



DEPARTMENT OF THE ARMY  
SAVANNAH DISTRICT, CORPS OF ENGINEERS  
100 W. OGLETHORPE AVENUE  
SAVANNAH, GEORGIA 31401-3604

REPLY TO  
ATTENTION OF:

22 JUL 2014

CESAS-PM-H

MEMORANDUM FOR Commander, South Atlantic Division, ATTN: CESAD-PD-M (Mike Riegert), Room 10M15, 60 Forsyth Street, SW, Atlanta, GA 30303-8801

SUBJECT: Defense Environmental Restoration Program - Formerly Used Defense Sites (DERP-FUDS) for the Former Conway Bombing and Gunnery Range, Horry County, South Carolina

1. References:

a. ER-200-3-1 (Formerly Used Defense Sites Program Policy), Appendix C, Decision Document Outlines, C-6.4 Staffing Procedures, 10 May 2004.

b. Final Decision Document for MRS-R04, Former Conway Bombing and Gunnery Range, Horry County, South Carolina.

2. In accordance with reference 1.a., reference 1.b. is hereby submitted to your office for your records. In accordance with reference 1.a., the signature authority for this Decision Document is the District Commander, CESAS, as the present worth cost estimate is less than \$2M.

3. The Decision Document has been reviewed by Office of Counsel and the EM-CX as required by ER 200-3-1, C-6.4.1. Comments and approvals are enclosed.

4. The lead regulatory agency, South Carolina Department of Health and Environmental Control, has reviewed the Decision Document and supports the recommended action.

5. If you have any questions regarding this Decision Document or need additional information, please contact Mrs Julie Hiscox at (912) 652-5363.

Encl



THOMAS J. TICKNER  
COL, EN  
Commanding



**FINAL  
DECISION DOCUMENT**

**MRS-R04**

**FORMER CONWAY BOMBING AND GUNNERY RANGE,  
HORRY COUNTY, SOUTH CAROLINA**

**FUDS Project No. I04SC002501**

**Prepared for:  
U.S. Army Engineering and Support Center, Huntsville  
and  
U.S. Army Corps of Engineers, Charleston District**

**Contract No. W912DY-04-D-0018  
Task Order: 0012**

**Prepared by:  
Sterling Operations, Inc.  
2229 Old Highway 95  
Lenoir City, Tennessee 37771**

**April 2014**

## **EXECUTIVE SUMMARY**

**ES.1** This Decision Document (DD) contains the Selected Remedy for the Munitions Response Site MRS-R04 (Range VII) (Project No. I04SC002501) of the Former Conway Bombing and Gunnery Range (BGR), Formerly Used Defense Site (FUDS) (Project No. I04SC002501). MRS-R04, a circular 649-acre bombing range, is one of the nine ranges that make up the Former Conway BGR in Horry County, South Carolina.

**ES.2** Although no unexploded ordnance (UXO) was discovered during any of the previous investigations of MRS-R04, a potential hazard exists for human interaction with residual UXO given that a 100% assurance of not encountering UXO is unachievable from a practical perspective. The Selected Remedy would reduce risk of exposure by educating the public as to the existence of the possible hazard source and the proper actions to be taken if suspected UXO are encountered.

**ES.3** Four potential response alternatives were developed, evaluated, and analyzed during the Feasibility Study (FS) and summarized again in the Proposed Plan (PP). The Preferred Alternative (Alternative 2) was presented to the public in the PP.

**ES.4** The Selected Remedy for this MRS includes Land Use Controls (LUCs). The LUC's are focused on education and awareness activities. Five-Year Reviews are a part of the remedy and will be implemented in accordance with Engineer Pamphlet (EP) 200-1-18 to determine if the Selected Remedy continues to effectively minimize explosive safety hazards and be protective of human health, safety, and the environment. The Five-Year Reviews also provide an opportunity to assess the applicability of new technology for addressing previous technical impracticability determinations.

**ES.5** The expected cost associated with the selected remedy for this MRS is \$254,000 and does not include costs associated with the Five-Year Reviews. Funding for this project is expected to occur in the fiscal year 2015.

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## **LIST OF ACRONYMS**

|        |                                                                      |
|--------|----------------------------------------------------------------------|
| AAB    | Army Air Base                                                        |
| AAF    | Army Air Field                                                       |
| ARAR   | Applicable or Relevant and Appropriate Requirements                  |
| ASR    | Archives Search Report                                               |
| BIP    | Blow-in-Place                                                        |
| BGR    | Bombing and Gunnery Range                                            |
| CERCLA | Comprehensive Environmental Response, Compensation and Liability Act |
| CESAC  | USACE, Charleston District                                           |
| CFR    | Code of Federal Regulations                                          |
| COC    | Contaminant of Concern                                               |
| COPC   | Chemical of Potential Concern                                        |
| CWM    | Chemical Warfare Materiel                                            |
| DD     | Decision Document                                                    |
| DERP   | Defense Environmental Restoration Program                            |
| DoD    | Department of Defense                                                |
| EE/CA  | Engineer Evaluation and Cost Analysis                                |
| EOD    | Explosive Ordnance Disposal                                          |
| EP     | Engineer Pamphlet                                                    |
| EPA    | U.S. Environmental Protection Agency                                 |
| ER     | Engineering Regulation                                               |
| ESA    | Endangered Species Act                                               |
| FS     | Feasibility Study                                                    |
| FUDS   | Formerly Used Defense Site                                           |
| LTM    | Long Term Management                                                 |
| LUC    | Land Use Control                                                     |
| SCDHEC | South Carolina Department of Health and Environmental Control        |
| MC     | Munitions Constituents                                               |
| MD     | Munitions Debris                                                     |
| MDAS   | Material Documented as Safe                                          |
| MDEH   | Material Documented as Explosive Hazard                              |
| MEC    | Munitions and Explosives of Concern                                  |
| MPPEH  | Material Potentially Presenting an Explosive Hazard                  |
| MRS    | Munitions Response Site                                              |
| NFA    | No Further Action                                                    |
| NCP    | National Oil and Hazardous Substances Pollution Contingency Plan     |
| O&M    | Operation and Maintenance                                            |

|       |                                              |
|-------|----------------------------------------------|
| PA    | Preliminary Assessment                       |
| PP    | Proposed Plan                                |
| RAIS  | Risk Assessment Information System           |
| RAO   | Remediation Action Objectives                |
| RI    | Remedial Investigation                       |
| RI/FS | Remedial Investigation/Feasibility Study     |
| ROE   | rights of entry                              |
| RSL   | Regional Screening Level                     |
| SARA  | Superfund Amendments and Reauthorization Act |
| TBC   | To Be Considered                             |
| TCRA  | Time Critical Removal Action                 |
| US    | United States                                |
| USACE | United States Corps of Engineers             |
| UE    | unrestricted exposure                        |
| UU    | unlimited use                                |
| UXO   | Unexploded Ordnance                          |

## **PART 1: THE DECLARATION**

### **1.1 PROJECT NAME AND LOCATION**

The Former Conway Bombing and Gunnery Range (BGR), Formerly Used Defense Site (FUDS) (FUDS Project No. I04SC002501) is located northwest of North Myrtle Beach, Horry County, South Carolina (Figure 1). Munitions Response Site-R04 (MRS-R04) (Range VII) (I04SC002501) is a primarily circular 649-acre bombing range in the northeast portion of the Former Conway BGR (Figure 2).

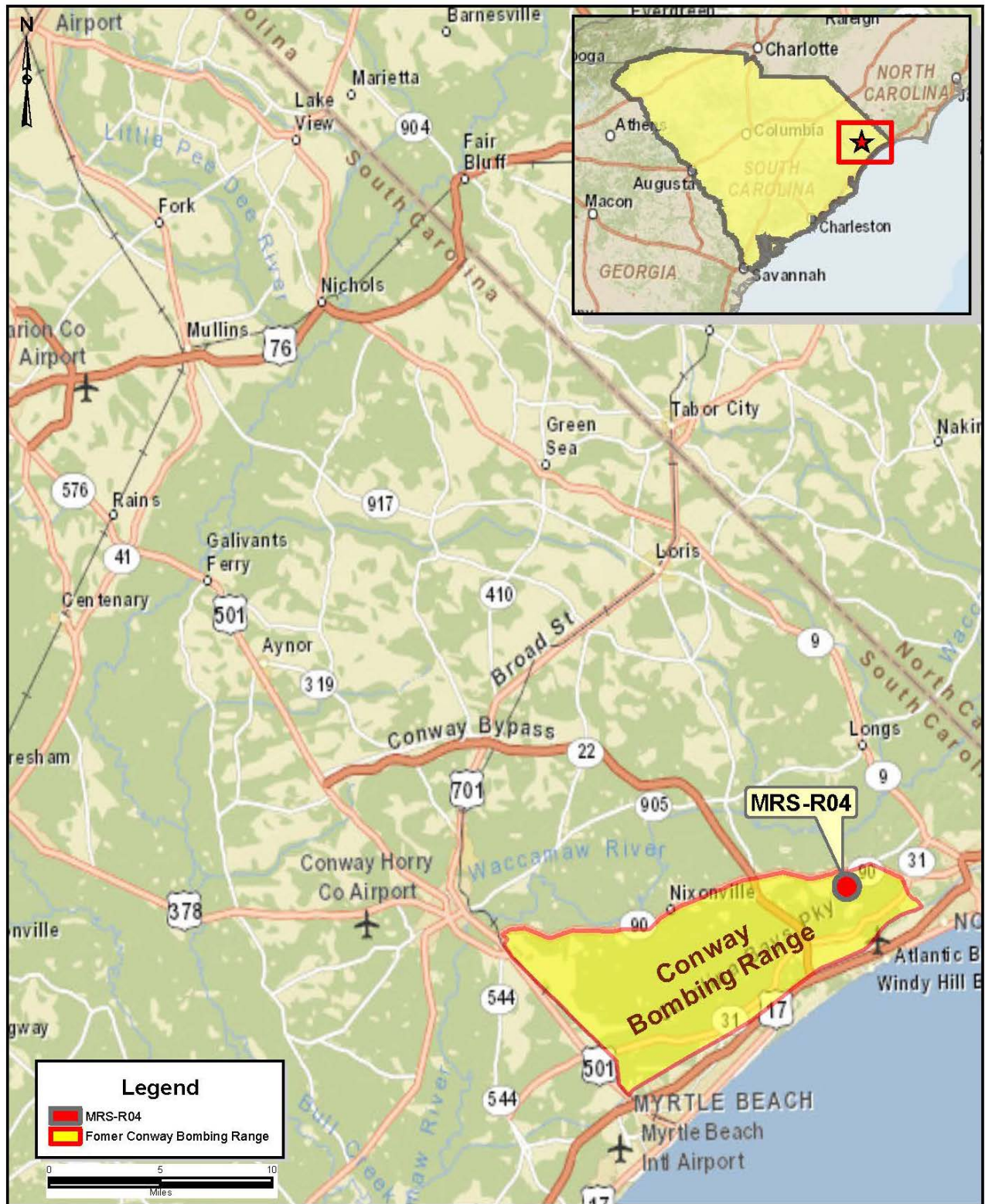
### **1.2 STATEMENT OF BASIS AND PURPOSE**

**1.2.1** This Decision Document (DD) is being presented by the United States Army Corps of Engineers (USACE) to describe the Department of Defense (DoD) selected remedy for the MRS-R04 of the Former Conway BGR FUDS in Horry County, South Carolina. The FUDS Charter designated the Army as the Executive Agent on behalf of the DoD. The Army is charged with meeting all applicable environmental restoration requirements at FUDS, regardless of which DoD component previously owned or used the property. The Secretary of the Army further delegated the program management and execution responsibility for FUDS to the USACE. The USACE is the lead agency for investigating, reporting, evaluating and implementing remedial actions at the Former Conway BGR.

