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Laura O'Donnell, David Crispo, P.E.

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150 Royall Street
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U.S. Army Corps of Engineers
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14. ABSTRACT
This Remedial Investigation (RI) Report presents the findings and conclusions of the RI field activities conducted at RVAAP-050-R-01 Atlas Scrap Yard Munitions Response Site (MRS) between June and October 2011 at the former Ravenna Army Ammunition Plant. The purpose of the RI was to determine whether the Atlas Scrap Yard MRS warrants further response action pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and the National Oil and Hazardous Substances Pollution Control Plan. More specifically, the RI was intended to determine the nature and extent of munitions and explosives of concern (MEC) and munitions constituents (MC) and subsequently determine the likely hazards and risks posed to human and environment receptors by MEC and MC. This RI Report also presents additional data to support the identification and evaluation of alternatives in the Feasibility Study (FS), if required. This RI report was prepared in accordance with the Army's Final Military Munitions Response Program Munitions Response RI/FS Guidance dated November 2009.

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CB&I Federal Services LLC has completed the *Final Remedial Investigation Report for RVAAP-050-R-01 Atlas Scrap Yard MRS* at the former Ravenna Army Ammunition Plant, Ravenna, Ohio. Notice is hereby given that an independent technical review has been conducted that is appropriate to the level of risk and complexity inherent in the project. During the independent technical review, compliance with established policy, principles, and procedures, utilizing justified and valid assumptions, was verified. This included review of data quality objectives; technical assumptions; methods, procedures and materials to be used; the appropriateness of data used and level of data obtained; and reasonableness of the results, including whether the product meets customer's needs consistent with law and existing United States Army Corps of Engineers policy.

Reviewed/Approved by: ______________________ Date: March 12, 2014
David Cobb
Project/Program Manager

Reviewed/Approved by: ______________________ Date: March 12, 2014
David Crispo, P.E.
Technical/Regulatory Lead

Prepared/Approved by: ______________________ Date: March 12, 2014
Laura O'Donnell
Project Engineer

Final Remedial Investigation Report for RVAAP-050-R-01 Atlas Scrap Yard MRS Version 1.0

Former Ravenna Army Ammunition Plant
Ravenna, Ohio

Contract No. W912DR-09-D-0005
Delivery Order 0002

Prepared for:

US Army Corps of Engineers®

U.S. Army Corps of Engineers
Baltimore District
10 S. Howard Street, Room 7000
Baltimore, Maryland 21201

Prepared by:

CB&I Federal Services LLC
150 Royall Street
Canton, Massachusetts 02021

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ARNG—Army National Guard
CB&I—CB&I Federal Services LLC
Ohio EPA—Ohio Environmental Protection Agency
RVAAP—former Ravenna Army Ammunition Plant
USACE—U.S. Army Corps of Engineers

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Acronyms and Abbreviations

°F	degrees Fahrenheit
AEDB-R	Army Environmental Data Base Restoration Module
AMEC	AMEC Earth and Environmental, Inc.
AOC	area of concern
ARAR	applicable or relevant and appropriate requirement
ARNG	Army National Guard
ASR	*Final Archives Search Report*
bgs	below ground surface
Camp Ravenna	Camp Ravenna Joint Military Training Center
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
COC	chemical of concern
CSM	conceptual site model
CTT	Closed, Transferring, and Transferred
DERP	Defense Environmental Response Program
DGM	digital geophysical mapping
DID	Data Item Description
DoD	Department of Defense
DQO	data quality objective
e^2M	engineering-environmental Management, Inc.
EPA	U.S. Environmental Protection Agency
ERA	ecological risk assessment
FS	Feasibility Study
FWSAP	*Facility-Wide Sampling and Analysis Plan for Environmental Investigations at the RVAAP*
GPS	global positioning system
HA	hazard assessment
HHRA	human health risk assessment
HRR	*Final Historical Records Review*
IVS	instrument verification strip
IRP	Installation Restoration Program
lb	pound
MC	munitions constituents
MD	munitions debris
MEC	munitions and explosives of concern
MKM	MKM Engineers, Inc.
mm	millimeter
MMRP	Military Munitions Response Program
MPPEH	material potentially presenting an explosive hazard
MRS	munitions response site
MRSPP	*Munitions Response Site Prioritization Protocol*
mV	millivolt(s)

