

Appendix G
GPO Tractor Report

**Addendum Geophysical Prove-Out
Using a Tractor Tow Vehicle
At the ODDS Plot GPO Site for
MRS-16 Munitions and Explosives of Concern
Removal Project
Former Fort Ord, California**

**Total Environmental Restoration Contract
Contract No. DACW05-96-D-0011
Task Order No. 016**

Submitted to:
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Corps of Engineers
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March 2007

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Uncontrolled

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List of Acronyms and Abbreviations

GPO	Geophysical Prove-Out
MRS	Munitions Response Site
ODDS	Ordnance Detection and Discrimination Study

1.0 Introduction

This short summary report presents the general results of an Addendum Geophysical Prove-Out (GPO) that was conducted at the Ordnance Detection and Discrimination Study (ODDS) Plots at Badger Flats for the Munitions Response Site (MRS)-16 removal action at Former Fort Ord, Monterey County, California. Due to the lack of a tow vehicle, the first GPO was conducted with a pickup truck. The results of that study were published in the GPO report issued by Shaw Environmental, Inc. in January 2007.

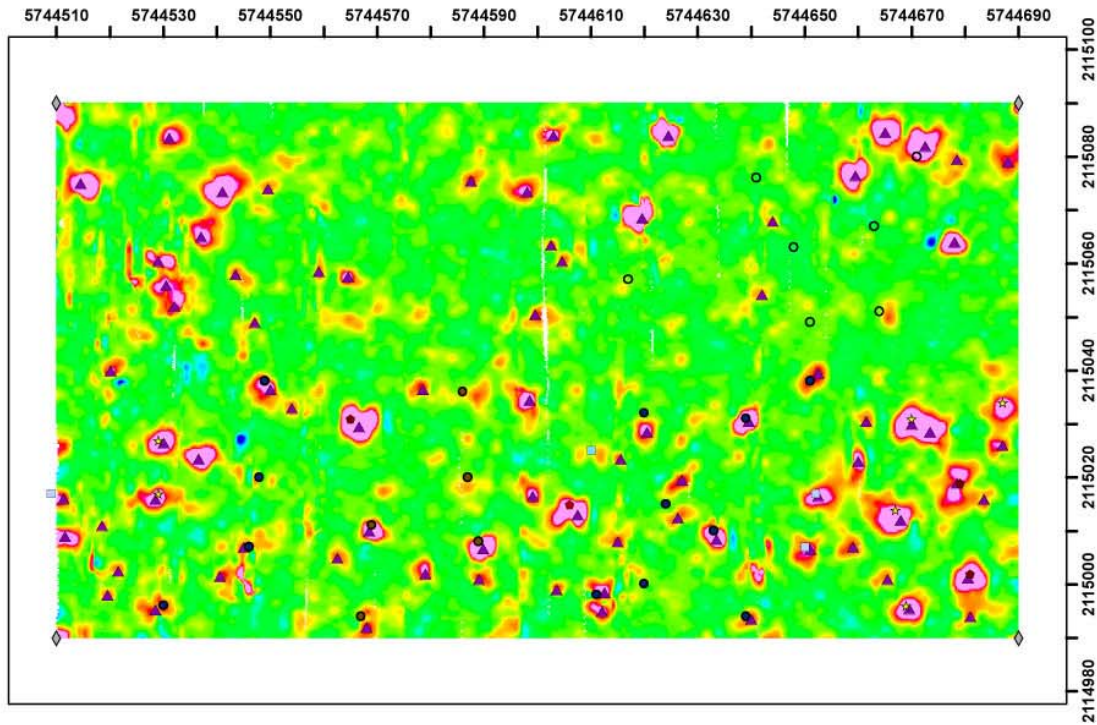
It was decided that the tow vehicle most appropriate for towing the sensor array at MRS-16 would be a small farm tractor. Shaw used a New Holland TC40 for the tow tractor. The GPO was conducted with the tractor prior to beginning any production work at MRS-16 in early January 2007.

All of the pertinent information related to the GPO test plots (ODDS Plots) are outlined in detail in the original GPO report entitled “MRS 16 Geophysical Prove-Out Report Former Fort Ord, California” (Shaw, 2007). The purpose of this short addendum report is to generally present the overall results of the GPO data using the tractor.

The geophysical prove-out procedures, geophysical data processing, and data quality objectives, are identical to the original GPO in this addendum GPO. The original GPO report can be referenced for that information. It is the intention of this short addendum report to display the data and results.

2.0 Results of Addendum Geophysical Prove-Out

The processed geophysical data for Known Plots 1 and 2, as well as, Unknown Plots 1 and 2 are shown on [Figures 1](#) through on the following pages 2 through 5. The DQOs outlined in the original GPO report were met for all ODDS Plots. This was confirmed by the QC geophysicist. After the first tractor pass over the ODDS Plots some minor fill-in data was required to achieve the DQOs. This was done with a single EM61 MK2 system.



