



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 49TH WING (ACC)
HOLLOMAN AIR FORCE BASE, NEW MEXICO



17 April 2017

ADAM M. KUSMAK, GS-13, USAF
Chief, Installation Management Flight (49 CES/CEI)
49th Civil Engineer Squadron (49 CES)
Holloman Air Force Base, NM

Mr. Chuck Hendrickson, Project Manager
RCRA Corrective Action Section (6MM-RC)
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Dear Mr. Hendrickson,

Holloman AFB is pleased to submit the Final Proposed Plan for the XU853 Missile Test Stand Area Munitions Response Site, Holloman Air Force Base, NM for your record.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions regarding this submittal, please contact me at (575) 572-6675.

Sincerely,

KUSMAK.ADAM
.M.1263331806
ADAM M. KUSMAK, GS-13, USAF

Digitally signed by
KUSMAK.ADAM.M.1263331806
DN: cn=US, o=U.S. Government,
ou=DoD, ou=PKI, ou=USAF,
cn=KUSMAK.ADAM.M.1263331806
Date: 2017.04.26 11:08:38 -0600

Attachment:
Proposed Plan for the XU853 Missile Test Stand Area Munitions Response Site, Holloman Air Force Base, NM.

cc:		
(w/Atch)	(w/Atch)	(w/o Atch)
Mr. David Strasser	Mr. John Kieling, Chief	Mr. Cornelius Amindyas
Hazardous Waste Bureau	Hazardous Waste Bureau	Hazardous Waste Bureau
121 Tijeras Dr. NE, Ste.1000	2905 Rodeo Park Dr. East Bldg. 1	121 Tijeras Dr. NE, Ste. 1000
Albuquerque NM 87102-3400	Santa Fe NM 87505-6303	Albuquerque NM 87102-3400

FINAL PROPOSED PLAN

MILITARY MUNITIONS RESPONSE PROGRAM

**XU853 MISSILE TEST STAND AREA
MUNITIONS RESPONSE SITE**

HOLLOMAN AIR FORCE BASE

NEW MEXICO

PERFORMANCE BASED REMEDIATION

Contract Number: FA8903-13-C-0008

Prepared for:



**AIR FORCE CIVIL ENGINEER CENTER
2261 Hughes Ave., Suite 155
Joint Base San Antonio Lackland, Texas 78236-9853**

Prepared by:

FPM Remediations, Inc.

**181 Kenwood Avenue
Oneida, NY 13421**

April 2017

PROPOSED PLAN
XU853 – Missile Test Stand Area Munitions Response Site
Holloman Air Force Base, New Mexico

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PROPOSED PLAN
XU853 – Missile Test Stand Area Munitions Response Site
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1.0 INTRODUCTION

This Proposed Plan (PP) concerning the XU853 Missile Test Stand Area Munitions Response Site (MRS), located at Holloman Air Force Base (AFB), Otero County, New Mexico (**Figure 1**) is submitted for public review and comment. The PP recommends No Further Action (NFA) for both Munitions and Explosives of Concern (MEC) and Munitions Constituents (MC) following completion of a Remedial Investigation (RI) and provides reasons for this preference at MRS.

This document has been prepared by the United States Air Force (USAF), the lead federal agency for site activities, in agreement with the United States Environmental Protection Agency (USEPA), the support agency, and in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 117(a) and Section 300.430(f)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). Under CERCLA and the NCP, it is appropriate for the lead agency to recommend NFA when no unacceptable risks exist under the residential use scenario.

This PP may be modified based on any new information acquired during the 30-day public comment period. The USAF, as lead agency, will make a final decision on the need for additional action following consultation with the USEPA. This decision will be made after reviewing and considering all information submitted during the designated public comment period. Therefore, the public is encouraged to review and comment on all information presented in this document.

Information presented in this document can be found in greater detail in the Comprehensive Site Evaluation (CSE) Phases I and II, RI, and other documents contained in the Administrative Record file for this site. The USAF and USEPA

encourage the public to review these documents to gain a better understanding of investigations conducted at this site.

