

ATTACHMENT G4-1
EVALUATION OF PREVIOUS WORK CHECKLISTS

ATTACHMENT G4-1
EVALUATION OF PREVIOUS WORK: Group 4 Parcels, MRS-15 DRO 01A,
MRS-15 DRO 02A, MRS-43A, MRS-15 MOCO 01, MRS-46, Parcel L6.1
EVALUATION CHECKLIST PART 1: LITERATURE REVIEW

TYPE OF TRAINING AND MILITARY MUNITIONS EXPECTED

Yes No Inconclusive

1. Is there evidence that the site was used as an impact area (i.e., fired military munitions such as mortars, projectiles, rifle grenades or other launched ordnance)?

	No	
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Sources reviewed and comments

There is no evidence to indicate that the sites were used as an impact area. Training maps indicate that there were artillery ranges east and north of the area in 1945 and that the area to the east and north of the parcels was used as an impact area, with the direction of fire away from the parcels from 1945 until base closure. During sampling to the northwest of the parcels (portions of MRS-43) evidence of a 37mm impact area was identified; however no evidence of the 37mm impact area, was found in any of the parcels included in Group 4. In addition, 2.36-inch rockets were found on the surface of MRS-46 along with portions of practice rifle grenades. Evidence suggests that the 2.36-inch rockets were discarded items and do not indicate an impact area.

References

Army, 1945.

2. Is there historical evidence that training involved use of High Explosive (HE) or Low Explosive (LE) items?

Yes		
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Sources reviewed and comments

The 37mm training conducted adjacent to MRS-43A and L6.1 appeared to have used high explosive items.

References

USAEDH, 1997.

3. Is there historical evidence that training involved use of pyrotechnic and/or smoke producing items (e.g., simulators, flares, smoke grenades) but not explosives?

No		
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Sources reviewed and comments

No evidence of use of flares with the training identified.

References

USAEDH, 1997.

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Yes No Inconclusive

DEVELOPMENT AND USE OF THE SURROUNDING AREA

4. Does subsequent development or use of the area indicate that military munitions would have been used at the site?

		Inconclusive
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Sources reviewed and comments

Much of the area (MRS-43A, MRS-15MOCO 01, MRS-15 DRO 01A, MRS-15 DRO 02A, and Parcel L6.1) have not been developed. Development of MRS-46 (construction of athletic fields) occurred following base closure.

References

USAEDH, 1997; Aerial Photograph 2003.

5. Does use of area surrounding the site indicate that military munitions would have been used at the site?

		Inconclusive
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Sources reviewed and comments

The parcels included in Group 4 are all located on the edges of the former Impact area which would indicate the potential that military munitions could have been used in the area; however, the parcels are also located at the boundaries of the installation which would indicated that the areas would not have been used for military munitions because of encroachment issues. At a minimum, the areas would not be expected to have been used as impact areas, or areas where high explosives would have been used. It is possible that practice munitions could have been used in concurrent training areas.

References

Topographic Map, Camp Ord and Vicinity 1933-34; Aerial photograph 1941.

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Yes No Inconclusive

ESTABLISHMENT OF SITE BOUNDARIES

6. *Is there evidence of training areas on aerial photographs that could be used to establish boundaries?*

	No	
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Sources reviewed and comments

Review of aerial photographs from 1941 through 1999 do not show evidence of ranges within the Group 4 sites. A small area of disturbed ground is present to the west of MRS-43A, and a series of roads is present to the north and east of MRS-15 MOCO1 and MRS-46 in the 1941 and 1949 aerial photographs. A pattern of roads or trails is present along the boarder of MRS-46 and MRS-15 MOCO1 on the 1956 aerial photograph; however the pattern does not suggest use as a firing area.

References

Aerial photographs dated 7/25/1941; 8/17/1949; 5/14/1956; and 11/4/1988.

7. *Is there evidence of training on historical training maps that could be used to establish boundaries?*

	No	
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Sources reviewed and comments

With the exception of a small portion of a rifle night firing range shown on a 1956 Proposed Range Construction Map, no ranges are identified as overlapping the Group 4 sites. It should be noted that no evidence of a range is present on the 1956 aerial photograph.

References

Army 1945, 1954, 1956, 1957, 1958, 1964, 1972, 1976, and 1981.

8. *Should current boundaries be revised?*

	No	
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Sources reviewed and comments

The site boundaries are primarily based on reuse parcels, therefore, no changes to the boundaries are suggested.

References

USAEDH, 1997.

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TYPE OF TRAINING AND MILITARY MUNITIONS EXPECTED

Yes No Inconclusive

RESULTS OF LITERATURE EVALUATION

Does the literature review provide sufficient evidence to warrant further investigation?

Yes		
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Comments

Based on the location of the sites adjacent to the Impact area and the evidence of a possible 37mm impact area adjacent to MRS-43A additional investigation as discussed in sampling checklist was warranted.