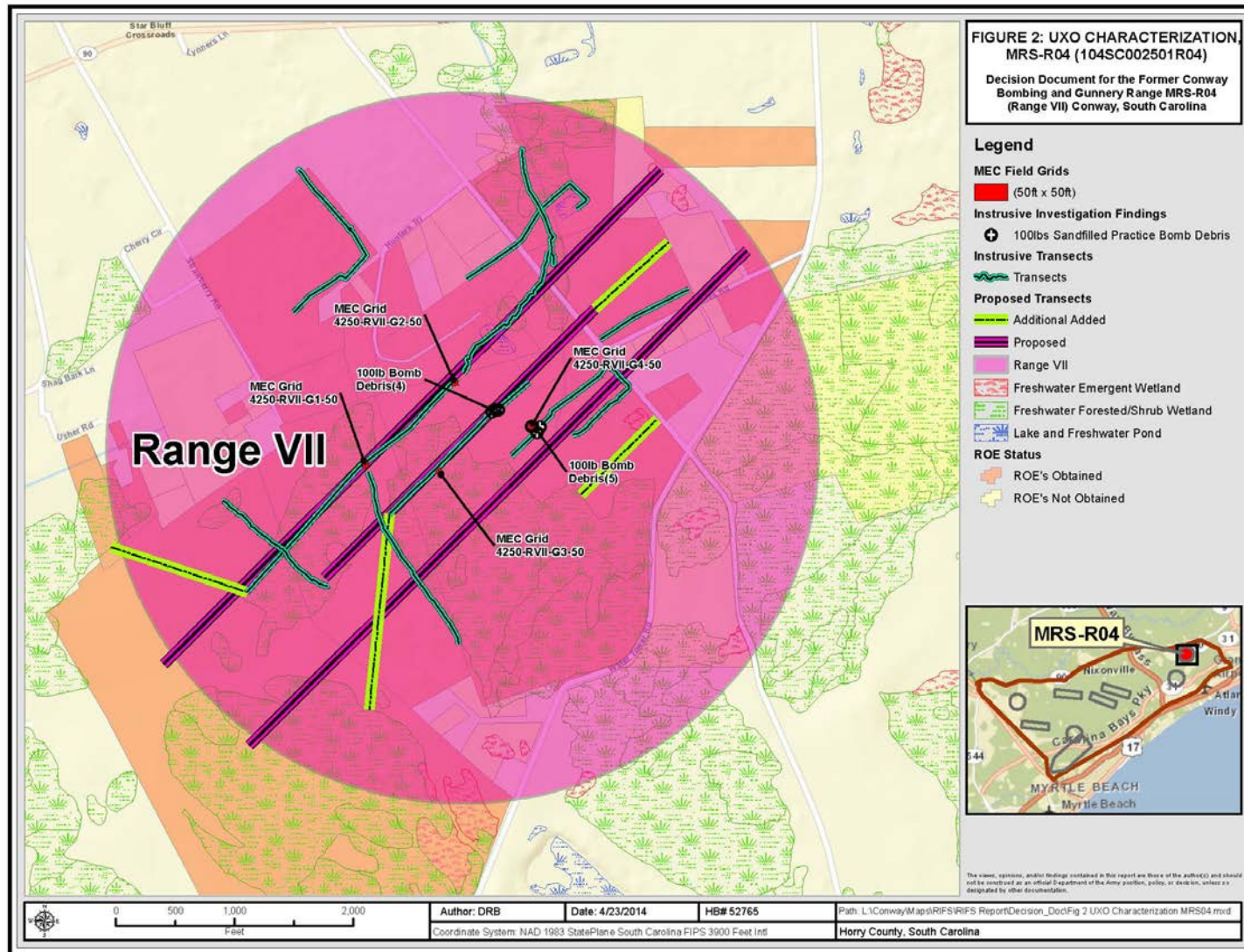
**1.2.2** This Decision Document is a requirement of 42 U.S. Code § 9617 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). It also follows the requirements of USACE's Engineering Regulation (ER) 200-3-1, *Formerly Used Defense Site Program Policy* and the US Environmental Protection Agency (EPA) guidance provided in EPA 540-R-98-031, *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents*.

**1.2.3** The remedy described in this Decision Document was selected in accordance with CERCLA, 42 US Code § 9601 *et seq.*, as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 Code of Federal Regulations (CFR) Part 300 *et seq.*, as amended. The Administrative Record provides supporting documentation for this decision.

**FIGURE 1: SITE LOCATION MAP**



**FIGURE 2: UXO CHARACTERIZATION MAP, MRS-R04**



### **1.3 ASSESSMENT OF THE PROJECT MRS**

An evaluation of site data indicates a relatively small potential for unexploded ordnance (UXO) hazards to exist, but there has been no confirmation that such hazards do exist at the Former Conway Bombing and Gunnery Range MRS-R04 (Range VII). Chapter 5 of the Remedial Investigation (RI) Report (EODT, 2012a) provides a more detailed discussion of the munitions and explosives of concern (MEC) and munitions constituent (MC) characterization at the Former Conway BGR. Historical documentation indicates that a variety of munitions were used throughout the entire Former Conway BGR. However, only 100-lb sand filled practice bombs, which contained small spotting charges, were discovered on Range VII. The response action selected in this Decision Document is necessary to protect the public health and welfare and the environment from the risks associated with the potential interactions with the residual UXO.

### **1.4 DESCRIPTION OF SELECTED REMEDY**

**1.4.1** The Selected Remedy for MRS-R04 is Land Use Controls (LUCs) with Five-Year Reviews (Alternative 2). LUCs consist of developing and distributing informational pamphlets; installing a kiosk in a prominent public area, posting signage, website hosting, and presenting educational awareness training classes, all of which to be referenced in the pamphlets.

**1.4.2** It has been decided to implement LUCs to provide the public with educational awareness to reduce the risk of hazardous interactions with UXO, if encountered. The degree of risk reduction is dependent upon the degree to which the population complies with the safeguards described in the provided educational information. The informational pamphlets will reference the repository location at the Horry County Library in Conway for the Administrative Record created for the Former Conway BGR.

### **1.5 STATUTORY DETERMINATIONS**

Based on the information currently available, the Selected Remedy for MRS-R04 satisfies the statutory requirements of CERCLA §121(b) and to the extent practicable, the NCP regarding former use by the DoD. The Selected Remedy is protective of human health and the environment and is cost-effective. There are no Applicable or Relevant and Appropriate Requirements (ARARs) associated with this remedy. Because this remedy will not allow unlimited use and unrestricted exposure due to the possibility of UXOs, a statutory review will be conducted within five years after initiation of remedial action to ensure that the remedy is, or will be, protective of human health and the environment.

### **1.6 DATA CERTIFICATION CHECKLIST**

**1.6.1** The following information is included in the Decision Summary section of this Decision Document:

- MEC, their respective concentrations, and their cleanup levels. (No MEC was discovered during the RI, therefore concentrations and cleanup levels could not be established, thus not addressed in this document.)
- Chemicals of Concern (COCs), their respective concentrations, baseline risk, cleanup levels, and the basis for these levels. (MC was determined to be of negligible risk, no COCs were identified, therefore COC remediation is not addressed in this document.)
- Baseline risk represented by the UXO explosive hazards. (Section 2.7.1)
- How MEC will be addressed. (Section 2.11)
- How MC will be addressed. (MC was determined to be of negligible risk, therefore MC remediation is not addressed in this document.)
- Current and reasonably anticipated future land use assumptions (Section 2.6) and current and potential future beneficial uses of groundwater used in the baseline risk assessment and Decision Document. (MC was determined to be of negligible risk, therefore impacts to current or future land use and groundwater are not addressed in this document.)
- Potential land and groundwater use that will be available at the site as a result of the selected remedy. (MC was determined to be of negligible risk, therefore impacts to potential land use and groundwater availability are not addressed in this document.)
- Estimated capital, Long Term Management (LTM), and the number of years over which the remedy cost estimates are projected. (Section 2.12.3).
- Key factor(s) that led to selecting the remedy at MRS-R04. (Section 2.10).

**1.6.2** Additional information can be found in the Administrative Record file for this site.

## **1.7 AUTHORIZING SIGNATURES**

This Decision Document presents the selected response action for the Munitions Response Site-R04 (MRS-R04) at the Former Conway BGR in Horry County, South Carolina. The USACE is the lead agency under the Defense Environmental Restoration Program (DERP) at the Former Conway BGR Formerly Used Defense Site (FUDS), and has developed this Decision Document consistent with the Comprehensive Environmental Response, Comprehensive and Liability Act (CERCLA), as amended, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), as amended. This Decision Document will be incorporated into the larger Administrative Record file for the Former Conway BGR, which is available for public view at the Horry County Memorial Library Conway, 801 Main Street, Conway, South Carolina. This Decision Document, presents the selected response action for MRS-R04 (Project number

**Decision Document for the  
Former Conway Bombing and Gunnery Range MRS-R04 (Range VII)  
Conway, South Carolina**

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I04SC002501R04), within the Former Conway BGR (FUDS Property Number I04SC002501) with a present worth cost estimate of \$254,000, and is approved by the undersigned, pursuant to Memorandum, DAIM-ZA, September 9, 2003, subject: Policies for Staffing and Approving Decision Documents, and to ER 200-3-1, FUDS Program Policy.