MARK YOUR CALENDAR

PUBLIC COMMENT PERIOD:

5 May, 2017 – 4 June, 2017

The Proposed Plan is available for public review during the 30-day public comment period at the following location:

**Alamogordo Public Library,
920 Oregon Ave.
Alamogordo, N.M. 88310
Phone: (575) 439-4140**

The USAF will accept written comments on the Proposed Plan during the public comment period. Comment Letters must be postmarked by **June 4, 2017** and should be submitted to:

49th Wing Public Affairs
490 First Street, Building 29, Suite 1500
Holloman AFB, NM 88330

Comments can also be submitted via email to:

49wgpaoffice@holloman.af.mil

For additional questions, comments or concerns please call (575)-572-7381.

PUBLIC MEETING:

Based on the level of interest, the USAF may hold a public meeting to explain the PP and the reasons for the NFA recommendation for the XU853 Missile Test Stand Area MRS and accept oral and written comments. The public meeting will be announced in the Alamogordo Daily News, a newspaper of daily circulation in the city of Alamogordo area and includes Holloman AFB. If scheduled, the meeting will be held at the Alamogordo Public Library.

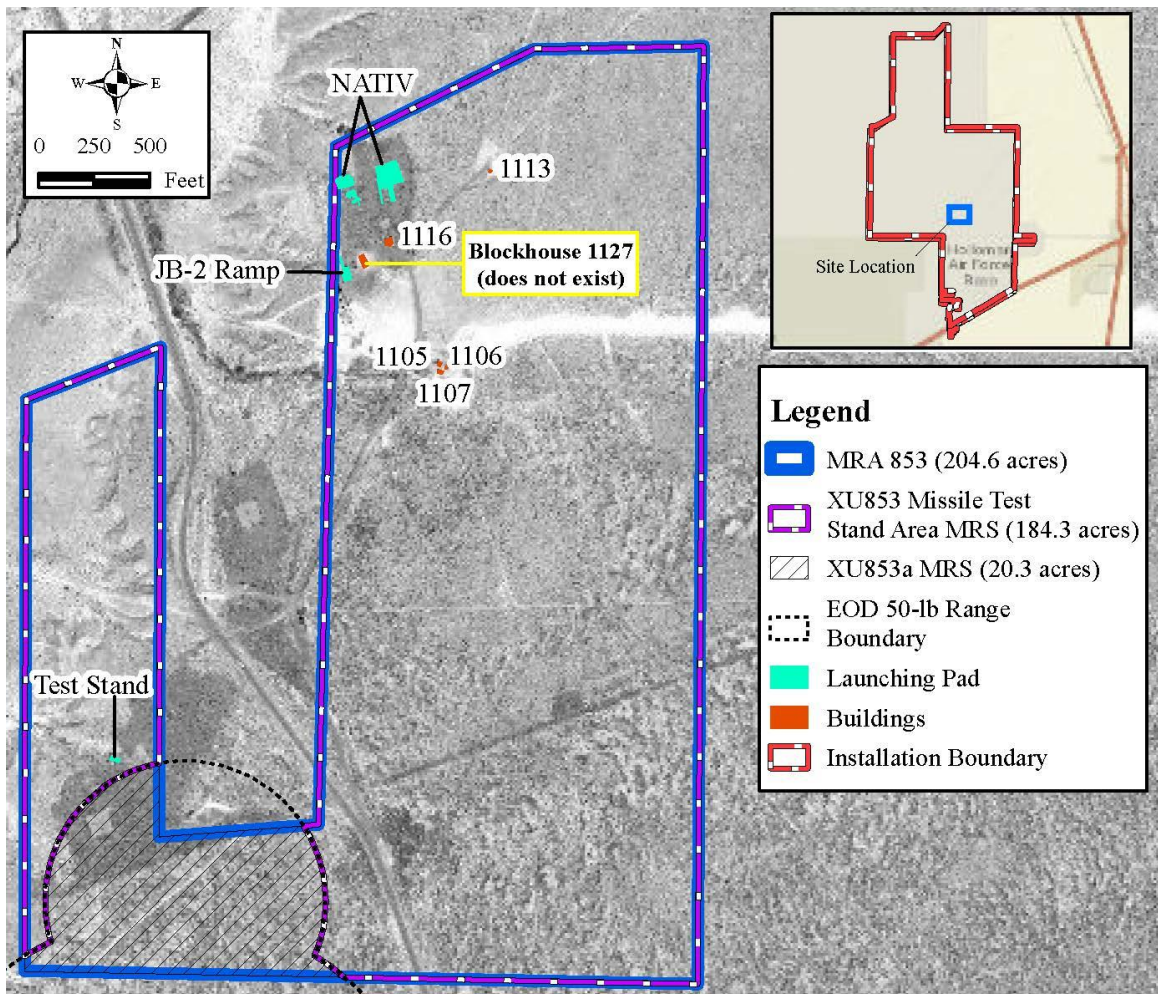
ADMINISTRATIVE RECORD FILE:

For more information on the XU853 Missile Test Stand Area MRS, please see the Administrative Record at the following web address:

<http://afcec.publicadmin-record.us.af.mil>

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Figure 1 XU853 Missile Test Stand Area MRS



2.0 SITE HISTORY AND BACKGROUND

Holloman AFB is located in south-central New Mexico, seven miles west of the city of Alamogordo in Otero County. Holloman AFB occupies approximately 50,763 acres of land and is adjacent to the much larger (2.2 million acre) White Sands Missile Range (WSMR). The southern portion of Holloman AFB contains the flight line, composed of a series of runways running north-south, east-west, and northeast southwest. The Main Base is located in the southeast corner of the installation, where Route 70 borders the site. The Main Base

contains housing and administrative buildings. The High Speed Test Track (HSTT) runs north-south and is located northwest of the airfield.

The XU853 Missile Test Stand Area MRS is a 184.30-acre site located in the south-central portion of Holloman AFB (**Figure 1**). Initially, the site was identified as 204.60-acre Munitions Response Area (MRA) 853 (Shaw Environmental, Inc. [Shaw], 2010). The Missile Test Stand Area MRA was used primarily in the 1940s and 1950s as a launch area for an array of missile testing programs. The majority of missile testing at this site ended in the late

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1950s with brief test vehicle programs lasting into the 1960s. Five launch complexes are described as associated with the Missile Test Stand Area, North American Test Instrument Vehicle (NATIV), or MX-770, the JB-2 Loon, or MX-544, the Aerobee, or MX-1011, and the Test Stand. The 5th launch complex, the Ground-to-Air Pilotless Aircraft (GAPA), or MX-606, lies outside the MRA boundary in an area previously investigated under the Environmental Restoration Program (ERP) as the Early Missile Test Site ERP Site (OT-37). Missiles tested in the MRA area included the Falcon (MX-904), Aerobee (MX-1011), Aerobee-Hi (MX1961), Aerobee 150, and Shrike-Rascal (MX-776) missiles.

A **CSE Phase II** (HDR Environmental, Operations and Construction, Inc., 2013) was conducted to determine whether the Missile Test Stand Area (MRA 853) warranted further munitions response action. Detector-aided (i.e., White's Electromagnetic DFX 300 metal detector) visual surveys were performed during this study.

No MEC items were found during the visual survey and Munitions Debris (MD) observed included 30 millimeter (mm) casings and links, expended M74A1 40mm flare cartridge casings, expended M18 smoke grenades and the tail boom from an 81mm Illumination Mortar, an expended MK 13 Day & Night Distress Signal, and expended 5-inch rocket motors. These MD items were associated with recent training activities.

Missile debris observed consisted of multiple Aerobee fins; a set of Aerobee fins still attached to an expended booster motor was observed in the southwestern portion of the MRA near the Aerobee complex and Test Stand area. A possible fuel release consisting of a single chip of an orange substance with a strong kerosene odor was also observed in the southwest portion of the MRA near the Aerobee launch pad.

Small arms debris observed consisted of 5.56mm, 7.62mm, and .50-caliber casings and blanks. Several intact small arms rounds (5.56mm and 7.62mm) were also observed during the visual survey.

Since no MEC was found during the visual survey; no MC (metals and explosive constituents) sampling was conducted in the MRA. Although intact small arms ammunition was identified during the visual survey, there is no historical record of small arms training conducted at the MRA, and since the CSE Phase II visual survey did not discover any evidence of formal small arms training (e.g., targets, berms, and firing positions), the small arms debris discovered at the MRA during the CSE Phase II suggest recent but minor usage of small arms. Therefore, no MC sampling for lead was conducted in the MRA. Since no MC sampling was performed, no human health or ecological screening was conducted for this site. The CSE Phase II concluded that any human health or ecological risks at this site were expected to be similar to background conditions. USEPA concurred with this determination.