References

USAEDH, 1993 and 1997; Aerial Photograph 1941; and Army, 1945.

References

Army, 1945. Training Facilities, Fort Ord and Vicinity, California. Revised August 1945.
 Army, 1933-34. Camp Ord and Vicinity Terrain Map.
 Army, 1954, Training Areas that Cannot be Used at the Same Time.
 Army, 1956, Map of Fort Ord Training Areas & Facilities, Enclosure I to Annex "O" Revisited.
 Army, 1957, Map of Fort Ord Training Areas & Facilities, Enclosure I to Annex "H" .
 Army, 1958, Map of Fort Ord Training Areas and Facilities, Enclosure I to "H", Revised.
 Army, 1964, Field Training Areas & Range Map, Fort Ord, Appendix 2, Annex O.
 Army, 1972, Field Training area and Range Map, Appendix 3, To Annex W, FT Ord Reg. 350-1.
 Army, 1976. Ranges and Training Area Overlay, Fort Ord and Vicinity. Appendix IV to Annex W, Fort Ord Reg. 350-1.
 Army, 1981, Ranges and Training Area Overlay, Fort Ord and Vicinity, Appendix B to Fort Ord Reg. 350-5.
 USAEDH, 1997. Revised Archives Search Report, Former Fort Ord, California, Monterey County, California. Prepared by US Army Corps of Engineers St. Louis District.

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 EVALUATION CHECKLIST PART 2: SAMPLING EVALUATION**

TYPE OF TRAINING AND MILITARY MUNITIONS EXPECTED

Yes No Inconclusive

1. Is there evidence that the site was used as an impact area (i.e., fired military munitions such as mortars, projectiles, rifle grenades and other launched military munitions)?

	No	
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Sources reviewed and comments

Practice rifle grenade parts and 2.36-inch rockets were located within MRS-46; however all were found at the surface and appear to be discarded items. No MEC or MD was found within the other MRS sites. 37mm projectiles were found within MRS-43; however, no 37mm projectiles or fragments were found within MRS-43A. or Parcel 6.1.

References

USA, 2000a,b; USA, 2001a,b,c; Parsons 2002a, b.

2. Is there evidence that training involved use of High Explosive (HE) or Low Explosive (LE) items?

		Inconclusive
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Sources reviewed and comments

2.36-inch rockets were found within MRS-46. These are high explosive items; however, at least 2 of these items appear to be discarded at the site, not fired. Information on the condition of the third rocket is not available.

References

USA, 2000b.

3. Is there evidence that training involved use of pyrotechnic and/or smoke-producing items (e.g., simulators, flares, smoke grenades) but not explosives?

No		
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Sources reviewed and comments

No evidence of smoke-producing or pyrotechnic items has been found.

References

USA, 2000a,b; USA, 2001a,b,c; Parsons 2002a,b.

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EVALUATION CHECKLIST PART 2: SAMPLING EVALUATION

TYPE OF TRAINING AND MILITARY MUNITIONS EXPECTED

	Yes	No	Inconclusive
4. Was sampling and/or reconnaissance performed within the appropriate area?	Yes		

Sources reviewed and comments

Sampling was performed to evaluate potential for MEC within reuse parcel boundaries. Sampling was completed within the selected parcel boundaries.

References

USA, 2000a,b; USA, 2001a,b,c; Parsons 2002a,b.

5. Does sampling indicate MEC and/or munitions debris are present at the site?	Yes		
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Sources reviewed and comments

MEC (Three 2.36-inch rockets, and 1 grenade fuze) and munitions debris (M11 practice rifle grenades and M30 practice hand grenades). MEC items found in MRS-46 only.

References

USA, 2000a,b; USA, 2001a,b,c; Parsons 2002a,b.

6. Were the type(s) of items found consistent with the type of training identified for the site?	Yes		
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Sources reviewed and comments

The items found within MRS-46 were consistent with the types of training that took place within the Impact area just north of the site.

References

USA, 2000a,b; USA, 2001a,b,c; Parsons 2002a,b.

7. Were the type(s) of items found consistent with the era(s) in which training was identified?	Yes		
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Sources reviewed and comments

Items found are consistent with training in the 1940s through 1970s.

References

USA, 2000a,b; USA, 2001a,b,c; Parsons 2002a,b.

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TYPE OF TRAINING AND MILITARY MUNITIONS EXPECTED

	Yes	No	Inconclusive
8. Was HE fragmentation found?		No	

Sources reviewed and comments

No HE fragmentation was found. Three 2.36-inch rockets and one tail boom found in MRS-46; however, no fragmentation was found.

References

USA, 2000a,b; USA, 2001a,b,c; Parsons 2002a,b.