APPROVED:



THOMAS J. TICKNER

COL, EN

Commanding

## 2.2 PROJECT SITE HISTORY AND ENFORCEMENT ACTIVITIES

### 2.2.1 Site History

The Former Conway BGR was under military control from June 1940 until September 1948. Throughout the years of operation, several Army Air Fields (AAF) and Army Air Bases (AAB) utilized the Former BGR, employing various types of aircraft and practice ordnance. MRS-R04 (Range VII) is one of the nine FUDS ranges that comprised the Former Conway BGR. Between January 1943 and September 1948, leases of 1,823 acres were terminated. Myrtle Beach AAF closed in 1947 and was declared surplus in February 1948. Land was returned to International Paper Company (74,643 acres) after the leases were terminated.

### 2.2.2 Environmental Investigations

A series of studies have been completed by the USACE for the Former Conway BGR.

2.2.2.1 1994 - A Preliminary Assessment (PA) was performed by the USACE - Charleston District under the DERP/FUDS program. At that time, the "Findings and Determination of Eligibility" dated 4 January 1994, concluded that the 55,854 acre site located in Horry County, South Carolina, had been formerly used by the Army Air Corps. Therefore, the investigation concluded there is an eligible category of hazard under the DERP/FUDS program due to the fact that the site was used as a bombing and gunnery range by the Army Air Corps. A MEC site investigation was recommended.

2.2.2.2 1995 - USACE - Rock Island District, "Findings for the Former Conway Bombing and Gunnery Range" September 1995, presented the findings of a historical research project and was

## **PART 2: THE DECISION SUMMARY**

### **2.1 PROJECT NAME, LOCATION, AND BRIEF DESCRIPTION**

**2.1.1** The site addressed in this Decision Document is the MRS-R04 within the Former Conway BGR, FUDS Project No. I04SC002501. The USACE is the lead agency for investigating, reporting, evaluating, implementing, and funding remedial actions at the project site. The funding source for this remedy effort is DERP – FUDS MMRP. The South Carolina Department of Health and Environmental Control (SCDHEC) is the regulatory agency.

**2.1.2** The Former Conway BGR is located northwest of North Myrtle Beach, Horry County, South Carolina. MRS-R04 is a 649-acre circular bombing range (Figure 2). The land use in MRS-R04 is currently used for various purposes but primarily as: residential and agricultural activities and some industrial (quarry) operations, and is expected to remain the same in the future.

### **2.2 PROJECT SITE HISTORY AND ENFORCEMENT ACTIVITIES**

#### **2.2.1 Site History**

The Former Conway BGR was under military control from June 1940 until September 1948. Throughout the years of operation, several Army Air Fields (AAF) and Army Air Bases (AAB) utilized the Former BGR employing various types of aircraft and practice ordnances. MRS-R04 (Range VII) is one of the nine FUDS ranges that comprised the Former Conway BGR. Between January 1945 and September 1948, leases of 1,923 acres were terminated. Myrtle Beach AAF closed in 1947 and was declared surplus in February 1948. Land was returned to International Paper Company (34,685 acres) after the leases were terminated.

#### **2.2.2 Previous Investigations**

A series of studies have been completed by the USACE for the Former Conway BGR.

**2.2.2.1** 1994 - A Preliminary Assessment (PA) was performed by the USACE - Charleston District under the DERP/FUDS program. At that time, the “Findings and Determination of Eligibility,” dated 4 January 1994, concluded that the 55,854 acre site located in Horry County, South Carolina, had been formerly used by the Army Air Corps. Therefore, the investigation concluded there is an eligible category of hazard under the DERP/FUDS program due to the fact that the site was used as a bombing and gunnery range by the Army Air Corps. A MEC site investigation was recommended.

**2.2.2.2** 1995 - USACE - Rock Island District, “Findings for the Former Conway Bombing and Gunnery Range”, September 1995, presented the findings of a historical records search and site

inspection for OE presence at the Conway BGR. The final report, similar to a Preliminary Assessment, outlined the nature and degree of MEC recovered from the former ranges, as well as estimated depth at which ordnance may be present (by area), and probable end usage of the land. The Archives Search Report (ASR) concluded that the presence of ordnance is “confirmed” in Area A and Area C based on verifiable historical evidence and direct witness of ordnance items and is “potential” in Areas B, D, E, A-1, B-1, C-1, D-1, and E-1 based on inference from records and indirect witness accounts. Areas F and G were not considered to have any MEC based on a lack of “confirmed” or “potential” ordnance evidence. No historical recorded evidence was located to suggest the presence of Chemical Warfare Materiel (CWM) or radiological waste at the site (USACE, 1995).

**2.2.2.3** 1997 - Aerial photographs depicting site conditions in the early 1950s were reviewed as part of an archival records search and identified specific areas or locations for evidence of MEC. These areas were more thoroughly assessed during the Engineering Evaluation/Cost Analysis (EE/CA) investigation. The photographs were included in Appendix E of the “Final Engineering Evaluation/Cost Analysis Report” (Parsons Engineering Science, Inc., 2003). For MRS-R04, historical records indicate the range was used for Skip Bombing practice.

**2.2.2.4** 2003 - Parsons Engineering Science, Inc., performed an EE/CA investigation to characterize the presence of MEC and to perform risk management analysis alternatives for the 10 project areas identified in the ASR. The BGR was divided into three sectors with sub-areas. Range VII (MRS-R04) and its Safety Zone were designated as Areas D and D-1 respectfully and were part of Sector 3. The risk analysis concluded that “No OE or UXO was identified during the EE/CA investigation in Sector 3” and “the likelihood of any OE or UXO occurring at this site is minimal based on the findings of the EE/CA investigation”. Therefore, “since no UXO/OE was detected in Sector 3, the explosive safety risk is considered to be minimal”.

**2.2.2.5** 2010 - Remedial Investigation/Feasibility Study (RI/FS) - In 2010, EODT conducted a RI to determine the nature and extent of material potentially presenting an explosive hazard (MPPEH) and MC throughout the Former Conway BGR. Note that although the field work was completed in 2010, the final report was dated 2012.

### **2.2.3 Enforcement Actions**

To date, there have been no CERCLA-related enforcement activities at MRS-R04.

## **2.3 COMMUNITY PARTICIPATION**

**2.3.1** In an effort to keep the public informed, public meetings relating to activities within the Former Conway BGR were held on two occasions in 2002 and 2013. The public meetings were

designed to present the EE/CA and the RI/FS investigation schedules and results for the site as well as to receive comments and questions regarding investigation activities and future plans. Fact sheets were prepared, mailed to parcel owners prior to meetings, and distributed during public meetings.

**2.3.2** A news release was issued on Sunday November 17, 2013 and Monday November 18, 2013, to announce the completion of the final RI and FS Reports and introduction of the Proposed Plan (PP) and the placement of these documents in the Administrative Record files. A draft final version of the PP was issued on September 18, 2013. The Draft Final PP was placed in the local repository for the Administrative Record files. The repository is the Horry County Library, Conway, S.C. The residents near the Former Conway BGR and other interested parties were encouraged to review the Draft Final PP and submit comments during the November 21, 2013 Public Meeting. Public comments on the PP were accepted during a 30 day public review and comment period (i.e., November 17, - December 18, 2013). No responses were received.

## **2.4 SCOPE AND ROLE OF RESPONSE ACTION**

**2.4.1** Similar to many FUDS, the problems at the Conway BGR are complex. As a result, the USACE has organized the site into a total of nine MRSs to facilitate the remediation. The other MRSs within the Former Conway BGR have either been deemed that no further action is needed or will undergo further investigations. MRS-R04 (Range VII) is only one of the nine MRSs comprising the total Former Conway BGR.

**2.4.2** This Decision Document addresses any potential UXO and MC contamination within MRS-R04. When implemented, the remedy presented below will educate the public, thus reducing the risk of injury to the human populations. The remedy consists of:

- Implementing LUCs, which includes educational awareness through an education program targeting residents, utility workers; and visitors.

**2.4.3** The response action described in this Decision Document presents the final response action for this site and addresses residual explosive hazards that potentially remain at the MRS.