Based on the presence of surface MD within the MRA boundary, the entire 204.60-acre MRA was designated as the XU853 MRS at the conclusion of the CSE Phase II (**Figure 1**). The XU853 MRS obtained a Munitions Response Site Prioritization Protocol (MRSPP) score of 6 and was recommended for further munitions response action.

Explosives Ordnance Disposal (EOD) 50-pound (lb) Range - Subsequent to the CSE Phase II investigation a 20.30-acre parcel in the southwestern portion of the XU853 MRS was included in the recently established EOD 50-lb range. Now part of an active range, this area is excluded from further munitions response investigations and the MRS acreage was reduced from 204.60 acres to 184.30 acres (**Figure 1**). The excluded portion of the MRS contains the

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Aerobee launch complex and surrounding area and includes the location of the possible fuel release observed during the CSE Phase II.

An **RI** (FPM Remediations, Inc., 2016) was conducted at the 184.30-acre XU853 MRS to characterize the nature and extent of hazards associated with MEC and MC contamination. The RI field activities included performing instrument-aided (i.e., White's Electromagnetic DFX 300 metal detector) surface clearance, conducting Digital Geophysical Mapping (DGM), performing MC sampling, and intrusively investigating all anomalies with responses above the site-specific threshold established for XU853. DGM surveys create images of underground objects and can be used to determine which objects are likely to be munitions items. This was followed by intrusive investigation of all DGM anomalies, and MC sampling.

During the surface clearance, no MEC or MD was discovered and approximately one lb of small arms debris (5.56mm blanks [expended]) was found. All subsurface anomalies were intrusively investigated, meaning they were excavated, except for those anomalies that were determined to be utility lines, which were left in place. No MEC was discovered and approximately 2.4 lbs of MD were removed. MD included: a BLU-26 (T-1 practice) sub-munitions, a 40mm casing (empty), a grenade fuze (empty), grenade spoon, and a fin (possible missile component). Also, approximately 0.1 lb of small arms debris consisting of one 20mm link and one .50 caliber casing was removed during the intrusive investigation.

Ten incremental surface soil samples (0-6 inches) including one duplicate and three replicates were collected at the site in the areas immediately surrounding known historical missile/rocket launch pad sites. Explosive compounds associated with missile and rocket propellants were not detected or were well below their respective

residential Human Health Screening levels (HHSLs) and Ecological Screening Levels (ESLs). Both nitrate and perchlorate were detected at concentrations well below the residential HHSLs. No ESL values are available for nitrate and perchlorate. As a result, it was concluded that explosives, nitrate, and perchlorate in soil at XU853 do not pose any hazard to human health and the environment, and further human health and ecological risk evaluation of explosives, nitrate, and perchlorate in soil at the XU853 MRS was not necessary. No additional soil sampling for propellant constituents was performed as no evidence of potential contamination (e.g., discolored soil) was found during the RI. Composite surface soil samples for metals and explosives constituents were not collected at the XU853 MRS as no potential MC source (MEC) was found.

UXO Estimator, a software package developed by United States Army Corps of Engineers, was used as a statistical tool to determine the upper bound on the potential residual Unexplode Ordnance (UXO) remaining on the MRS with a 95% confidence level. Since XU853 was not historically used as a range (no target area), there is an equal likelihood of finding a potential UXO anywhere in the MRS. This is an underlying assumption for the use of UXO Estimator. According to calculations performed using this software, if a total of 6.34 acres was investigated (area covered by transects and grids at XU853) within the 184.3 acres (size of MRS), then it can be claimed with a 95% confidence that there is no more than 0.46 UXO/acre at XU853. This means that the actual number of UXO potentially present at the XU853 MRS after the RI may be any number of UXO between zero and 85 (the upper bound). However, based on both historical usage of the MRS (launch facility for testing of missiles) and previous investigations (no UXO identified), the number of potential UXO is most likely closer to zero.

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Based on the RI results, the XU853 MRS obtained an MRSPP score of 8 and was recommended for NFA for both MEC and MC (including propellant constituents).

3.0 SITE CHARACTERISTICS

The majority of the XU853 MRS is flat, with the Lost River channel running to the north and northwest of the MRS. Drainage features for the Lost River channel dominate in the western portion of the MRS creating significant topographic relief in that area. No wetlands or surface water are associated with the XU853 MRS. The soils at XU853 consist of the Yesum Sandy Loam and Yesum-Nasa complex; vegetation is consistent with desert scrubland.

