DEPARTMENT OF THE ARMY
HUNTSVILLE CENTER, CORPS OF ENGINEERS
P.O. BOX 1600
HUNTSVILLE, ALABAMA 35807-4301

REPLY TO
ATTENTION OF:

CEHNC-CX-MM

APR 16 2008

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: Explosives Site Plans (ESP) for Military Munitions Response Program (MMRP) Projects, Environmental and Munitions Center of Expertise, Military Munitions Division (CEHNC-EM-CX-MM) Interim Guidance Document (IGD) 08-01

1. PURPOSE: This IGD:

a. Deletes the requirement to include an ESP in MMRP Work Plans, as identified in the following contract data item descriptions (DIDs);

(1) Contract DID MR-001 - Type I Work Plan, Chapter 6,

(2) Contract DID MR-005-01 - Type II Work Plan, Chapter 6,

(3) Contract DID OE-001.01 - Type I EE/CA Work Plan, Chapter 6,

(4) Contract DID OE-005-01.01 - Type II Work Plan, Chapter 4, and

(5) Contract DID FPRI-005-01 - Type II Work Plan, Chapter 4.

b. Establishes the requirement to submit a separate, stand-alone ESP for those MMRP projects identified in paragraph 3a, this document. The format provided supplements the guidance in the following DIDs:

(1) Contract DID MR-005-04 - Explosive Siting Plan,

(2) Contract DID OE-005-04.1 - Explosive Siting Plan, and

(3) Contract DID FPRI-005-04 - Explosive Siting Plan.

c. Provides contractors with a format to be followed for ESPs required for MMRP projects (see enclosure).

2. APPLICABILITY: This guidance is applicable to the geographic military Districts, MMRP Design Centers, Major US Army Engineering and Support Center, Huntsville Subordinate Commands (MSCs), and designated Remedial Action Districts performing MMRP response actions.

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3. REQUIREMENTS AND PROCEDURES:

a. ESPs are required to be submitted for those MMRP projects that are in a characterization/investigative remedial phase and intentional physical contact with munitions and explosives of concern (MEC) will occur during the conduct of site activities.

b. Department of Defense (DOD) 6055.9-STD, 29 February 2008 requires that all ESPs be approved by the DOD component (USACE), the service component (U.S. Army Technical Center for Explosives Safety (USATCES)) and Department of Defense Explosive Safety Board (DDESB) before activities begin that involve the use of, exposure to, disposal of, or placement of, explosives on the site.

c. Engineer Regulation 385-1-95, mandates that all explosives safety submissions and site plans will be provided the DOD component (Direct Reporting Unit (DRU)) approval for Headquarters, U.S. Army Corps of Engineers by this office.

d. ESPs are not required for MMRP projects in the following categories:

(1) Munitions or explosives emergency responses,

(2) Preliminary assessments or Site Inspections when intentional physical contact with MEC, or the conduct of ground-disturbing or intrusive activities, are not intended,

(3) Clearance activities on operational ranges,

(4) Munitions responses on former ranges used exclusively for training with small arms ammunition,

(5) On-call construction support, or

(6) Anomaly avoidance activities.

4. DISTRIBUTION: Approved for public release; distribution is unlimited.

5. EFFECTIVE DATES: The requirements and procedures set forth in this interim guidance are effective immediately for Task Orders issued after the date of this memorandum. These procedures are not retroactive. They will remain in effect indefinitely, unless superseded by other policy or regulation.

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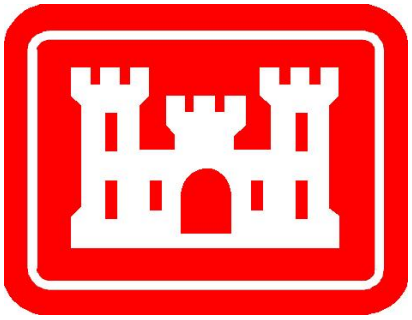
5. POINT OF CONTACT: If you need additional information, please contact Mr. Hank Hubbard at (256) 895-1586.