Acronyms and Abbreviations (continued)

NCP	National Oil and Hazardous Substances Pollution Contingency Plan
OHARNG	Ohio Army National Guard
Ohio EPA	Ohio Environmental Protection Agency
PRG	Preliminary Remediation Goal
QC	quality control
RI	Remedial Investigation
RTK	real-time kinematic
RVAAP	former Ravenna Army Ammunition Plant
SAIC	Science Applications International Corporation
Shaw	Shaw Environmental & Infrastructure, Inc.
SI	site inspection
SI Report	*Final Site Inspection Report*
SRC	site-related chemical
SVOC	semivolatile organic compound
TBC	to be considered
U.S.	United States
USACE	U.S. Army Corps of Engineers
USP&FO	U.S. Property and Fiscal Officer
UXO	unexploded ordnance
Work Plan	*Final Work Plan for MMRP Remedial Investigation Environmental Services*

EXECUTIVE SUMMARY

This Remedial Investigation (RI) Report documents the findings and conclusions of the RI field activities for the Atlas Scrap Yard (RVAAP-050-R-01) Munitions Response Site (MRS) located at the former Ravenna Army Ammunition Plant (RVAAP) in Ravenna, Ohio. This RI Report was prepared by CB&I Federal Services LLC under Delivery Order 0002 for Military Munitions Response Program environmental services at the facility under the *Multiple Award Military Munitions Services Performance-Based Acquisition* Contract No. W912DR-09-D-0005. The Delivery Order was issued by the United States (U.S.) Army Corps of Engineers (USACE), Baltimore District on May 27, 2009.

The purpose of the RI was to determine whether the Atlas Scrap Yard MRS warrants further response action pursuant to the Comprehensive Environmental Responsibility, Compensation, and Liability Act of 1980 (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan. More specifically, the RI was intended to determine the nature and extent of munitions and explosives of concern (MEC) and munitions constituents (MC) and to subsequently determine the potential hazards and risks posed to likely human and ecological receptors by MEC and MC.

ES.1 MRS Description

Whenever possible, existing information and data were incorporated into this RI Report. Background information related to the MRS was taken from the *Final Archival Search Report* (USACE, 2004), the *Final Historical Records Review* (engineering-environmental Management Inc. [e^2M], 2007), and the *Final Site Inspection Report* (e^2M, 2008). Previous data collected at the MRS under the Installation Restoration Program (IRP) were also reviewed, but were not considered applicable as no MEC was identified during the RI field effort and no MC sampling was conducted for the RI. Additionally, chemicals of concern identified during previous investigations under the IRP at the Atlas Scrap Yard MRS continue to be addressed under the IRP.

The Atlas Scrap Yard MRS encompasses 66 acres of mostly open land that contains a network of former roads. The MRS was originally used as a construction camp beginning in 1940. After the conclusion of World War II, the construction camp facilities were demolished and, in 1969, became a storage area/scrap yard for nonexplosive scrap material; however, the MRS may have also been used to store munitions. Debris piles comprised of construction debris, dunnage, and metal are still apparent at the MRS. Following the 2007 site inspection (SI), information was provided to e^2M indicating that a 40-millimeter (mm) fragmentation shell burial area was located in the central portion of the Atlas Scrap Yard MRS (e^2M, 2008).

Any munitions made or stored at the facility, including small arms, explosives, pyrotechnics, propellants, mortars, medium and large caliber munitions, landmines, hand grenades, flares, bombs, detonators, and fuzes, may have been disposed at the MRS (e^2M, 2008). Although the munitions disposal activities could not be verified, photographic evidence indicates that many of these items were stockpiled by the sides of the roads running through the MRS (Ohio Environmental Protection Agency, 2013). These items were reportedly removed in 2003; however, there are no available records documenting the removal action (e^2M, 2008).