9. Was HE found?		No	
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Sources reviewed and comments

Three 2.36-inch rockets were found in MRS-46; however, no fragmentation was found.

References

USA, 2000a,b; USA, 2001a,b,c; Parsons 2002a,b.

10. Were LE found?		No	
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Sources reviewed and comments

No LE items were found in any of the Group 4 sites.

References

USA, 2000a,b; USA, 2001a,b,c; Parsons 2002a,b.

11. Were pyrotechnics found?		No	
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Sources reviewed and comments

No pyrotechnic items were found within any of the Group 4 sites.

References

USA, 2000a,b; USA, 2001a,b,c; Parsons 2002a,b.

12. Were smoke producing items found?		No	
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Sources reviewed and comments

No smoke producing items were found within any of the Group 4 sites.

References

USA, 2000a,b; USA, 2001a,b,c; Parsons 2002a,b.

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TYPE OF TRAINING AND MILITARY MUNITIONS EXPECTED

	Yes	No	Inconclusive
13. Were explosive items found (e.g., rocket motors with explosive components, fuzes with explosive components)?		No	

Sources reviewed and comments
 No additional explosive items were found.

References
 USA, 2000a,b; USA, 2001a,b,c; Parsons 2002a,b.

	Yes		
14. Do items found in the area indicate training would have included use of training items with energetic components?	Yes		

Sources reviewed and comments
 Items found indicate that practice hand grenade training may have occurred in a portion of MRS-46.

References
 USA, 2000a,b; USA, 2001a,b,c; Parsons 2002a,b.

15. Were items found in a localized area (possibly the remnants of a cleanup action)?			Inconclusive
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Sources reviewed and comments
 The area around the hand grenade fuzes and practice hand grenades was not fully swept; therefore, it is not possible to tell if the finds were the result of a cleanup action. Two unfired 2.36-inch rockets found next to each other may have been moved to or placed at this location as a result of a cleanup action.

References
 USA, 2000a,b; USA, 2001a,b,c; Parsons 2002a,b.

16. Has the site been divided into sectors to focus on areas of common usage, similar topography and vegetation, and/other unique site features?		No	
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Sources reviewed and comments
 The site was not divided into sectors based on site usage or site features.

References
 USA, 2000a,b; USA, 2001a,b,c; Parsons 2002a,b.

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TYPE OF TRAINING AND MILITARY MUNITIONS EXPECTED

Yes No Inconclusive

17. Should current site boundaries be revised?

	No	
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Sources reviewed and comments

Current site boundaries are based on existing parcel boundaries and should not be modified.

References

None.

18. Was equipment used capable of detecting items suspected at the site at the maximum expected depth?

Yes		
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Sources reviewed and comments

The types of items that might be expected at MRS-46 (Rifle grenades, practice hand grenades, and fuzes, and 2.36-inch rockets) are detectable using the Schonstedt 52Cx and the EM-61 based on the results of the ODDS. The types of items that might be present at MRS-43A (37mm projectiles) are also detectable using the Schonstedt 52CX; however, detection capabilities below about a foot drop off. QA associated with EM-61 use at MRS-46 indicated that detection of hand grenades and grenade fuzes may be problematic in MRS-46.

References

USA, 2000b; USAESCH, 1997; Parsons, 2001.

19. Was equipment used capable of detecting the types of items (e.g., non-ferrous) suspected at the site?

	No	
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Sources reviewed and comments

Items that could be present on the site that contain mostly non-ferrous material (grenade fuzes) would likely be found at or near the surface, therefore, the reduced detection capability for these types of items should not be significant.

References

USA, 2000; Parsons, 2001.

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TYPE OF TRAINING AND MILITARY MUNITIONS EXPECTED

20. Do the results of the ODDS indicate that items suspected at the site would have been detected by the instrument used at the time of investigation?

Yes	No	Inconclusive
		Inconclusive

Sources reviewed and comments

The results of the ODDS seeded test indicate that the items suspected at the site, (practice hand grenades, fuzes, practice rifle grenades, 2.36-inch rockets, and 37mm projectiles) and used in the ODDS study, were all detectable in the top 6 inches using a Schonstedt 52CX; however, the detection rates drop between 6 inches and 1 foot bgs and to zero for some items below 2 feet. The ODDS seeded test also indicated that the suspected items were also detectable using the EM61.

References

USA, 2000b; Parsons, 2001.

21. Do results of the investigation indicate that suspected items could be detected with a high level of confidence at observed and expected depth ranges?

		Inconclusive
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Sources reviewed and comments

Although not directly comparable to the Group 4 sites, results of the ODDS suggest that the equipment used should be able to detect ferrous MEC to a depth of 2 feet bgs, however seeding of grenades and fuzes associated with QA efforts at MRS-46 indicate that the EM-61 may not be as good at detecting those items as the Schonstedt GA-52Cx.