**2.4.4** The approval of this Decision Document will allow the USACE to implement the remedy.

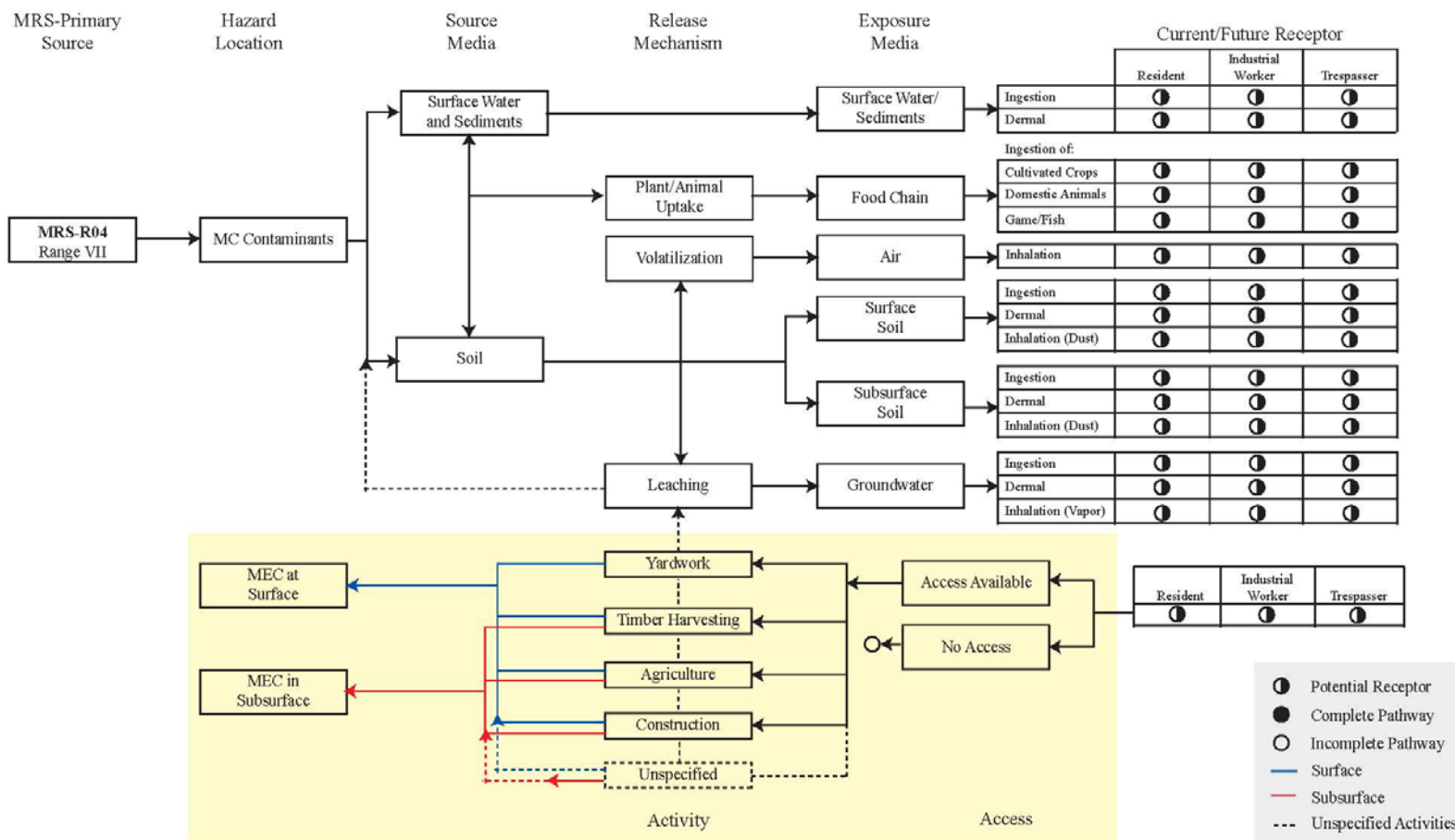
## **2.5 PROJECT SITE CHARACTERISTICS**

### **2.5.1 Conceptual Site Model**

The RI noted that the potential for residual UXO to be encountered exists at MRS-R04. If UXO is present and interaction occurs, the UXO exposure pathway is potentially complete. Although

significant MC risk does not exist, potential MC exposure routes remain and continue to be reflected in the conceptual site model (CSM). See Figure 3.

**FIGURE 3: REVISED CONCEPTUAL SITE MODEL, MRS-R04**



Note: MC was discovered during the field investigation. However, contaminant levels were below EPA RSLs. Subsequently, the Risk Assessment concluded that risks were negligible or insignificant.

### **2.5.2 Site Overview**

MRS-R04 is a 649-acre circular bombing range in the northeastern portion of the Former Conway BGR FUDS just northwest of North Myrtle Beach. MRS-R04 is owned by various private owners and should be considered as having an unlimited access. No major subsurface features have been discovered during the course of this RI/FS project. There are no known areas of archeological or historical importance within this MRS. The area is flat with large tracts of privately owned undeveloped land. There is a small quarry or surface mining operation near the western perimeter of the circular MRS. There are two manmade surface impoundments within the site boundaries. There are no discernible streams in this area, one major highway and some secondary roads, both paved and unpaved.

### **2.5.3 Suspected Sources**

The RI did not reveal any UXO within MRS-R04 (Range VII), with the exception of remnants of M38 100-lb sand filled practice bombs. The M-38 practice bombs did have black powder spotting charges designed to produce a small flame and puffs of smoke making it easier for spotters to see the actual impact location. The suspected explosive hazards sources are the aforementioned spotting charges.

### **2.5.4 Types of Contamination**

No COCs were identified as a result of the laboratory analyses of the Chemicals of Potential Concern (COPCs).

### **2.5.5 Sampling Strategy**

In accordance with the approved Work Plan, a transect methodology was used to search for MEC where rights of entry (ROEs) were acquired and where access was safe and practical. See Figure 2. Field investigation teams used hand held magnetometers to search for metallic anomalies within the transects. In addition to approximately 2.99 miles of transects, four 50 ft x 50 ft grids were investigated with the same instrumentation. The MC investigation and characterization efforts were biased towards those areas where MEC and/or munitions debris (MD) were concentrated. Surface soil, surface water, and sediment samples were collected. MC sampling was conducted 17 - 19 August 2010. The MEC investigations were conducted between 28 July and 1 September 2010.

### **2.5.6 Locations and Routes of Migration of Contamination**

Subsurface MEC or UXOs may be exposed during intrusive activities, e.g., logging, general area maintenance, etc. and natural or manmade erosion. MC contamination migration is not addressed due to the fact that there are no MC concerns within the MRS.

### **2.5.7 Site Specific Factors Affecting Response Actions**

There are no site specific physical factors that would adversely affect the implementation of the response actions at this MRS.

## **2.6 CURRENT AND POTENTIAL FUTURE LAND USES**

MRS-R04 consists of some residential tracts; agricultural; surface mining or quarry operations; and undeveloped acreage. Future land use is expected to remain the same in the foreseeable future.

## **2.7 SUMMARY OF PROJECT SITE HAZARDS AND RISKS**

### **2.7.1 Human Health Hazards**

The RI did not reveal any UXO within MRS-R04 (Range VII). However, remnants of 9 ea., M38 100-lb sand filled practice bombs were discovered. Therefore, additional residual UXO items may exist within MRS-R04. As previously mentioned, high order detonations are not the concern. The sand filled bombs are, as described, filled with sand, not high explosives. However, inappropriate handling of the black powder spotting charges can result in a variety of injuries, e.g., corneal abrasions, eye globe injuries, hand and digital avulsions, black powder tattooing, and 3<sup>rd</sup>, and 4<sup>th</sup> degree burns. The exposure route for UXO receptors is primarily direct contact as a result of some form of human intrusive activity and mishandling of the spotting charges.

### **2.7.2 Human Health and Ecological Risks**

**2.7.2.1** Samples from various media types (surface soil, surface water, and sediment) were collected and analyzed by EODT in the same general locations where MEC/MD were discovered during previous removal activities and current and previous investigations. Soil samples were analyzed for metals, explosives, and perchlorates. The analytical results were compared to the USEPA Regional Screening Levels (RSLs) for residential sites and the Risk Assessment Information System (RAIS) for ecological benchmarks for each constituent (EODT, 2012a).

**2.7.2.2** The RI concluded (in a separate report) that no MC associated analytes of interest are present at levels which represent risks to ecological or human health. Therefore, no unacceptable risks exist as a result of COC contamination at those areas investigated during the RI. Subsequently, MC contamination is not discussed in the remainder of this Decision Document.

### **2.7.3 Basis for Response Action**

Due to the potential presence of UXO within the Former Conway BGR, MRS-R04, the response action selected in this Decision Document is necessary to protect the public health or welfare or the environment from potential interaction with UXO within MRS-R04.

## **2.8 REMEDIAL ACTION OBJECTIVES**

The overall remediation goal for the Former Conway BGR FUDS is to minimize the health and safety hazards to the public, residents, and workers due to potential exposure to residual UXO. The MRS-specific Remedial Action Objective (RAO) is to reduce exposure to residual explosive hazards through community MEC awareness training and distribution of informational documents. LUCs will inform the landowner and community of the potential hazard and provide education with regard to proper safety and reporting procedures in the event that MEC is encountered. In developing the RAO, current and future land use was taken into account.

## **2.9 DESCRIPTION OF ALTERNATIVES**

Four remedial alternatives were evaluated during the FS for MRS-R04. A description of each of the four alternatives developed for consideration is presented below.

### **2.9.1 Remedy Components**

#### **2.9.1.1 Alternative 1: No Further Action**

No Further Action (NFA) indicates that a remedial action will not be performed to reduce the potential safety hazards posed by UXO. Evaluation of this alternative is required and used as a baseline for comparison with the other alternatives.

Capital Cost: \$0

Long Term Maintenance Cost: \$0

Five-Year Review Costs for 30-years: \$0

#### **2.9.1.2 Alternative 2: Land Use Controls and Five-Year Reviews**

This alternative is comprised of signage, informational pamphlets, website hosting, kiosk display, and educational awareness training. The planning commission and utility companies within the former Conway BGR area would receive informational pamphlets in the mail. A kiosk would be installed in the park or other common areas with detailed information on UXO recognition and appropriate defensive actions to be taken. The educational pamphlets have the goal of modifying behavior to reduce the risk of exposure and reduce the impact if exposure occurs. In addition, letters and fact sheets would be sent to residents and neighboring landowners. The pamphlets would also identify where to find more information, including the internet sites, informational repositories and government points of contact. Five-Year Reviews would be conducted in accordance with established CERCLA and USACE guidelines to determine if the response action continues to minimize explosive safety hazards and risks and protect human health, safety, and the environment. The LUCs do not remove or restrict access to potential residual UXO; however, it keeps the public and landowners knowledgeable of potential future risks. Therefore, a complete exposure pathway may still exist. Implementation of this

alternative is compatible with both the current and projected future land use within former Conway BGR MRS area. This alternative employs current standard approaches and does not rely on innovative technology for implementation.

Total Cost for LUCs: \$254,000

Capital or Initial Cost: \$27,000

Long Term Maintenance Cost: \$77,400

Five-Year Reviews for 30 years: \$150,000

### **2.9.1.3 Alternative 3: Surface Clearance, with LUCs and Five-Year Reviews**

A UXO surface clearance would be conducted over accessible areas that have not already had a removal operations conducted under previous actions. Surveys designed to detect metallic anomalies would be conducted over the entire accessible area. Metallic anomalies would be removed only from the ground surface. If any discovered UXO must be destroyed onsite, evacuation and protective actions will be required. All MD will be inspected, certified, and shipped offsite for disposal. As part of this alternative, LUCs similar to those described under Alternative 2, would provide additional protection by increasing public awareness concerning munitions hazards at the site. In addition, notices would be published and meetings held to inform residents of UXO clearance activities and to help plan for evacuations if applicable. Five-Year Reviews would be conducted to determine if the response action continues to minimize explosives safety hazards and risks and protect human health, safety, and the environment.

This alternative uses a combination of measures that reduce the source of the UXO hazards and modify behavior to avoid the residual hazards and to take the correct actions if these hazards are encountered. Implementation of this may be in conflict with the current and projected future land use due to the required vegetation removal operations that are an integral part of UXO clearance operations. This alternative employs current standard approaches and does not rely on innovative technology for implementation.