Current activities at the Atlas Scrap Yard MRS include storage of construction materials, maintenance activities, natural resource management activities, and environmental sampling under the IRP. The future land use at the Atlas Scrap Yard MRS will be military training.

ES.2 Summary of Remedial Investigation Activities

The preliminary MEC and MC conceptual site models (CSMs) were developed during the SI (e^2M, 2008) phase of the CERCLA process and were used to identify data needs and data quality objectives (DQOs) as outlined in the *Final Work Plan for Military Munitions Response Program Remedial Investigation Environmental Services* (Shaw Environmental & Infrastructure, Inc. [Shaw], 2011), hereafter referred to as the Work Plan. The data needs and DQOs were determined at the planning stage of the RI activities and included characterization of the nature and extent of MEC and MC associated with former activities at the MRS. The DQOs were developed to ensure the reliability of field sampling, chemical analyses, and physical analyses; the collection of sufficient data; the acceptable quality of data generated for its intended use; and the inference of valid assumptions from the data. The DQOs for the Atlas Scrap Yard MRS identified the following decision rules that were implemented in evaluating the MRS:

- Perform a geophysical investigation to identify if buried MEC or munitions debris (MD) was present.
- Perform an intrusive investigation of anomalies identified during the geophysical investigation to evaluate if MEC/MD was present.
- Collect incremental and/or discrete soil samples (surface and subsurface) in areas with concentrated MEC/MD, if any, to evaluate for MC.
- Process the information to evaluate whether there are unacceptable risks to human health and the environment associated with MEC and/or MC and make a determination if further investigation was required under the CERCLA process.

Based on the potential storage and burial activities associated with the MRS, it was determined in the SI reporting stage that there was a potential for MEC and/or MD on the ground surface and subsurface at the MRS. The initial step in evaluating for buried MEC at the Atlas Scrap Yard MRS consisted of performing a geophysical investigation. Visual surveys of surface conditions were performed in conjunction with the geophysical investigation.

Geophysical Investigation

In June and July of 2011, Shaw performed a digital geophysical mapping (DGM) investigation to identify potential areas of buried MEC and/or MD at the Atlas Scrap Yard MRS. One-dimensional transect survey methodology was employed to collect uniform geophysical data. The DGM data were collected in all accessible areas within the MRS. Spatial coverage was calculated to be 6.1 acres, which represents site coverage of 9.2 percent and exceeds the coverage requirements specified in the Work Plan (Shaw, 2011). The 6.1 acres equate to a total transect distance of 16.7 miles where each transect width covered was 1 meter wide.

Anomaly Selection

Evaluation of the data collected during the DGM survey identified 3,621 single point anomalies, high density areas within and adjacent to the suspected 40 mm burial area, and 14 additional high density areas within remainder of the MRS. Four contiguous areas of high anomaly density were observed within the suspected 40 mm burial area. Two areas of high anomaly density were identified adjacent to the southeast portion of the suspected 40 mm burial area and are at least partially associated with debris piles observed on the ground surface at the suspected burial area. In the remainder of the MRS, 14 additional regions were characterized by high anomaly densities, defined shapes, and elevated EM61-MK2 signal intensity where trench investigations were considered more appropriate. Distinct subsurface linear features appeared to be related to cultural features such as former utility lines and/or possible burial debris. The corners of the MRS were characterized by significantly lower anomaly densities.

Intrusive Investigations

Following the completion of the DGM survey, between August and October 2011, an intrusive investigation was conducted for the locations identified as potentially containing subsurface MEC and/or MD based on an analysis of the DGM survey data. A total of 3,185 single point source anomaly locations (of the 3,621 total identified) and the high density regions of the MRS were identified for reacquisition and intrusive investigation.

The high density areas were investigated by six trenches within and adjacent to the suspected 40 mm burial area and 27 trenches at the remaining 14 high density anomaly areas. Each trench was approximately 20 to 25 feet in length and approximately 3 feet in width. All trenches were mechanically excavated and no MEC or MD was identified in any of the 33 trenches. A total of 12,851 pounds of "Other Debris" items were identified within the 33 trenches. "Other Debris" can represent any form of debris determined not to be munitions related, including scrap metal, hot rocks (i.e., slag), nails, pipe, and construction debris.