Encl

JOHN A. SIKES
Chief, Military Munitions Division
Environmental and Munitions
Center Of Expertise



Explosive Site Plan

INVESTIGATION/CHARACTERIZATION ACTION

ENTER NAME OF SITE
LOCATION OF SITE

MONTH AND YEAR

Prepared by

U.S. Army Engineering and Support Center, Huntsville

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Section Page

1. **Site:**
   a. Name:
   b. State:
   c. This investigation is being performed under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and is part of the overall Remedial Action Process. Subsequent removal responses may be dictated in the future during the remainder of the remedial response process, as determined by action memoranda or other decision documents. If subsequent removal responses are determined to be necessary in the full remedial process, an ESS will be prepared and submitted for review and approval as necessary to support that response.

2. **Anticipated Dates:**
   a. Start:
   b. Complete:

3. **Purpose: (For Example)**
   a. To identify potential MEC areas for future removal responses within the project location.
   b. Clarifies that U.S. Army EOD personnel will perform all explosive ordnance disposal activities at the site.

4. **Site Background and Current Conditions: (For Example - this is a bit wordy)**
   a. The Former Communications Site was located on the former Ladd Field, which is currently part of Fort Wainwright. Between 1940 and 1959 MEC was mixed with construction debris and other metallic debris and buried as a means of routine disposal.
   b. The site was selected for future military family housing in 2002-2003. The construction of the family housing began in summer of 2004 with ground clearing. Actual construction of the housing area began in April 2005 with the excavation of utility trenches and building foundations. Vertical construction has been completed at the site but additional work remains including the installation of roads, sidewalks, driveways, lighting and landscaping. Construction at the site has been suspended indefinitely because of the presence of MEC.
   c. During construction activities, buried debris was encountered, including MEC. In 2006, intrusive investigations were performed as part of a Preliminary Source Evaluation (PSE) in an attempt to determine the extent and types of debris and

potential chemical contamination. The results of the PSE indicated that further investigations were necessary to fully characterize the area.

d. The U.S. Army Cold Regions Research and Engineering Laboratory (CRREL) has performed extensive geophysical surveys to determine the extent of the buried debris. Based on the results of the geophysical survey and the PSE, the site has been divided into two areas that require additional investigation and are addressed in this ESP.

e. None of the houses at the site are occupied.

f. An eight feet high chain linked fence with barbed wire at the top surrounds the entire site. Locked gates are located on the northern and southern boundaries of the site. Site access is limited and controlled by the Fort Wainwright Directorate of Public Works personnel.

5. Executing Agencies:

a. U.S. Army Environmental Center

b. U.S. Army Directorate of Public Works

c. U.S. Army Corps of Engineers, Alaska District

6. Scope of Investigative/Characterization action:

a. A surface and subsurface investigative action is required to fully characterize the site to determine the extent and boundaries of contamination, MEC and HTRW, on the site.

b. The selected investigative technique for conducting the investigation for contaminants at this location (identified in Figure 2) in 2008 is a surface sweep and investigation of potential MEC, debris, and other contaminants to a minimum depth of 4 feet.

c. The geophysical survey instrument (EM61) was used to delineate the boundaries of the potentially contaminated areas. A mechanical excavator will be used to assist in the removal of overburden and debris from the pits.

7. Safety Criteria: (Minimum information needed)

a. The MEC that has been discovered, or is expected to be, on site is an unfuzed, unfired M106, 8-inch projectile. This MEC has been identified as discarded military munitions (DMM), not unexploded ordnance (UXO). During the course of this investigative action, if MEC with a greater fragmentation distance is encountered, the MSD will be adjusted in accordance with DDESB Technical Paper 16, operations will continue, and an amendment to this ESP submitted for approval expeditiously.

b. See Table 7-1 for Minimum Separation Distances.

Table 7-1 Minimum Separation Distances (MSD)						
Area		MSD (ft)				
		For Unintentional Detonations		For Intentional Detonations		
Taku Gardens	MEC	Team Separation Distance (K40)	Hazardous Fragment Distance (HFD)	Without Engineering Controls	Using Sandbag Mitigation	Using Water Mitigation Carboys/Pool
	8" HE projectile, M 106[2]	153	530	3,287	NA	NA
Notes: 1. See Appendix A for calculation sheets and documentation of MSD. 2. Denotes MGFD during intrusive operations within the area indicated.						

c. Any occupied buildings or public roadways in the MSD areas will be evacuated and/or roadways blocked to prevent non-essential personnel from entering during the conduct of intrusive investigations. The base gas station and Neely Road are within the 530-feet Hazardous Fragmentation Distance of the northern three-fourths of the building-17 investigation site. Therefore, intrusive activities will not be conducted north of the line drawn across this area when Neely Road is open and/or the gas station is open, see Figure-2.

d. The surface materials will be removed in six inch lifts, with magnetometer surveys conducted between lifts, to preclude the probability of encountering MEC with the mechanical equipment. If the metallic debris becomes too dense for magnetometer surveys, a visual survey will be conducted prior to debris removal.