Seed Items:

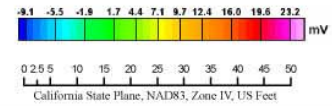
- | | | | |
|-----------------------------|-----------------------------------|------------------------------|--|
| ○ 105mm Smoke | ● 35mm Practice Sub-caliber M73 | ● 90mm | ■ M9 AT Practice Rifle Grenade (Head Only) |
| ● 2.36mm Practice M7 Series | ◆ 37mm AP-T M-51 | ○ Empty Hole | ★ 81mm M4 Illumination Practice Mortar |
| ● 25mm | ● 75mm Shrapnel MK I Cases Only | ● Fragment | ★ M125 M126 M127 Signals Illumination |
| ● 3 inch Stokes Mortar | ● 81mm Mortar Target Practice M43 | ■ MK-2 Practice Hand Grenade | ● 2.36mm Practice M7 Series (Head Only) |

Figure 1
EM61-MKII DGM Data
Former Fort Ord, California

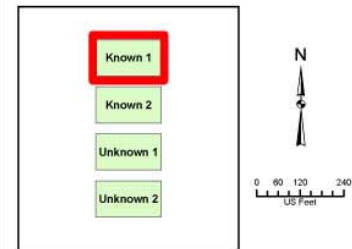
The ODDS Plots
Known Plot 1

Legend:

- ▲ Target Picks
- ◆ Survey Grid Corners



Map Inset - ODDS Plot Locations



Client: USACE - Sacramento District

Project: Former Fort Ord MMRP

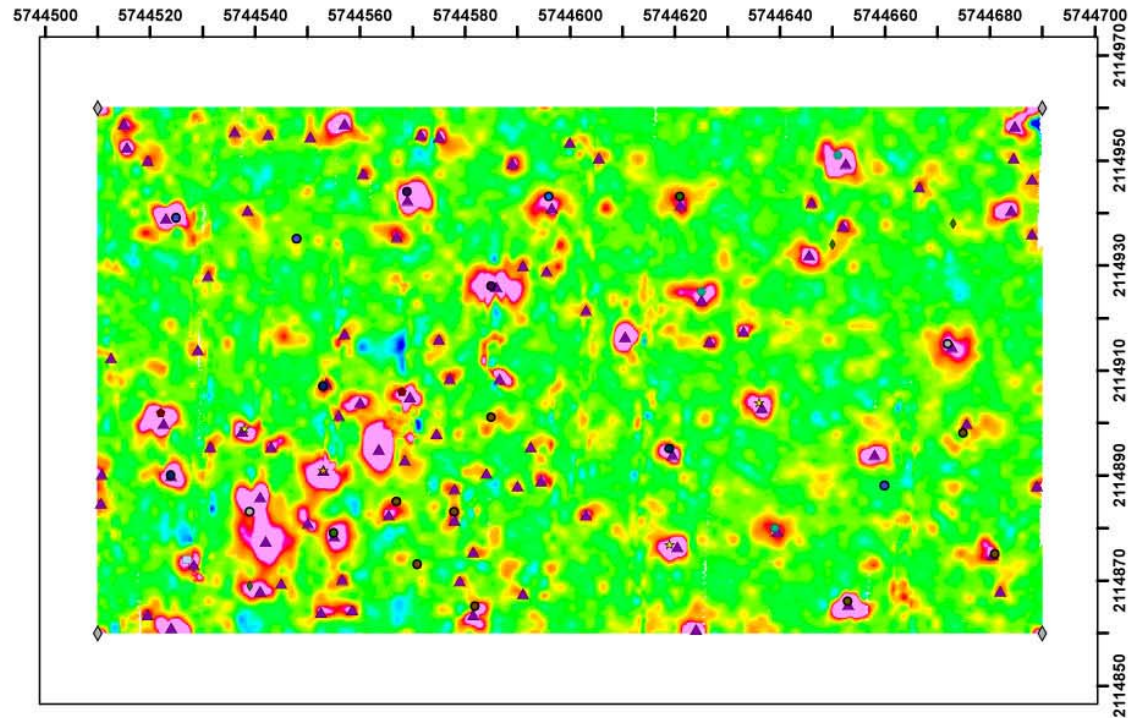
Contractor: Shaw Environmental Inc.