Total Costs for UXO (surface) clearance: \$3,004,400

Includes LUCs Capital Cost: \$27,000

Surface Clearance: \$2,750,000

Long Term Maintenance Cost: \$77,400

Five-Year Reviews: \$150,000

### **2.9.1.4 Alternative 4: Subsurface Removal with Surface Clearance, Land Use Controls (LUCs) and Five-Year Reviews**

A UXO removal would be conducted in areas that have not already had a removal operation

conducted under previous actions. Subsurface removal operations would be conducted across the entire MRS using detectors capable of locating potential MEC below the ground surface. Metallic anomalies would be removed to a depth which minimizes the UXO explosive hazards to people; that is, the depth of removal would be to the depth that UXO occurs onsite, or to the depth that people are reasonably expected to excavate for construction, mining or other land use, whichever is shallower. For MRS-R04, the depth of potential excavation is assumed to be approximately 8', which is associated with the construction of water and sewer lines and in-ground swimming pools for residential development. As UXO has not been confirmed to be present in the MRS, there is no conclusive depth of MEC onsite. For the purposes of this plan, an assumed depth of MEC of 4' was used, based on similar ranges where intact 100-lb practice bombs were found. If any discovered UXO must be destroyed onsite, evacuation and protective actions will be required. All MD will be inspected, certified, and shipped offsite for disposal. As part of this alternative, LUCs, similar to that described under Alternative 2, would provide additional protection by increasing public awareness concerning munitions hazards at the site. In addition, notices would be published and meetings held to inform residents within the vicinity of removal activities and to help plan for evacuations where needed. Five-Year Reviews would be conducted to determine if the response action continues to minimize explosives safety hazards and risks and protect human health, safety, and the environment.

This alternative uses a combination of measures that reduce the source of the UXO hazards and modify behavior to avoid the residual hazards and to take the correct actions if these hazards are encountered. Implementation of this may be in conflict with the current and projected future land use due to the required vegetation removal operations that are in integral part of UXO clearance operations. This alternative employs current standard approaches and does not rely on innovative technology for implementation.

Total Costs for UXO removal: \$4,800,000  
Includes LUCs Capital Cost: \$27,000  
Surface and Subsurface Clearance: \$4,550,000  
Long Term Maintenance Cost: \$77,400  
Five-Year Reviews: \$150,000

## **2.9.2 Common Elements and Distinguishing Features of Each Alternative**

### **2.9.2.1 NFA (Alternative 1)**

Alternative 1 does not provide any additional protection of human health or the environment as MEC contamination remains in the impacted areas. This alternative does not physically remove any MEC items from the MRS. Explosive hazard associated with UXO will remain.

#### **2.9.2.2 Land Use Controls and Five-Year Reviews (Alternative 2)**

Alternative 2, like the NFA, does not remove the MEC contamination; although it does reduce the likelihood of careless receptor interaction. This alternative is not effective in terms of reducing toxicity, mobility, and volume through treatment/removal. There is no guarantee that all potential receptors will be contacted. Also, there is no guarantee that those receptors that are educated will adhere to the information provided. There are no Applicable or Relevant and Appropriate Requirements (ARARs) associated with this alternative. The alternative could be implemented relatively soon after a contract award and is cost effective.

#### **2.9.2.3 Surface Clearance, with Land Use Controls and Five-Year Reviews (Alternative 3)**

This alternative would effectively remove surface MEC contamination at those specific areas within the MRS. Durations will vary according to size of areas to be cleared but, would probably range between a few weeks to few months. For typical surface clearance operations, brush cutting is expected. Once this alternative has been completely implemented, full use of the land is expected, with the exception of unrestrictive intrusive activities. Implementation of this alternative will provide long-term effectiveness regarding possible exposure to surface UXO. The effectiveness of this alternative can be impacted by ROEs and limited access to certain areas based on safety and practicality. However, subsurface UXO remains. If consolidated shots occur during the removal action, RCRA, Subpart X may apply.

#### **2.9.2.4 MPPEH Removal (surface and subsurface) with Land Use Controls (LUCs), and Five-Year Reviews (Alternative 4)**

Alternative 4 would effectively remove MEC contamination from specific areas within this MRS, however at a higher cost than the other alternatives. MPPEH removal duration in this MRS could last from several weeks to several months. In-place disposal of material documented as an explosives hazard (MDEH), may by detonation (Blow-in-Place) or consolidation shots, introduce additional soil contamination which may need additional remediation. The effectiveness of this alternative can be impacted by ROEs and limited access to certain areas based on safety and practicality. Once complete, cleanup levels would have been achieved. As with the other removal operations, past and future, 100% elimination of UXO is not possible. Implementation of this alternative will provide long-term effectiveness through the process of Five-Year Reviews for 30 years. If consolidated shots occur during the removal action, RCRA, Subpart X may apply.

### **2.9.3 Expected Outcomes of Each Alternative**

#### **2.9.3.1 No Further Action (Alternative 1)**

Alternative 1 does not provide long-term protection of human health and environment, as it does not reduce potential risks or hazards or afford long-term protection. The availability of land and land use within the MRS would not change from current condition. Explosive hazard associated with the area will remain the same.

#### **2.9.3.2 Land Use Controls and Five-Year Reviews (Alternative 2)**

Alternative 2 would benefit the local residents and visitors to the area by informing them of what UXO hazards could be present. Risk would be reduced by eliminating inappropriate interaction with MEC items, if discovered. The availability of land within the MRS would not change from current condition. Land use would potentially remain the same. Implementation of this alternative would have little to no impact on, or interference with, current or near future land use activities.

#### **2.9.3.3 Surface Clearance, Land Use Controls, and Five-Year Reviews (Alternative 3)**

Assuming that UXO items are discovered as a result of the removal activity, there will be a reduction in volume of UXO through their removal. Utility employees and visitors to the MRS would benefit knowing that areas would have a reduced level of risk associated with UXO explosive hazards. Land use would potentially remain the same. The availability of land within the MRS would be temporarily impacted during clearance operations. However, full use of the property will be possible as soon as operations are completed. Implementation of this alternative would require coordination with and cooperation from the landowners. Access to both private and public property parcels may be temporarily disrupted.

#### **2.9.3.4 Subsurface Removal with Surface Clearance, Land Use Controls and Five-Year Reviews (Alternative 4)**

Implementing this alternative would require coordination with individual parcel owners throughout the field operations and may have a minor disruption to access or use of specific areas of the property. Assuming that UXO items are discovered as a result of the removal activity, there will be a reduction in volume of UXO through their removal. However, full use of the property would be possible as soon as operations are completed. Utility employees and visitors of the MRS would benefit knowing that areas would have a reduced level of risk associated with UXO explosive hazards.

## **2.10 COMPARATIVE ANALYSIS OF ALTERNATIVES**

**2.10.1** The rationale for selecting the Preferred Alternative was based on nine criteria used to evaluate and compare the alternatives. The nine criteria, summarized in Table 1, fall into three

groups: threshold criteria, primary balancing criteria, and modifying criteria. A description and purpose of the three groups follows:

- Threshold criteria are requirements that each alternative must meet in order to be eligible for selection.
- Primary balancing criteria are used to weigh major trade-offs among alternatives.
- Modifying criteria may be considered to the extent that information is available during the FS, but can be fully considered only after public comment is received on the PP. In the final balancing of trade-offs between alternatives upon which the final remedy selection is based, modifying criteria are of equal importance to the balancing criteria.

**TABLE 1: EVALUATION CRITERIA FOR SUPERFUND REMEDIAL  
ALTERNATIVES**

|                                           |                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Threshold<br/>Criteria</b>             | Overall Protectiveness of Human Health and the Environment determine whether an alternative eliminates, reduces, or controls threats to public safety and the environment through institutional controls, engineering controls, or treatment.                                                   |
|                                           | Compliance with ARARs and issues to be considered evaluates whether the alternative meets Federal and State environmental statutes, regulations, and other requirements that pertain to the site, or whether a waiver is justified.                                                             |
| <b>Primary<br/>Balancing<br/>Criteria</b> | Long-term Effectiveness and Permanence considers the ability of an alternative to maintain protection of human health and the environment over time.                                                                                                                                            |
|                                           | Reduction of Mobility or Volume of Contaminants through treatment evaluates an alternative's use of treatment to reduce the harmful effects of principal contaminants, their ability to move in the environment, and the amount of contamination present.                                       |
|                                           | Short-term Effectiveness considers the length of time needed to implement an alternative and the risks and hazards the alternative poses to workers, residents, and the environment during implementation.                                                                                      |
|                                           | Implementability considers the technical and administrative feasibility of implementing the alternative, including factors such as the relative availability of goods and services.                                                                                                             |
|                                           | Cost includes estimated capital and annual operations and maintenance costs, as well as present worth cost. Present worth cost is the total cost of an alternative over time in terms of today's dollar value. Cost estimates are expected to be accurate within a range of +50 to -30 percent. |
| <b>Modifying<br/>Criteria</b>             | State/Support Agency Acceptance considers whether the State agrees with the analyses and recommendations, as described in the RI/FS and Proposed Plan.                                                                                                                                          |
|                                           | Community Acceptance considers whether the local community agrees with analyses and preferred alternative. Comments received on the Proposed Plan are an important indicator of community acceptance.                                                                                           |

