there could be a time critical removal action performed to remove munitions that were possibly uncovered during the drought. A time critical removal action is to be completed within six months.

REFERENCES

EOTI. 2014. Final Remedial Investigation and Feasibility Study Report, Former Camp Maxey Artillery Ranges, Lamar County, Texas. (April)

EOTI. 2014b. Final Proposed Plan, Former Camp Maxey Artillery Ranges, Lamar County, Texas. (June)

Brigance, Charles (Remediation Division, Texas Commission on Environmental Quality, Austin, Texas). Letter to Sarah Otto (Fort Worth District, United States Army Corps of Engineers, Fort Worth, Texas). 15 January 2014.

Fiehler, Scottie (Fort Worth District, United States Army of Engineers, Fort Worth, Texas). Letter to Charles Brigance (Remediation Division, Texas Commission on Environmental Quality, Austin, Texas). 19 May 2014.

Brigance, Charles (Remediation Division, Texas Commission on Environmental Quality, Austin, Texas). Letter to Sarah Otto (Fort Worth District, United States Army Corps of Engineers, Fort Worth, Texas). 5 June 2014.

ATTACHMENT 1

ANNOUNCEMENT OF PUBLIC NOTICE

Proof Of Publication

The Paris News • P.O. Box 1078 • Paris, Texas 75461

STATE OF TEXAS
COUNTY OF LAMAR

Before me, the undersigned authority, on this day personally appeared Relan Walker known to me, who being by me duly sworn on her oath deposes and says that she is the Business Manager of ***THE PARIS NEWS***, a newspaper published in Paris, Lamar County, Texas and that a copy of the within citation was published in said newspaper ***THE PARIS NEWS,*** such publication being on the following dates:

June 17, 2014

and a newspaper copy of this is hereto attached.

Relan Walker

Relan Walker

STATE OF TEXAS
COUNTY OF LAMAR

Before me, Cindy McGee, a notary public, on this day personally appeared Relan Walker, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that she executed the same for purposes and consideration therein expressed.

Given under my hand and seal of office.

This 23 day of June, A.D. 2014.

Cindy McGee

Cindy McGee

CINDY McGEE
NOTARY PUBLIC
COMMISSION EXPIRES:
08-26-2017

PUBLIC MEETING:

June 24, 2014 at 7:00 PM

The U. S. Army Corps of Engineers will hold a public meeting to explain the Proposed Plan and the alternatives presented in the Feasibility Study for the Former Camp Maxey. Verbal and written comments will be accepted during the meeting. The meeting will be held at the Holiday Inn Express, 3025 NE Loop 286, Paris, Texas at 7:00 p.m.

PUBLIC COMMENT PERIOD:

June 17 - July 17 2014

USACE will accept written comments on the Proposed Plan during the comment period. Written comments may be sent to:

USACE, Fort Worth District
ATTN: Ms. Sarah Otto
819 Taylor Street, Room 3A28
Fort Worth, Texas 76102

Comments must be postmarked no later than July 17, 2014.

ADMINISTRATIVE RECORD:

For more information on the site, see the Administrative Record at the:

Paris Public Library
326 S. Main Street
Paris, Texas 75460