Created By: CTC

Date: 2/19/07

Approved By:





Seed Items:

- 105mm Smoke
- 2.36mm Practice M7 Series
- 25mm
- 3 inch Stokes Mortar
- 35mm Practice Sub-caliber M73
- ◆ 37mm AP-T M-51
- 75mm Shrapnel MK I Cases Only
- 81mm Mortar Target Practice M43
- 90mm
- Empty Hole
- Fragment
- MK-2 Practice Hand Grenade
- M9 AT Practice Rifle Grenade (Head Only)
- ★ 81mm M4 Illumination Practice Mortar
- ★ M125 M126 M127 Signals Illumination
- 2.36mm Practice M7 Series (Head Only)

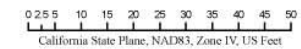
Figure 2
EM61-MKII DGM Data
Former Fort Ord, California

The ODDS Plots
Known Plot 2

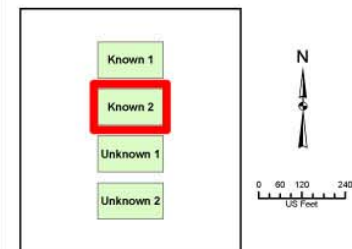
Legend:

▲ Target Picks

◆ Survey Grid Corners



Map Inset - ODDS Plot Locations



Client: USACE - Sacramento District

Project: Former Fort Ord MMRP

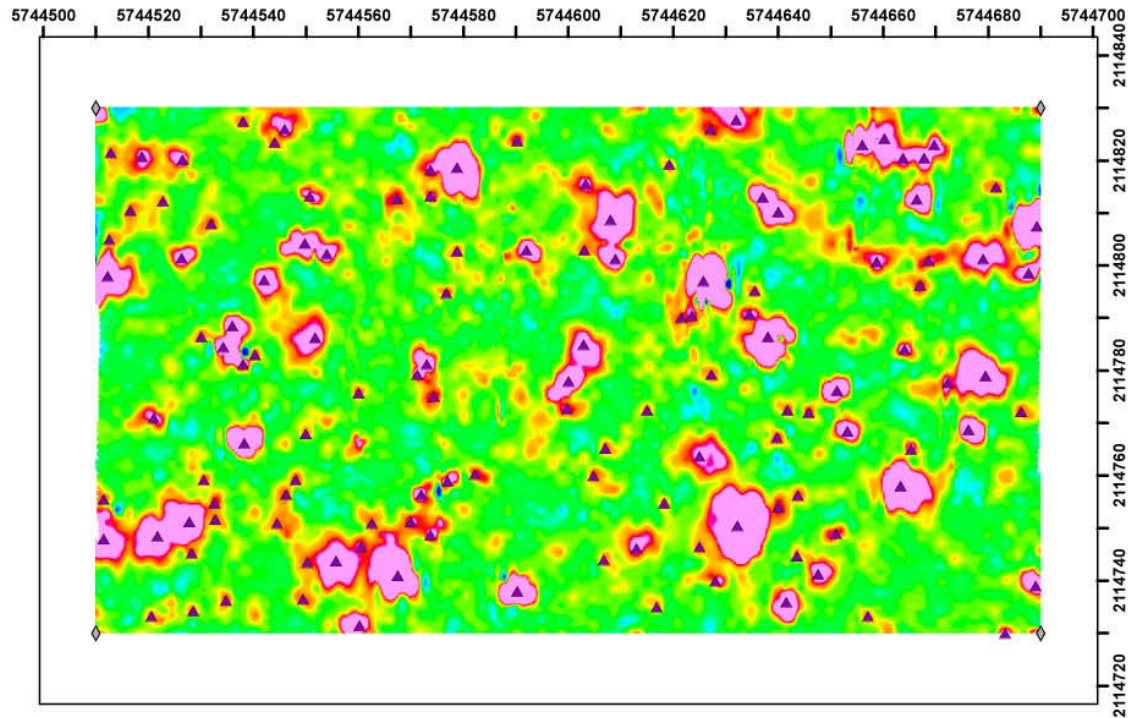
Contractor: Shaw Environmental Inc.