**2.10.2** Table 2 presents an evaluation of the alternatives based upon the nine criteria presented above.

**TABLE 2: EVALUATION OF REMEDIAL ALTERNATIVES**

| <b>Criteria</b>                           |                                                               | <b>Alternative 1<br/>No Further Action</b>                                                                                                                                             | <b>Alternative 2<br/>Land Use Controls and Five-<br/>Year Reviews</b>                                                                                                                                                                                       | <b>Alternative 3<br/>Surface Clearance; Land Use<br/>Controls and Five-Year Reviews</b>                                                                                                                                                                                                         | <b>Alternative 4<br/>Subsurface Removal, with<br/>Surface Clearance with Land<br/>Use Controls, and Five-Year<br/>Reviews</b>                                                                                                  |
|-------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Threshold<br/>Criteria</b>             | <b>Protectiveness</b>                                         | Establishes a baseline evaluation of the MRS. No source reduction. No reduction of future risks or hazards. This Alternative does not meet the threshold criterion for protectiveness. | No source reduction. However, provides a level of risk reduction based on behavior modification resulting from education and information concerning interaction with UXO, thus reducing risk. This Alternative meets the protectiveness threshold criteria. | Provides protectiveness by removing surface sources, thus eliminating interaction with those MEC items. Implementation of LUCs provides additional risk reduction as stated in Alternative 2. This Alternative meets the protectiveness threshold criteria.                                     | This Alternative results in a significant source reduction within the MRS. Implementation of LUCs provides additional risk reduction as stated in Alternative 2. This Alternative meets the protectiveness threshold criteria. |
|                                           | <b>ARAR/TBC<sup>1</sup><br/>Compliance</b>                    | No ARARs associated with the alternative.                                                                                                                                              | No ARARs associated with the alternative.                                                                                                                                                                                                                   | If Blow-in-Place (BIP) or consolidated shots are utilized as a disposal method, RCRA, Subpart X may apply.                                                                                                                                                                                      | If BIPs or consolidated shots are utilized as a disposal method, RCRA, Subpart X may apply.                                                                                                                                    |
| <b>Primary<br/>Balancing<br/>Criteria</b> | <b>Effectiveness<br/>and<br/>Permanence</b>                   | No UXO-related hazard reduction and no long-term effectiveness.                                                                                                                        | No reduction of UXO hazards, but can be effective as behavior modification by reducing inappropriate receptor interaction. Effectiveness reviewed and updated/ revised over time.                                                                           | Effective minimal because of hazard reduction and reduced receptor interaction with UXO removal only on the surface and behavior modification with appropriate response reducing possible receptor interactions of UXO. Effectiveness reviewed and updated/revised over time results permanent. | Effective because of hazard reduction and reduced receptor interaction with UXO removal and educational awareness training. Results permanent.                                                                                 |
|                                           | <b>Reduction of<br/>Toxicity,<br/>Mobility, or<br/>Volume</b> | No reduction of source.                                                                                                                                                                | No reduction of source.                                                                                                                                                                                                                                     | Reduction in surface source only.                                                                                                                                                                                                                                                               | Significant reduction in total (surface and subsurface) source. UXO hazards are removed from the accessible areas of the site.                                                                                                 |
|                                           | <b>Short-term<br/>Effectiveness</b>                           | No short-term impacts on workers or community.                                                                                                                                         | Any intrusive work (post holes for signage, kiosk construction, if implemented) within a former impact area, presents a risk, however slight.                                                                                                               | Surface clearance and education reduce inappropriate receptor interaction prior to surface clearance work being completed.                                                                                                                                                                      | Land use restrictions and education reduce receptor interaction prior to removal work being completed.                                                                                                                         |

**Decision Document for the  
Former Conway Bombing and Gunnery Range MRS-R04 (Range VII)  
Conway, South Carolina**

| Criteria                  |                                         | Alternative 1<br>No Further Action                                                                                                                                                                                                                              | Alternative 2<br>Land Use Controls and Five-<br>Year Reviews                                                                                                   | Alternative 3<br>Surface Clearance; Land Use<br>Controls and Five-Year Reviews                             | Alternative 4<br>Subsurface Removal, with<br>Surface Clearance with Land<br>Use Controls, and Five-Year<br>Reviews |
|---------------------------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
|                           | <b>Implementability</b>                 | Readily implemented. No action required.                                                                                                                                                                                                                        | Kiosk can be installed in park or other common use areas. Updates and maintenance are implementable.                                                           | Similar operations were conducted during the Time Critical Removal Action (TCRA) and EE/CA. Implementable. | Similar operations were conducted during the TCRA and EE/CA. Implementable.                                        |
|                           | <b>Cost</b>                             | \$0                                                                                                                                                                                                                                                             | \$254,000                                                                                                                                                      | \$3,000,000                                                                                                | \$4,800,000                                                                                                        |
|                           |                                         | No cost.                                                                                                                                                                                                                                                        | Comparatively little cost associated with development of kiosk, educational awareness training classes, and dissemination of education materials for 30 years. | Costs high but justifiable for locations with significant UXO hazards. O&M Costs developed for 30 years.   | Costs high but justifiable for locations with significant UXO hazards. O&M Costs developed for 30 years.           |
| <b>Modifying Criteria</b> | <b>State/Support Agency Acceptance:</b> | SCDHEC has provided input and regulatory over-site to the RI/FS investigation and concurs with the Selected Remedy.                                                                                                                                             |                                                                                                                                                                |                                                                                                            |                                                                                                                    |
|                           | <b>Community Acceptance:</b>            | Community acceptance of the preferred alternative was evaluated after the public comment period ended. There were no comments submitted concerning the implementation of Alternative 2, <i>LUCs and Five-Year Reviews</i> in the area ensuring public awareness |                                                                                                                                                                |                                                                                                            |                                                                                                                    |

Note: Shaded box indicates the most practicable solutions in reducing the UXO exposure hazard at a site, e.g. the preferred alternative.

<sup>1</sup>TBC = To Be Considered

## **2.11 PRINCIPAL UXO ISSUES**

**2.11.1** Potential hazards as related to residual UXO can be seen in Figure 2. The locations and dispersion pattern of the expended sand filled practice bombs within the MRS are also shown. There have been no other MEC, UXO or MD discoveries in this MRS. Occasionally, UXO can be exposed through erosion either by natural or manmade forces for example off road vehicles, etc.

**2.11.2** Based on the data compiled from previous investigations, MRS-R04 does have a low potential for UXO explosive hazards, thus potentially complete exposure pathways.

## **2.12 SELECTED REMEDY**

### **2.12.1 Summary of the Rationale for the Selected Remedy**

Alternative 2 was recommended for this MRS based on the 2002/2003 EE/CA and the 2012 RI/FS of Conway BGR. The data indicates a low potential for residual UXO.

### **2.12.2 Detailed Description of the Selected Remedy**

**2.12.2.1** Alternative 2 uses a combination of activities to minimize receptor interaction with UXO. The LUCs consist of distributed pamphlets, a kiosk constructed in a prominent public location in the vicinity of the MRS, signage posted where permissible, and training for selected groups (utility workers) and the public. Pamphlets would be printed to include the library repository location and instructions of what to do if UXO is encountered. Signs would warn visitors about the potential of possible buried munitions in the area. The activities consist of providing educational awareness.

**2.12.2.2** LUCs would result in educational awareness to the human receptor interaction and the possibility of reducing exposure to UXO as described in Section 2.9, Alternative 2.

### **2.12.3 Cost Estimate for the Selected Remedy**

The information in the cost estimate summary table below is based on the best available information regarding the anticipated scope of the remedial alternative. Changes in the cost element are likely to occur as a result of new information. Major changes may be documented in the form of a memorandum in the Administrative Record file 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.

**TABLE 3: COST ESTIMATE FOR ALTERNATIVE 2 (MRS-R04)**

| <b>Year</b>  | <b>Capital Cost (\$)</b> | <b>Annual O&amp;M Cost (\$)</b> | <b>Periodic Cost (\$) Training Class and 5 Year Review</b> | <b>Total Cost + 0% Tax (\$)</b> |
|--------------|--------------------------|---------------------------------|------------------------------------------------------------|---------------------------------|
| 0            | \$26,700                 |                                 |                                                            | \$26,700                        |
| 1            |                          | \$2,670                         |                                                            | \$2,670                         |
| 2            |                          | \$2,670                         |                                                            | \$2,670                         |
| 3            |                          | \$2,670                         |                                                            | \$2,670                         |
| 4            |                          | \$2,670                         |                                                            | \$2,670                         |
| 5            |                          | \$2,670                         | \$25,000                                                   | \$27,670                        |
| 6            |                          | \$2,670                         |                                                            | \$2,670                         |
| 7            |                          | \$2,670                         |                                                            | \$2,670                         |
| 8            |                          | \$2,670                         |                                                            | \$2,670                         |
| 9            |                          | \$2,670                         |                                                            | \$2,670                         |
| 10           |                          | \$2,670                         | \$25,000                                                   | \$27,670                        |
| 11           |                          | \$2,670                         |                                                            | \$2,670                         |
| 12           |                          | \$2,670                         |                                                            | \$2,670                         |
| 13           |                          | \$2,670                         |                                                            | \$2,670                         |
| 14           |                          | \$2,670                         |                                                            | \$2,670                         |
| 15           |                          | \$2,670                         | \$25,000                                                   | \$27,670                        |
| 16           |                          | \$2,670                         |                                                            | \$2,670                         |
| 17           |                          | \$2,670                         |                                                            | \$2,670                         |
| 18           |                          | \$2,670                         |                                                            | \$2,670                         |
| 19           |                          | \$2,670                         |                                                            | \$2,670                         |
| 20           |                          | \$2,670                         | \$25,000                                                   | \$27,670                        |
| 21           |                          | \$2,670                         |                                                            | \$2,670                         |
| 22           |                          | \$2,670                         |                                                            | \$2,670                         |
| 23           |                          | \$2,670                         |                                                            | \$2,670                         |
| 24           |                          | \$2,670                         |                                                            | \$2,670                         |
| 25           |                          | \$2,670                         | \$25,000                                                   | \$27,670                        |
| 26           |                          | \$2,670                         |                                                            | \$2,670                         |
| 27           |                          | \$2,670                         |                                                            | \$2,670                         |
| 28           |                          | \$2,670                         |                                                            | \$2,670                         |
| 29           |                          | \$2,670                         | \$25,000                                                   | \$27,670                        |
| <b>Total</b> | <b>\$26,700</b>          | <b>\$77,430</b>                 | <b>\$150,000</b>                                           | <b>\$254,130</b>                |

#### **2.12.4 Expected Outcomes of Selected Remedy**

Land use and availability will continue as is after implementation of this remedial action. The behavioral modification resulting from the awareness and education should mitigate of the hazard associated with physical interaction with discovered UXO.

## **2.13 STATUTORY DETERMINATIONS**

In accordance with statutory requirements of CERCLA, the remedial action shall be protective of human health, comply with ARARs, be cost effective, utilize permanent solutions and alternative treatment technologies to the maxim extent practicable, and prefer treatment as a principal element. The Selected Remedy, Alternative 2, will protect human health through the behavior modification of individuals who come in contact with UXO items. Following the advice and guidance provided in an awareness and education campaign, deliberate, unsafe actions should be minimized. In the lead agency's judgment, the Selected Remedy is protective of Human health and the environment.

### **2.13.1 Protection of Human Health and the Environment**

This remedy will be protective by implementing LUCs in the form of a community MEC awareness training and distribution of informational documents to educate workers, recreational users and site visitors on MEC safety. The implementation of the Selected Remedy will not pose unacceptable short-term risks to human health or the environment or result in any cross-media impacts.

### **2.13.2 Compliance with Applicable or Relevant and Appropriate Requirements**

As discussed, there are no applicable ARARs for the Former Conway Bombing and Gunnery Range MRS-R04 for implementing the selected remedy.

### **2.13.3 Cost Effectiveness**

The selected remedy is considered cost effective because it provides long-term effectiveness at a reasonable cost as compared to the other alternatives. The estimated costs presented in Table -3 represent the costs developed for the FS Report, which considered a remediation timeframe of 30 years.