Currently, the XU853 MRS is closed; however, many of the facilities and buildings remain. Many of the buildings present at the MRS have been used for warehousing/general storage. Part of the MRS, including buildings 1105, 1106, 1107 and the nearby water tank and water tower, are currently in use by the Holloman AFB water distribution utility shop. During the RI field activities, the Holloman Real Property Office verified that Buildings 1105, 1106, 1107, 1113, and 1116 that are present at the MRS were not used previously for munitions storage or hazardous material storage. According to Holloman AFB Installation Development and Design (Holloman AFB, 2011), no future land usage changes for this site are known at this time.

According to the 1996 North Main Base Cultural Resources Survey (Sale et al., 1996) much of the MRS is considered eligible for inclusion in the National Register of Historic Places (NRHP), based on its association with early missile development on Holloman AFB. Facilities considered individually eligible for the NRHP within the XU853 MRS are Building 1113 (a former radio relay facility), Building 1116, the JB-2 Ramp, and a Test Stand.

There are 148 buildings within a two-mile radius of the MRS.

There is no fencing or other controls associated with the XU853; however, access to Holloman AFB requires admittance through the security gate and there is a fence around the installation. Therefore, access to the XU853 is restricted for the general public, but is open to Base personnel, contractors, and Base residents.

4.0 SCOPE AND ROLE OF THE ACTION

The recommended NFA response will involve no further investigation or cleanup at the site with respect to MEC or MC (including rocket/missile propellant constituents).

5.0 SUMMARY OF SITE RISKS

Based on historical information and the results from previous investigations (no MEC was found in the surface or subsurface of the MRS), there is no explosive hazard at the MRS associated with MEC. In addition, all contaminants of potential concern were either not detected or detected well below their respective residential human health and ecological screening levels. Therefore, there are no human health and ecological risks associated with MC (metals and explosive and propellant constituents) at the XU853 MRS.

6.0 DESCRIPTION OF THE PREFERRED REMEDY

The USAF recommends NFA for both MEC and MC at the XU853 since the site does not pose a risk to human health and the environment. This NFA designation requires no land-use controls or restrictions, and no capital, operational, or maintenance costs. An NFA recommendation for the XU853 MRS is supported by the following facts:

- Based on both historical information (there are no records of historical

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use of explosives and no evidence of craters or other features observed in field data that would suggest the use of explosives) and results from previous investigations (no MEC was found during the CSE Phase I or II, or the RI), there is no explosive hazard at the MRS associated with MEC.

- Based on the lack of sources for MC (metals and explosive constituents) and based on propellant constituent sampling results, there are no unacceptable risks to human health and the environment posed by the very low levels of contamination at XU853.

7.0 COMMUNITY PARTICIPATION

The USAF and USEPA will provide existing information regarding the hazard exposure reduction at XU853 to the public through public meetings, the Administrative Record file for the site, and announcements published in the Alamogordo Daily News newspaper, City of Alamogordo, New Mexico. The USAF and the USEPA encourage the public to gain a more comprehensive understanding of the site and the remedial activities that have been conducted at the site.

The dates for the public comment period, details regarding the announcement and location of the public meeting, and the locations of the Administrative Record files, are provided on the front page of this PP.

8.0 REFERENCES

EPA 540-R-98-031, Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents; USEPA, July 1999.

FPM, Final Remedial Investigation Report, Missile Test Stand Area (XU853) MRS, Holloman AFB, New Mexico, May 2016.

HDR, Final Comprehensive Site Evaluation Phase II Report, Holloman AFB, New Mexico, September 2013. HDR for United States Army Corps of Engineers (USACE) - Omaha District.

Sale, M., Gibbs, V., Landreth, M., Ernst, M., McCarson, B., and Giese, R., North Main Base Cultural Resources Survey, Holloman Air Force Base, April 1996.

Shaw, Final Modified Comprehensive Site Evaluation Phase I Report, Holloman AFB, New Mexico, May 2010. Shaw for USACE - Omaha District.

9.0 GLOSSARY AND TERMS

Administrative Record - The body of documents that “forms the basis” for the selection of a particular response at a site. Documents that are included are relevant documents that were relied upon in selecting the response action as well as relevant documents that were considered but were ultimately rejected. Until the Administrative Record is certified, it shall be referred to as the “Administrative Record file.”

