SECTION 6
EXPLOSIVES SITING PLAN

6.0.a This chapter outlines the procedures that will be used to perform MEC identification and disposal operations at the former Trabuco Bombing Range, California, and describes the safety criteria to be employed during the operations.

6.1 MUNITIONS RESPONSE SITE

6.1.a The RI area for the site is identified in Chapter 3, and constitutes the Munitions Response Site (MRS).

6.2 MINIMUM SEPARATION DISTANCES

6.2.a As noted in Chapter 3, none of the munitions identified for the site are fragment producing; therefore, there is no MGFD. However, if fragmentation-producing Munitions and Explosives of Concern (MEC) is found, the Quantity/Distance (QD) arcs will be adjusted or created as required and an amendment to the Work Plan/ESP will be submitted for approval.

6.2.b The MSD for unintentional detonations shall be the greater of 200 feet or the K50 distance. The MSD for intentional detonations will be K328 of the total NEW of the disposal shot (includes the donor charge). Engineering controls will be used for all intentional detonations IAW HNC-ED-CS-S-98-7 - Use of Sandbags for Mitigation of Fragmentation and Blast Effects Due to Intentional Detonation of Munitions.

6.3 DEMOLITION AREAS

6.3.a Whenever possible the recovered item(s) will be moved to the on site explosives storage magazine awaiting disposal at the end of the project or when the magazine's stated NEW capacity is reached, if sooner. The demolition area indicated on Figure 6.1 will be used for all demolition, with the exception of any UXO items that can not be moved and must be blown-in-place. The proposed demolition area will be developed and used IAW EP 1110-1-17, *Establishing a Temporary Open Burn and Open Detonation Site for Conventional Ordnance and Explosives Projects* and HNC-ED-CS-S-98-7, *Use of Sandbags for Mitigation of Fragmentation and Blast Effects Due to Intentional Detonation of Munitions.*

6.4 FOOTPRINT AREAS

6.4.a There are three types of footprint areas: Blow-in-Place (BIP), ordnance collection points within a clearance area, and consolidated shots within a collection area.

6.4.b BIP will be used for ordnance items that are not acceptable to move. BIP demolition sites will exist where UXO items are found and detonated and those locations cannot be predicted. All blown-in-place UXO will be documented and their positions indicated on a demolition location map, which will be created and submitted with the final report.

6.4.c Table 6.1 deals with intentional detonation of munitions and/or explosives expected to be encountered during the investigation using Engineering Controls during the intentional detonation. If an ordnance item not listed in Table 6.2 is encountered, its MSD shall be determined in accordance with DDESB Technical Paper 16. Until distances are specified for the ammunition item, the default distances in TP 16 will be used.

TABLE 6.1
MINIMUM SEPARATION DISTANCE FOR ALL PERSONNEL DURING INTENTIONAL DETONATIONS

All Munitions	Maximum Sandbag Throw Range (feet)	Minimum Separation Distances for all Personnel (feet)	Thickness of Sandbags Required (inches)[1]
2.0-pound NEW	125	200	24

1. The sandbags must be placed at least six inches away from the MEC item being destroyed.

Note: The listed thickness of sandbags is the minimum thickness required to defeat design fragmentation and will be the minimum amount used in areas where potential damage to structures may occur.

Mission Viejo
Santa Margarita Parkway
Arroyo Trabuco Creek
Alicia Parkway
Arroyo Trabuco Creek
1,760' PTR
1,880' PTR
O'Neill Regional Park
Bike Trail
950' IBD
Magazine with 200 ft ESQD
Demolition Site with 200 ft MSD
1,150' IBD
Bike Trail
Rancho Santa Margarita

Legend

- Magazine
- Demolition Site
- 200' Minimum Separation Distance
- Creek
- RI Area

N
W E
S

400 200 0 400
Feet

For general reference purposes.
All locations are approximate.