### **2.13.4 Permanent Solution and Alternate Technology**

Although the selected remedy does not satisfy the statutory preference for permanent solutions and alternative treatment technologies, the selected remedy will reduce the associated hazard to human receptors through education resulting from a community MEC awareness training and distribution of informational documents. A community MEC awareness training would be offered annually and distribution of informational documents would occur as needed to ensure availability to workers, site visitors and recreational users. A relatively low long-term threat for a complete MEC exposure pathway is suspected in the MRS.

### **2.13.5 Preference for Treatment as a Principal Element**

The selected remedy does not meet the statutory mandates to the maximum extent practicable. Active response measures are not practical in many areas of the MRS due to worker safety concerns and site accessibility limitations. A relatively low long-term threat for a complete MEC exposure pathway is suspected in the MRS.

### **2.13.6 Five-Year Reviews**

**2.13.6.1** Five-Year Reviews are a requirement for alternatives not allowing for unlimited use/unrestricted exposure (UU/UE) in accordance with 40 CFR 300.430(f)(4)(ii). Five-Year Reviews would be conducted to:

- 1) Ensure that human health, safety, and the environment are being protected by the response actions implemented;
- 2) Verify the integrity of any site controls;
- 3) Determine if new information has become available that may warrant further action;
- 4) Determine if there is an immediate threat to the public or environment that may require an accelerated response; and
- 5) Review decisions for technical impracticability to determine if new technology will address potential MEC safety hazard.

**2.13.6.2** Data gathered during the review process will be used to determine if the remedy remains protective of human health and the environment. If no changes have taken place, the site would continue to be monitored at the specified intervals. At the completion of the review, a Five-Year Review Report would be prepared, and a public notice would be placed in the local newspaper concerning the continued effectiveness of the remedy. Five-Year Reviews are not considered as part of the remedy.

## **2.14 DOCUMENTATION OF SIGNIFICANT CHANGES FROM PREFERRED ALTERNATIVE OF PROPOSED PLAN**

Alternative 2 was the Selected Remedy for MRS-R04 as presented in the Final FS and PP. The PP was released for public comment in October 2013. The PP identified Alternative 2, LUCS and Five-Year Reviews, as the Preferred Alternative to mitigate risks in MRS-R04. No written or verbal comments were received by the lead agency during the public comment period which ended on 18 December 2013. It was determined that no significant changes to the remedy, as originally identified in the PP, were necessary or appropriate. This alternative remains unchanged from what was presented in these documents.

## **PART 3: THE RESPONSIVENESS SUMMARY**

### **3.1 STAKEHOLDER ISSUES AND LEAD AGENCY RESPONSES**

A public meeting was held on November 21, 2013 to present the Proposed Plan and solicit comments from the community and interested stakeholders. No comments were offered by the meeting attendees nor have there been any comments submitted in writing to the USACE. The newspaper advertisement of the public meeting initiated a 30-day public review period, 17 November thru 18 December 2013. Members of the public were informed the possibility of making comments during the public meeting and the possibility to submit written comments during the review period. No comments were received from any entity during the public comment period.

### **3.2 TECHNICAL AND LEGAL ISSUES**

No technical or legal issues have been noted for MRS-R04.

# EMCX COMMENT TRANSMITTAL

03/20/2014

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                             |                                                                                                                                                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Comments Transmitted to</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                             | Chris Cochran, Huntsville Center<br>Julie Hiscox, Savannah District<br>Raymond Livermore, Wilmington District                                                                                        |
| <b>Submittal #</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                             | 9394    76108                                                                                                                                                                                        |
| <b>Location</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | HORRY COUNTY                                                                                                                                                |                                                                                                                                                                                                      |
| <b>Site</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | CONWAY BMB & GUNRY RNG                                                                                                                                      |                                                                                                                                                                                                      |
| <b>Project</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 4 Ranges                                                                                                                                                    |                                                                                                                                                                                                      |
| <b>Doc Title</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Draft Final - Decision Document, MRS-R04 (Range VII), FUDS MMRP Project No. I04SC002501, Former Conway Bombing and Gunnery Range, Conway, Horry County, SC. |                                                                                                                                                                                                      |
| <b>Phase</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | DRAFT FINAL                                                                                                                                                 |                                                                                                                                                                                                      |
| <b>Designed by</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | STIRLING OPERATIONS, INC.                                                                                                                                   |                                                                                                                                                                                                      |
| <b>Discipline</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Action</b>                                                                                                                                               | <b>SIGNIFICANT OR UNRESOLVED TECHNICAL COMMENTS</b>                                                                                                                                                  |
| Office of Counsel<br>Garry Brewer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | RCA                                                                                                                                                         | 1. LUCs are not coupled with FYRs.<br>2. FYRs do not enhance the effectiveness of the remedy.<br>3. How the alternatives meet the protectiveness threshold criterion is not characterized correctly. |
| MC Response-EMG<br>Michael Bailey                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | SCA                                                                                                                                                         |                                                                                                                                                                                                      |
| MEC Response<br>Kevin Oates                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | NC                                                                                                                                                          |                                                                                                                                                                                                      |
| MMRP Safety<br>Walter Zange                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | NC                                                                                                                                                          |                                                                                                                                                                                                      |
| Compliance<br>Melissa Milner                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NC                                                                                                                                                          |                                                                                                                                                                                                      |
| <p>Please note that in January 2013, the EMCX is transitioning our review comment format. We have better defined the definition of "Significant Comments" and will now classify each comment as either Significant, Observation, or Editorial. Detailed definition of each comment type can be found below.</p> <p>Significant comments generated on FUDS projects must be resolved with the EMCX prior to proceeding with future work. Your EMCX review lead will work with District PM to ensure resolution is reached.</p> |                                                                                                                                                             |                                                                                                                                                                                                      |
| <b>REQUESTED ACTION</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                             | <b>Transmittal of comments approved by:</b>                                                                                                                                                          |
| Environmental and Munitions Center of Expertise (EMCX) comments are attached.<br>Annotated responses to all comments on this document are requested. They can be sent to.<br>EMCX.Documentation@usace.army.mil                                                                                                                                                                                                                                                                                                                |                                                                                                                                                             | <b>John Sikes</b><br><br><b>EMCX LEAD</b><br><br><b>(256) 895-1334</b>                                                                                                                               |
| <b>NC=Reviewed;No Comments</b> <b>NT=No tech Involment</b> <b>RCA=Reviewed Comments Attached</b><br><b>SCA=Reviewed w/Significant Comments attached</b> <b>CT=Conferred/Deferred to District Counterpart</b>                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                             |                                                                                                                                                                                                      |

**Definitions:**

**Significant Comment:** A comment that 1) identifies a statement or recommendation that is not in accordance with policy, guidance, or regulation; 2) identifies flaws that directly affect the overall success of the work (e.g., the technical approach is inconsistent with best practice or industry standards) or invalidates the conclusions drawn from the work; 3) identifies a significant safety risk; 4) identifies statements that misrepresent the facts or omit significant details; or 5) identifies significant potential cost savings while maintaining work quality (e.g., savings of \$10,000 on a small project or \$100,000 or more on a large project, or represent a significant percentage of the overall cost of the project).

**Observation Comment:** A comment that does not meet the definition of a significant comment, including but not limited to one that: 1) offers suggestions or recommendations that improve the effectiveness or timeliness of the work, or simplifies the implementation of work; 2) identifies material (e.g., text, figures, tables) that is inaccurate or that would benefit from additional clarification, improved content, or rephrasing; or 3) identifies suggestions for less significant potential cost savings (relative to "significant" comments).

**Editorial Comment:** A comment that addresses improper grammar, incorrect spelling, poor punctuation, incomplete references, poor readability, confusing format, etc. where the mistakes would significantly change the meaning or usability of the material or reflect poorly on the Corps of Engineers.

**Global Comment:** A comment that involves a change that is required in more than one place. It is noted at the start of the comment and the comment must also be categorized as "significant", "observation", or "editorial".

**76108 : Draft Final - Decision Document, MRS-R04 (Range VII), FUDS MMRP Project No. I04SC002501,  
Former Conway Bombing and Gunnery Range, Conway, Horry County, SC.**

|    | Unique ID   | Type        | Global | Section | Page | Line | Reviewer     | Discipline      |
|----|-------------|-------------|--------|---------|------|------|--------------|-----------------|
| 1. | 76108-MMB-3 | Significant | No     | 2.9.1.2 | 15   |      | Bailey, Mike | MC Response-EMG |

**Comment:** It is not clear what is meant by "LUCs would be coupled with Five-Year Reviews." LUCs are entirely separate from FYRs. Although a FYR is obligated to assess the effectiveness of the LUCs, that does not in any way "couple" the two actions.

**Recommendation:** Recommend deleting any statements that LUCs are "coupled" with FYRs.

**Citation:**

**Ref. Docs:**

|    | Unique ID   | Type        | Global | Section | Page | Line | Reviewer     | Discipline      |
|----|-------------|-------------|--------|---------|------|------|--------------|-----------------|
| 2. | 76108-MMB-4 | Significant | Yes    | 2.9.2.2 | 17   |      | Bailey, Mike | MC Response-EMG |

**Comment:** Do not concur that "Five-Year Reviews will enhance the effectiveness" of the remedy. The act of assessing the effectiveness of the remedy (which is one of the things a FYR does) does not "enhance" the remedy's effectiveness. The effectiveness of the remedy has to stand on its own merits, not on periodic assessments of how effective it is at achieving the RAOs.