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Congress enacted CERCLA (42 USC § 9620 et seq.), commonly known as the Superfund Act, on 11 December 1980. This law created a tax on the chemical and petroleum industries and provided broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment.

Digital Geophysical Mapping (DGM) - Techniques that utilize electronic instruments to detect, measure, and map the physical characteristics of buried source items (i.e., anomalies).

Explosive Hazard – A condition where danger exists because explosives are present that may react (e.g., detonate, deflagrate) in a mishap with potential unacceptable effects (e.g., death, injury, damage) to people,

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property, operational capability, or the environment.

Intrusive Investigation - An activity that involves or results in the penetration of the ground surface to identify and, when necessary to excavate anomalies. An activity that greatly increases the risk of exposure to MEC/MPPEH in an area known or suspected to contain MEC.

Military Munitions – Military munitions means all ammunition products and components produced for or used by the armed forces for national defense and security, including confined gaseous, liquid, and solid propellants; explosives, pyrotechnics, chemical and riot control agents, smokes, and incendiaries, including bulk explosives, and chemical warfare agents; chemical munitions, rockets, guided and ballistic missiles, bombs, warheads, mortar rounds, artillery ammunition, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers, demolition charges; and devices and components thereof.

Munitions Constituents (MC) – Any materials originating from unexploded ordnance, discarded military munitions, or other military munitions, including explosive and non-explosive materials, and emission, degradation, or breakdown elements of such ordinance or munitions.

Munitions and Explosives of Concern (MEC) – Specific categories of military munitions that may pose unique explosives safety risks, including Unexploded Ordnance, Discarded Military Munitions, or Munitions Constituents present in high enough concentrations to pose an explosive hazard.

Munitions Debris (MD) – Remnants of munitions (e.g., fragments, penetrators, projectiles, shell casings, links, fins) remaining after munitions use, demilitarization, or disposal.

Munitions Response – Response actions, including investigation, removal actions and remedial actions (RAs) to address the explosives safety, human health, or environmental risks presented by unexploded ordnance, discarded military munitions, or munitions constituents, or to support a determination that no removal or remedial action is required.

Munitions Response Site (MRS) - A discrete location within a MR Area that is known to require a MR.

National Oil and Hazardous Substance Pollution Contingency Plan (NCP) - Revised in 1990, the NCP provides the regulatory framework for responses under CERCLA. The NCP designates the DoD as the removal response authority for ordnance and explosives hazards.

Range – A designated land or water area that is set aside, managed, and used for range activities by the DoD. The term includes firing lines and positions, maneuver areas, firing lanes, test pads, detonation pads, impact areas, electronic scoring sites, buffer zones with restricted access, and exclusionary areas. The term also includes airspace areas designated for military use.

Remedial Action - Those actions consistent with a permanent remedy taken instead of or in addition to removal actions in the event of a release or threatened release of a hazardous substance into the environment, to prevent or minimize the release of hazardous substances so that they do not migrate to cause substantial danger to present or future public health, welfare, or the environment.

Remedial Investigation (RI) - The RI process can be thought of as the site characterization phase in which the nature and extent of contamination is determined and potential risks posed to human health and the environment are evaluated. The RI gathers necessary information to develop and evaluate remedial alternatives for the

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site. Per 40 CFR 300.430(d), the purpose of the RI is to “collect data necessary to adequately characterize the site for the purpose of developing and evaluating effective remedial alternatives.”

Unexploded Ordnance (UXO) – Military munitions that: (a) have been primed, fuzed, armed, or otherwise prepared for action, (b) have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installations, personnel, or material, and (c) remain unexploded whether by malfunction, design, or any other cause.

USE THIS SPACE TO WRITE YOUR COMMENTS

Your input on the Proposed Plan for the XU853 Missile Test Stand Area Munitions Response Site (MRS) at Holloman AFB is important. Comments provided by the public are valuable in helping the Air Force and United States Environmental Protection Agency select a final cleanup remedy for the site.

You may use the space below to write your comments and mail to the address given below. Comments must be postmarked by June 4, 2017. If you have additional questions, comments or concerns please call 575-572-7381. Those with electronic communications capabilities may submit their comments to the Air Force at the following e-mail address: 49wgpaoffice@holloman.af.mil.

Name: _____

Address: _____

City: _____

State: _____ Zip: _____

*Telephone: (_____) _____

*E-mail: _____

*Optional