Created By: CTC

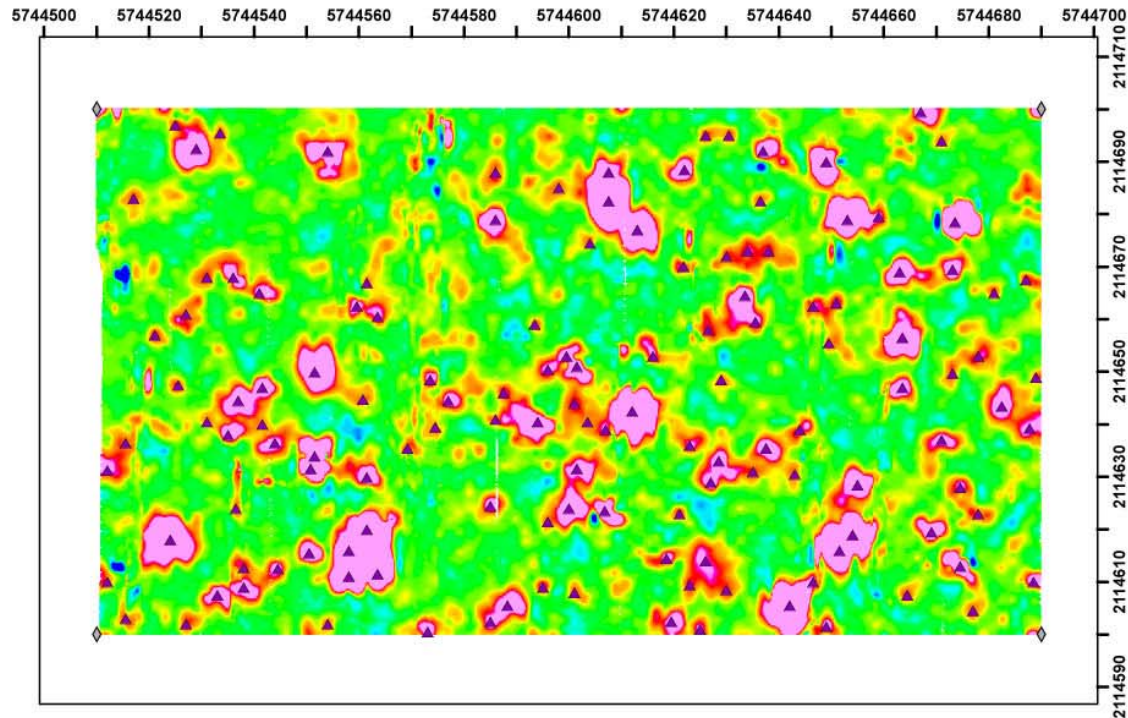
Date: 2/19/07

Approved By:





<p>Figure 3 EM61-MKII DGM Data Former Fort Ord, California</p>	
<p>The ODDS Plots Unknown Plot 1</p>	
<p>Legend:</p> <ul style="list-style-type: none"> ▲ Target Picks ◇ Survey Grid Corners <p>0 2.5 5 10 15 20 25 30 35 40 45 50 California State Plane, NAD83, Zone IV, US Feet</p>	
<p>Map Inset - ODDS Plot Locations</p>	
<p>Client: USACE - Sacramento District</p>	
<p>Project: Former Fort Ord MMRP</p>	
<p>Contractor: Shaw Environmental Inc.</p>	
<p>Created By: CTC</p>	
<p>Date: 2/19/07</p>	
<p>Approved By:</p>	



<p>Figure 4 EM61-MKII DGM Data Former Fort Ord, California</p>	
<p>The ODDS Plots Unknown Plot 2</p>	
<p>Legend:</p> <ul style="list-style-type: none"> ▲ Target Picks ◆ Survey Grid Corners <div style="text-align: center;"> <p>California State Plane, NAD83, Zone IV, US Feet</p> </div>	
<p>Map Inset - ODDS Plot Locations</p> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;"> <p style="text-align: center; background-color: #d9ead3;">Known 1</p> <p style="text-align: center; background-color: #d9ead3;">Known 2</p> <p style="text-align: center; background-color: #d9ead3;">Unknown 1</p> <p style="text-align: center; border: 2px solid red; background-color: #d9ead3;">Unknown 2</p> </div> <div style="text-align: center;"> </div> </div>	
<p>Client: USACE - Sacramento District</p>	
<p>Project: Former Fort Ord MMRP</p>	
<p>Contractor: Shaw Environmental Inc.</p>	
<p>Created By: CTC</p>	
<p>Date: 2/19/07</p>	
<p>Approved By:</p>	

The geophysical data from this addendum GPO are extremely similar to the data from the original GPO. The table below provides a summary of the Original and Addendum GPO results in terms of the number of targets. Most of the targets are the same as the original GPO. Targets were selected using a threshold of 14 mV and filtered using the decay method outlined in the GPO report.

	<u><i>Original GPO</i></u>	<u><i>Addendum GPO</i></u>
Known Plot 1	82	81
Known Plot 2	101	98
Unknown Plot 1	126	128
Unknown Plot 2	135	136

Item 601 (Known Plot 1) was not picked in the Addendum GPO because it had a response that was lower than 14 mV. This is likely due to the changed physical conditions at the ODDS Plots. Item 587 (Known Plot 1) was gained in the Addendum GPO which was not picked in the original GPO. Seed item 568 (Known Plot 2) was also gained in the Addendum GPO which was not picked in the original GPO. In general, the results of the Addendum GPO are extremely comparable to the original GPO and even exhibited slightly better performance.