**Recommendation:** Please delete this sentence. This comment applies throughout the document.

**Citation:**

**Ref. Docs:**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Unique ID   | Type        | Global | Section | Page | Line | Reviewer     | Discipline      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|--------|---------|------|------|--------------|-----------------|
| 3.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 76108-MMB-5 | Significant | No     | Table 2 | 21   |      | Bailey, Mike | MC Response-EMG |
| <p><b>Comment:</b> Consistent with comments on the Proposed Plan, this table does not correctly assess the alternatives with respect to the protectiveness threshold criterion. The description must clearly indicate whether the alternative meets the threshold criterion or not. Characterization as "Least protective alternative" or "Provides minimal protectiveness" is ambiguous. Also, in characterizing the effectiveness of Alternative 3 as "minimal," it raises concerns about the effectiveness of Alternative 2. Alternative 3 includes surface clearance in addition to LUCs, whereas Alternative 2 only includes LUCs. If Alternative 3 provides minimal effectiveness, then Alternative 2 must provide less than minimal effectiveness.</p> <p><b>Recommendation:</b> Please provide an unambiguous characterization of how the alternatives satisfy the threshold criterion and revisit the characterization of effectiveness.</p> <p><b>Citation:</b></p> <p><b>Ref. Docs:</b></p> |             |             |        |         |      |      |              |                 |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Unique ID   | Type        | Global | Section | Page | Line | Reviewer     | Discipline      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|--------|---------|------|------|--------------|-----------------|
| 4.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 76108-MMB-1 | Observation | Yes    | ES.4    | I    |      | Bailey, Mike | MC Response-EMG |
| <p><b>Comment:</b> It is not clear what the purpose of the statement, "Five-Year Reviews are not part of the selected remedy," is. The issue is further complicated by the fact that the title of the selected remedy is "Land Use Controls and Five-Year Reviews," the cost estimate for the remedy clearly includes the costs for performing FYRs, and the description of the remedy includes FYRs. I agree that FYRs are not part of the remedial action, but they are required as a result of the remedial action.</p> <p><b>Recommendation:</b> Rather than changing the description of the remedy (title, actions, costs, etc.), recommend deleting the sentence that FYRs are not part of the remedy. This comment applies throughout the DD.</p> <p><b>Citation:</b></p> <p><b>Ref. Docs:</b></p> |             |             |        |         |      |      |              |                 |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Unique ID   | Type        | Global | Section  | Page | Line | Reviewer      | Discipline        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|--------|----------|------|------|---------------|-------------------|
| 5.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 76108-GLB-1 | Observation | No     | 2.9.3.2  | 18   |      | Brewer, Garry | Office of Counsel |
| <p><b>Comment:</b> When I read this section I have serious doubts that the preferred alternative is protective and that should not be the case.</p> <p><b>Recommendation:</b> Add language which describes and supports the selection of this alternative. For example, section 2.13.1 contains supportive language as does other sections later in the document.</p> <p><b>Citation:</b></p> <p><b>Ref. Docs:</b></p>                                                                                                                                                                                                                                                                           |             |             |        |          |      |      |               |                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Unique ID   | Type        | Global | Section  | Page | Line | Reviewer      | Discipline        |
| 6.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 76108-GLB-2 | Observation | No     | 2.13.6.1 | 26   |      | Brewer, Garry | Office of Counsel |
| <p><b>Comment:</b> The purpose of a FYR is to determine if the remedy is still protective. While I believe that is what you are trying to say in the first sentence, it appears from the language that there could be action taken to further enhance the protectiveness of the remedy and that would not be the case. Additionally, the concern is for human health, not public safety.</p> <p><b>Recommendation:</b> If I am misreading the sentence, no change is needed. However, please consider changing the sentence to read, "Data gathered . . .to determine if the remedy remains protective of human health and the environment.</p> <p><b>Citation:</b></p> <p><b>Ref. Docs:</b></p> |             |             |        |          |      |      |               |                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Unique ID   | Type        | Global | Section  | Page | Line | Reviewer      | Discipline        |
| 7.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 76108-MMB-2 | Editorial   | No     | ES.4     | I    |      | Bailey, Mike  | MC Response-EMG   |
| <p><b>Comment:</b> "Five-Year Reviews will be as implemented in accordance..." is awkwardly phrased.</p> <p><b>Recommendation:</b> Recommend deleting "as."</p> <p><b>Citation:</b></p> <p><b>Ref. Docs:</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |             |             |        |          |      |      |               |                   |

| Number | UniqueID    | Comment_Type | Global_Comment | Section  | Page | Line | Reviewer      | Discipline        | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Recommendation                                                                                                                                                                                                       | Citation | Ref_Docs | Response |
|--------|-------------|--------------|----------------|----------|------|------|---------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|----------|
| 1      | 76108-MMB-3 | Significant  | No             | 2.9.1.2  | 15   |      | Bailey, Mike  | MC Response-EMG   | It is not clear what is meant by "LUCs would be coupled with Five-Year Reviews." LUCs are entirely separate from FYRs. Although a FYR is obligated to assess the effectiveness of the LUCs, that does not in any way "couple" the two actions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Recommend deleting any statements that LUCs are "coupled" with FYRs.                                                                                                                                                 |          |          |          |
| 2      | 76108-MMB-4 | Significant  | Yes            | 2.9.2.2  | 17   |      | Bailey, Mike  | MC Response-EMG   | Do not concur that "Five-Year Reviews will enhance the effectiveness" of the remedy. The act of assessing the effectiveness of the remedy (which is one of the things a FYR does) does not "enhance" the remedy's effectiveness. The effectiveness of the remedy has to stand on its own merits, not on periodic assessments of how effective it is at achieving the RAOs.                                                                                                                                                                                                                                                                                                                                                             | Please delete this sentence. This comment applies throughout the document.                                                                                                                                           |          |          |          |
| 3      | 76108-MMB-5 | Significant  | No             | Table 2  | 21   |      | Bailey, Mike  | MC Response-EMG   | Consistent with comments on the Proposed Plan, this table does not correctly assess the alternatives with respect to the protectiveness threshold criterion. The description must clearly indicate whether the alternative meets the threshold criterion or not. Characterization as "Least protective alternative" or "Provides minimal protectiveness" is ambiguous. Also, in characterizing the effectiveness of Alternative 3 as "minimal," it raises concerns about the effectiveness of Alternative 2. Alternative 3 includes surface clearance in addition to LUCs, whereas Alternative 2 only includes LUCs. If Alternative 3 provides minimal effectiveness, then Alternative 2 must provide less than minimal effectiveness. | Please provide an unambiguous characterization of how the alternatives satisfy the threshold criterion and revisit the characterization of effectiveness.                                                            |          |          |          |
| 4      | 76108-MMB-1 | Observation  | Yes            | ES.4     | I    |      | Bailey, Mike  | MC Response-EMG   | It is not clear what the purpose of the statement, "Five-Year Reviews are not part of the selected remedy," is. The issue is further complicated by the fact that the title of the selected remedy is "Land Use Controls and Five-Year Reviews," the cost estimate for the remedy clearly includes the costs for performing FYRs, and the description of the remedy includes FYRs. I agree that FYRs are not part of the remedial action, but they are required as a result of the remedial action.                                                                                                                                                                                                                                    | Rather than changing the description of the remedy (title, actions, costs, etc.), recommend deleting the sentence that FYRs are not part of the remedy. This comment applies throughout the DD.                      |          |          |          |
| 5      | 76108-GLB-1 | Observation  | No             | 2.9.3.2  | 18   |      | Brewer, Garry | Office of Counsel | When I read this section I have serious doubts that the preferred alternative is protective and that should not be the case.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Add language which describes and supports the selection of this alternative. For example, section 2.13.1 contains supportive language as does other sections later in the document.                                  |          |          |          |
| 6      | 76108-GLB-2 | Observation  | No             | 2.13.6.1 | 26   |      | Brewer, Garry | Office of Counsel | The purpose of a FYR is to determine if the remedy is still protective. While I believe that is what you are trying to say in the first sentence, it appears from the language that there could be action taken to further enhance the protectiveness of the remedy and that would not be the case. Additionally, the concern is for human health, not public safety.                                                                                                                                                                                                                                                                                                                                                                  | If I am misreading the sentence, no change is needed. However, please consider changing the sentence to read, "Data gathered . . .to determine if the remedy remains protective of human health and the environment. |          |          |          |
| 7      | 76108-MMB-2 | Editorial    | No             | ES.4     | I    |      | Bailey, Mike  | MC Response-EMG   | "Five-Year Reviews will be as implemented in accordance..." is awkwardly phrased.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Recommend deleting "as."                                                                                                                                                                                             |          |          |          |



Catherine B. Templeton, Director

*Promoting and protecting the health of the public and the environment*

February 7, 2014

Julie Anne Hiscox  
FUDS Senior Project Manager  
US Army Corps of Engineers  
Savannah District  
100 W Oglethorpe Avenue  
Savannah, Ga 31401-08809

Re: Proposed Plan-Final  
MRS-R04  
Former Conway Bombing and Gunnery Range

Dear Mrs. Hiscox:

The Department has completed its review and concurs with the above referenced document. No additional questions or comments are requested at this time. If you need any additional information, feel free to contact me at (803)898-0308 or byrdsd@dhec.sc.gov.

Sincerely,

Susan Byrd, FUDS Project Manager  
Division of Waste Management  
Bureau of Land and Waste Management

# STAFF ACTION COVER SHEET

14-328  
CN ✓ JV ✓

**SUBJECT:** Final Decision Document for MRS-R04, Former Conway Bombing and Gunnery Range, Horry County, South Carolina

**TYPE:**



ACTION



INFORMATION

## ROUTING

|   |                      |  |      |   |                     |  |    |
|---|----------------------|--|------|---|---------------------|--|----|
| X | DE                   |  | CD   |   | IR                  |  | RM |
| X | DC <i>HW</i>         |  | CPAC |   | LM                  |  | SB |
|   | CS                   |  | CT   | X | OC <i>18 Jul 14</i> |  | SL |
| X | DP/DM <i>RSB nja</i> |  | EE   |   | OP                  |  | SO |
| X | DX <i>9A 7/13</i>    |  | EM   |   | PA                  |  |    |
|   | PM-C                 |  | EN   |   | PM                  |  |    |
|   | PM-X/Green           |  | IM   |   | RE                  |  |    |
| X | PM-H <i>JP 4/14</i>  |  |      |   |                     |  |    |

**PURPOSE:** Decision Document approval to proceed with Remedial Action at this site.

**SUMMARY:** This Decision Document presents the preferred Remedial Alternative for MRS-R04 for approval.

## RECOMMENDATION:

If in agreement with attached data, please sign all documents or if you have any questions, please contact Action Officer listed below. Thank you.

## COORDINATION

| OFFICE | NAME | EXTENSION | OFFICE | NAME | EXTENSION |
|--------|------|-----------|--------|------|-----------|
|        |      |           |        |      |           |
|        |      |           |        |      |           |
|        |      |           |        |      |           |
|        |      |           |        |      |           |

**ACTION OFFICER (Signature, Office Symbol, Phone No.):**

*Julie Anne Hiscox*  
Julie Anne Hiscox, PM-H, 912-652-5363

**DIVISION / OFFICE CHIEF'S INITIALS**

**DATE**

13 July 2014

**CESAS FORM 1213-R-E**  
April 2006

(PREVIOUS EDITION IS OBSOLETE)