Figure 6.1
Quantity and Distance Map

Former Trabuco Bombing Range
Rancho Santa Margarita, California

Innovative Technical Solutions, Inc.
PARSONS

U.S. Army Corps of Engineers, Los Angeles District

Project2004\04-981.01Trabuco\Graphics\Gordon\RIWP\Fig6.1 Q-D RevL.mxd

6.5 EXPLOSIVES STORAGE MAGAZINES

6.5.a Explosive demolition material will not be stored on the site at any time. It will be delivered as needed in the quantities requested by the SUXOS or UXOSO/UXOQCS for the destruction of specific items. A portable, Type II, BATF magazine will be located within a fenced area on site as shown on Figure 6.1, for the purpose of storing recovered MEC items. The magazine and surrounding area are characterized as follows:

- A 6-foot chain link fence will be constructed around the magazine to prevent unauthorized access and/or theft.
- The magazine will be bullet-resistant, fire-resistant, weather-resistant, theft-resistant, and ventilated. It will be supported to prevent direct contact with the ground, and the ground will be sloped away for drainage, or diversion ditches will be fabricated to divert any water away from the magazine.
- Hinges and hasps will be attached to the magazine doors by welding, riveting, or bolting (i.e., nuts on inside of door), and installed such that they cannot be removed when the doors are closed and locked.
- The door will be equipped with two padlocks fastened in separate hasps and staples. Padlocks will have at least five tumblers and a case-hardened shackle of at least 3/8-inch diameter. Padlocks will be protected with not less than 1/4-inch steel hoods constructed to prevent sawing or lever action on the locks, hasps, and staples.

6.5.b The NEW stored in the magazine will not exceed 10 pounds. Based on DoD Ammunition and Explosives Safety Standards (DoD 6055.9-STD, Table C9.T2) for 10-pounds NEW of Hazard Division (HD) 1.1 explosives, the hazard fragment distance (HFD)/safe separation distance from the structures column to inhabited buildings (IBD) and public traffic route (PTR) is 200 feet. The Class 1.1 distances were used to ensure that an ample separation distance is maintained in the event that MEC other than those anticipated are encountered. Table 6.2 lists the number of items containing the Mk 4 or Mk 5 Spotting Charge that can be stored in the magazine at any given time. The spotting charges are virtually the same for the various miniature / practice bombs; therefore, as long as the 10-pound NEW storage limit is not exceeded then any combination of the items listed in Table 6.2 can be stored at any given time.

6.5.c The IBD and PTR quantity distances illustrating the distances from the explosives storage magazine and the demolition area to the nearest IBD and PTR are shown on the QD Map, Figure 6.1.

TABLE 6.2
SPOTTING CHARGE MAXIMUM STORAGE QUANTITIES

No.	Nomenclature	NEW	Items per 10 Pounds NEW
1	Practice Bomb, 3-pound, Miniature, AN-MK23 (Mod 1), Mk 4 Spotting Cartridge (Mods 0, 1, 2, 3, and 4)	3g	1,500
2	Practice Bomb, 3-pound, Miniature, AN-MK5 (Mod 2 and 3), Mk 4 Spotting Cartridge (Mods 0, 1, 2, 3, and 4)	3g	1,500
3	Practice Bomb, 4.5-pound, Miniature, AN-MK 43 (Mod 1), Mk 4 Spotting Cartridge (Mods 0, 1, 2, 3, and 4)	3g	1,500
4	Bomb, 25-pound, Practice, MK 76/BDU 33 (Mods 0,1,and 2), Mk 4 Spotting Cartridge (Mods 0, 1, 2, and 3),	3g	1,500
4	Rocket, 2.25-inch, Practice, SCAR	N/A	N/A
5	Rocket, 3.5-inch, Practice	N/A	N/A
6	Rocket, 5-inch, Practice	N/A	N/A

6.5.1 Engineering Controls

6.5.1.a In areas where an acceptable MSD cannot be achieved, items acceptable to move may be moved to another area, with the concurrence of the USACE OE Safety Specialist, as long as the movement does not require transportation on public roads. If movement to another area is not possible, other methods of mitigation, such as berms, tamping, or sandbag barricades (in accordance with HNC-ED-CS-S-98-7), will be employed to reduce any possibility of a fragmentation hazard, even though these items are not fragment producing. If these methods of disposal are determined to be impractical, Parsons will notify the USACE OE Safety Specialist.

6.6 SITE MAP

6.6.a Figure 3.2 shows the proposed geophysical investigation areas.