8. Methods of Disposal: (For Example)

a. The contractor will not maintain any explosives on site or perform any munitions disposal activities. If munitions are found that contain explosives and are considered “acceptable to move” they will be transported, as directed by installation personnel, to the base Ammunition Supply Point (ASP) and staged in explosive storage magazine #2209 that is certified and licensed, until disposed of by U.S. Army EOD personnel.

b. The contractor will not maintain control of any explosive storage magazines.

c. If disposal activities are required, they will be performed by U.S. Army EOD personnel at an established and permitted disposal range within the boundary of Fort Wainwright, as identified by installation personnel.

d. The ESQD arc for intentional detonations when conducting BIP disposal or RSP procedures is 3,287 feet and is depicted in Figure 3. Disposal will be performed by U.S. Army EOD personnel, who may choose to perform a “Render Safe Procedure” (RSP) instead of a BIP, per their TM 60 Series EOD publications.

The contractor's UXO and site personnel will assist the EOD personnel as necessary to construct engineering controls they prescribe as necessary to suppress the noise, blast, distribution of fragments, and protect the public. It is not anticipated that demolition activities will take place within the project site, due to the fact that the MEC items discovered to date have not been fuzed or fired and have been determined acceptable-to-move and have been relocated by EOD personnel to a storage area identified in paragraph 8a, this document.

9. Maps: (For Example)

Figure 1 shows the regional location of the former communications site within the boundary of Fort Wainwright, Alaska. Figure 2 depicts the Hazardous Fragmentation Distance around each investigation area. Figure 3 identifies the Maximum Fragment Range - Horizontal (MFR-H) distance each area for the munition with the greatest fragmentation distance (MGFD).