References

USA, 2000b; Parsons, 2001.

22. Were all the instruments used to evaluate the site maintained and calibrated in accordance with associated work plan and manufacturer's specifications?

Yes		
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Sources reviewed and comments

As stated in the AARs for the work completed at each of the sites, "Each magnetometer was tested each morning and field tested after lunch to determine that it was operating correctly".

References

USA, 2000a,b; USA, 2001a,b,c; Parsons 2002a,b.

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EVALUATION CHECKLIST PART 2: SAMPLING EVALUATION**

TYPE OF TRAINING AND MILITARY MUNITIONS EXPECTED

23. Based on the anticipated target density (MEC items per acre) has the minimal amount of sampling acreage been completed in accordance with the scope of work or contractor work plan?

Yes	No	Inconclusive
		Inconclusive

Sources reviewed and comments

There is no anticipated density of items. With the exception of the practice hand grenades and fuzes, the items detected were either inert or appear to be discarded.

References

USA, 2000a,b; USA, 2001a,b,c; Parsons 2002a,b.

24. Based on sampling procedure (e.g., grids, transects, and/or random walks) was a percentage of the site completed to provide 95% confidence in a MEC density estimate, and if so, provide total area investigated and the MEC density estimate.

		Inconclusive
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Sources reviewed and comments

Based on the information provided in the After Action Reports, sampling and visual surface clearance have been conducted over the majority of MRS-15MOCO 01 and MRS-46, and sampling at MRS-15 DRO 02A. Smaller portions of MRS-43A and Parcel L6.1 were investigated using SS/GS sampling methodologies. MRS-15DRO 01A was not investigated. Based on this information it is not possible to provide a confidence level; however, the data collected is thought to be adequate to characterize the site.

Total Area: Approx. 35,000 sq. ft	
MEC Density:	Not calculated

References

USA, 2000a,b; USA, 2001a,b,c; Parsons 2002a,b.

25. What percentage of the anomalies were intrusively investigated?

Sources reviewed and comments

All anomalies detected were intrusively investigated except for the SS/GS sampling performed at MRS-43A and Parcel L6.1. For these sites 48 percent of the anomalies were investigated.

References

USA, 2000a,b,and 2001a,b,c.

Total % of anomalies investigated	100% 100 percent sampling
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TYPE OF TRAINING AND MILITARY MUNITIONS EXPECTED

	Yes	No	Inconclusive
26. Was the appropriate data processing scheme used for the site, how was the data processed?	Yes		

Sources reviewed and comments

All EM61 data was processed according to the approved work plan for the site (MRS-46 and MRS-1 DRO 02A).

References

USA, 2000b.

27. Has the field data been collected and managed in accordance with quality control standards established for the project?			Inconclusive
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Sources reviewed and comments

According to the After Action Reports, all work was completed without QC deficiencies.

References

USA, 2000a,b; USA, 2001a,b,c; Parsons 2002a,b.

Result of Sampling Evaluation

Does the sampling evaluation provide sufficient evidence to warrant further investigation?		No	
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Comments

Sampling was performed within the digitized boundaries of the site. The sampling effort provides sufficient information regarding the type, presence, and density of MEC items in the site vicinity if they were present.

References

Parsons, 2001. Draft Ordnance Detection and Discrimination Study (ODDS), Former Fort Ord, Monterey, California. August.

Parsons, 2002a, Final Technical Information Paper, Surface Removal, Ordnance and Explosives (OE) Site, OE-15MOCO.1.

Parsons, 2002b, Final Technical Information Paper, Surface Removal, Ordnance and Explosives (OE) Site, OE-46.

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EVALUATION CHECKLIST PART 2: SAMPLING EVALUATION

TYPE OF TRAINING AND MILITARY MUNITIONS EXPECTED

	Yes	No	Inconclusive
References (continued)			
USA Environmental, Inc., (USA) 2000a. Final After Action Report, 100% Grid Sampling, Inland Range Contract, Former Fort Ord, California, Site OE-15B.			
USA Environmental, Inc., (USA) 2000b. Draft Final After Action Report, OE Sampling and Investigation in OE-46 and the York School Lease Area, Inland Range Contract, Former Fort Ord, California.			
USA Environmental, Inc., (USA) 2001a. Gridstats/Sitestats Sampling After Action Report, Inland Range Contract, Former Fort Ord, California, Site OE-43 and OE-15DRO.1.			
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USA Environmental, Inc., (USA) 2001c. Final 100% Grid Sampling 4' Removal, Site OE-15 Seaside 1-4 and MOCO 1 & 2, After Action Report, Inland Range Contract, Former Fort Ord, California.			
USAEDH, 1997. Revised Archives Search Report, Former Fort Ord, California, Monterey County, California. Prepared by US Army Corps of Engineers St. Louis District. HLA#33006.			
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