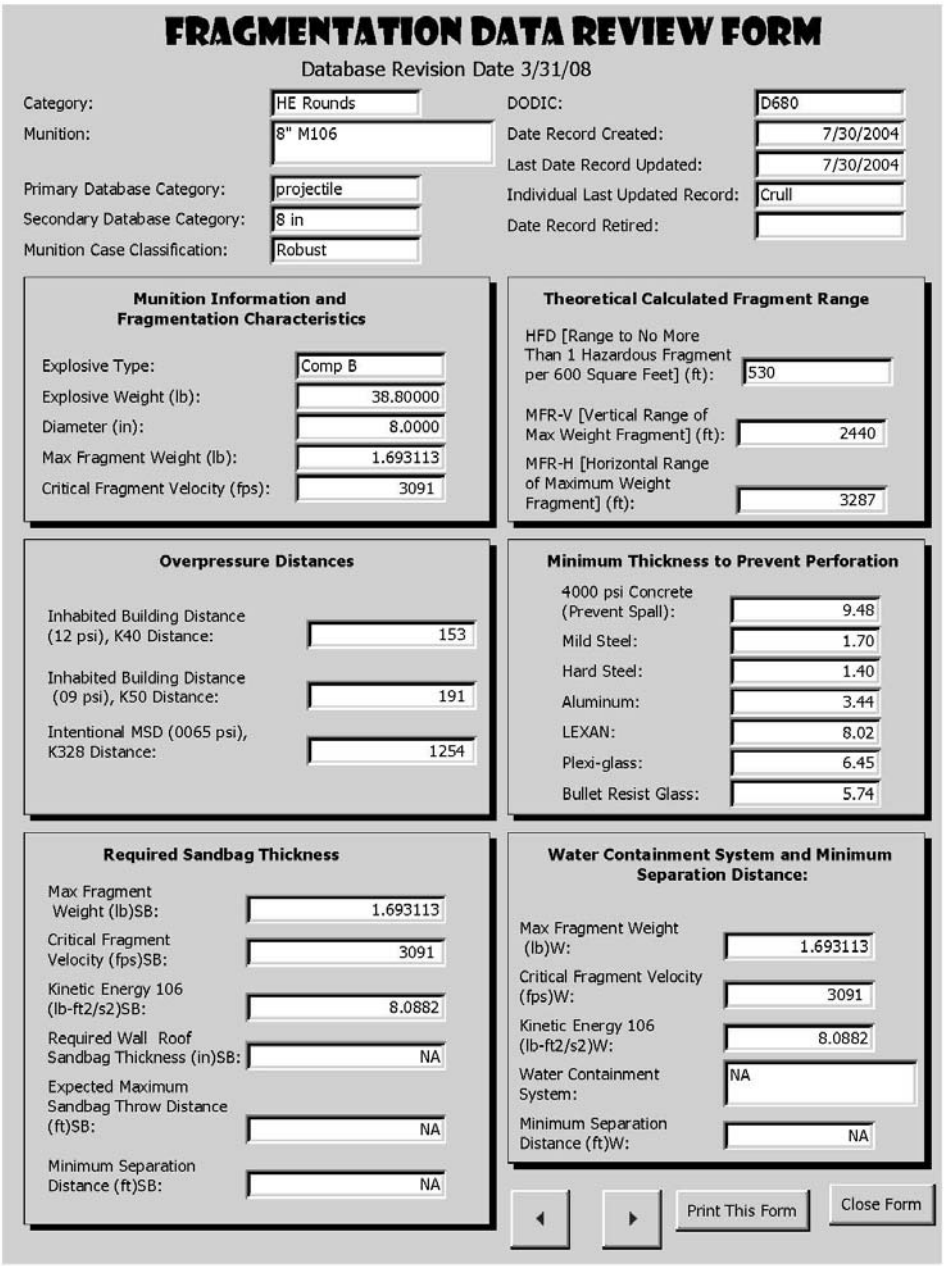
APPENDIX A
Figures

Figure 1 - Regional Site Figure

Figure 2 - Explosive Safety Quantity-Distance Arcs for Hazardous Fragment Distance

Figure 3 - Explosive Safety Quantity-Distance Arcs for Maximum Fragment Range-H

APPENDIX B
Fragmentation Calculation Sheets


FRAGMENTATION DATA REVIEW FORM
Database Revision Date 3/31/08
Category: HE Rounds
Munition: 8" M106
Primary Database Category: projectile
Secondary Database Category: 8 in
Munition Case Classification: Robust
DODIC: D680
Date Record Created: 7/30/2004
Last Date Record Updated: 7/30/2004
Individual Last Updated Record: Crull
Date Record Retired:
Munition Information and Fragmentation Characteristics
Explosive Type: Comp B
Explosive Weight (lb): 38.80000
Diameter (in): 8.0000
Max Fragment Weight (lb): 1.693113
Critical Fragment Velocity (fps): 3091
Theoretical Calculated Fragment Range
HFD [Range to No More Than 1 Hazardous Fragment per 600 Square Feet] (ft): 530
MFR-V [Vertical Range of Max Weight Fragment] (ft): 2440
MFR-H [Horizontal Range of Maximum Weight Fragment] (ft): 3287
Overpressure Distances
Inhabited Building Distance (12 psi), K40 Distance: 153
Inhabited Building Distance (09 psi), K50 Distance: 191
Intentional MSD (0065 psi), K328 Distance: 1254
Minimum Thickness to Prevent Perforation
4000 psi Concrete (Prevent Spall): 9.48
Mild Steel: 1.70
Hard Steel: 1.40
Aluminum: 3.44
LEXAN: 8.02
Plexi-glass: 6.45
Bullet Resist Glass: 5.74
Required Sandbag Thickness
Max Fragment Weight (lb)SB: 1.693113
Critical Fragment Velocity (fps)SB: 3091
Kinetic Energy 106 (lb-ft2/s2)SB: 8.0882
Required Wall Roof Sandbag Thickness (in)SB: NA
Expected Maximum Sandbag Throw Distance (ft)SB: NA
Minimum Separation Distance (ft)SB: NA
Water Containment System and Minimum Separation Distance:
Max Fragment Weight (lb)W: 1.693113
Critical Fragment Velocity (fps)W: 3091
Kinetic Energy 106 (lb-ft2/s2)W: 8.0882
Water Containment System: NA
Minimum Separation Distance (ft)W: NA
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