During the reacquisition process for the single point source anomalies, 60 of the single point source anomalies were determined to have the source item on the ground surface rather than buried below the surface; therefore, they did not require intrusive investigation to resolve. An additional 34 single point anomalies were not intrusively investigated due to not finding the peak during reacquisition. A total of 3,090 single point anomalies were successfully intrusively investigated by hand following reacquisition. No MEC or MD was identified, while a total of 58,008 pounds of "Other Debris" was identified from the 3,090 individual source anomalies.

The "Other Debris" quantities for both the mechanical trench excavation and manually excavated single point source anomalies were determined by the Unexploded Ordnance (UXO) teams in the field. All debris was left in place.

MC Sampling

The DQOs stated that incremental samples and discrete samples (surface and subsurface soil) would be collected in areas with concentrated MEC or MD. As no source of MEC or MD was identified at the Atlas Scrap Yard MRS, sampling for MC was not warranted in accordance with the Work Plan (Shaw, 2011).

ES.3 MEC Hazard Assessment

The *Interim Munitions of Concern Hazard Assessment (MEC HA) Methodology* (U.S. Environmental Protection Agency [EPA], 2008) addresses human health and safety concerns associated with potential exposure to MEC at a MRS under a variety of site conditions, including various cleanup scenarios and land use assumptions. If an explosive hazard is identified for this RI, the MEC hazard assessment (HA) evaluation will include the information available for the MRS up to and including the RI field activities and provide a scoring summary for the current and future land use activities. If no explosive hazard is found at the MRS, then there is no need to calculate a MEC HA score since there are no human health safety concerns. No MEC or MD items were identified at the MRS during either the 2007 SI or 2011 RI field activities, which indicate that no MEC source or explosive safety hazard is present at the MRS. Therefore, calculation of a MEC HA score was not warranted for the Atlas Scrap Yard MRS.

ES.4 Conceptual Site Model

The information collected during the RI field activities was used to update the MEC CSM and determine if the development of a CSM for MC was required. The CSM identifies all complete, potentially complete, or incomplete source-receptor interactions for current and future land use activities at the MRS. An exposure pathway is the course a MEC item or MC takes from a source to a receptor. Each pathway includes a source, activity, access, and receptor.

MEC Exposure Analysis

A receptor is an organism (human or ecological) that comes into physical contact with MEC or MC. The National Guard Trainee is the most sensitive of the identified current and future potential users that may become exposed to any potentially remaining MEC and MC at the MRS. Ecological receptors are based on animal and aquatic species that are likely to occur in the terrestrial and aquatic habitats at the MRS. The primary MRS-specific biota identified for the MRS include aquatic biota, terrestrial invertebrates (earthworms), voles, shrews, rabbits, robins, foxes, hawks, muskrats, ducks, minks, and benthic invertebrates (insect larvae, crayfish, snails, clams, and bivalves) (USACE, 2003c).

A statistical approach was taken for the investigation at the Atlas Scrap Yard MRS and a portion of the MRS was investigated by visual survey, DGM survey, and intrusive investigation. No MEC or MD was identified on the ground surface or in the subsurface in the 6.1 acres investigated. The UXO Estimator® module (USACE, 2003a) calculated the statistical upper bound density of MEC to be 0.455 MEC per acre based on the percentage of area investigated at the MRS and the actual investigation results. This value was within the DQO target density of 0.5 MEC per acre and means that the investigation was adequate to be 95 percent confident that there is less than 0.455 MEC per acre at the MRS. Although the UXO Estimator® results indicate that a statistical potential for MEC may remain at the MRS, no MEC or MD have been found and it is anticipated that no MEC source or explosive safety hazard is present at the Atlas Scrap Yard MRS.

Given that no MEC source has been identified to date and an explosive safety hazard is not anticipated to exist at the Atlas Scrap Yard MRS, there are no activity/access/receptor interactions ongoing or anticipated under future land use where a receptor may come into contact with MEC. As a result, the revised CSM for MEC identifies incomplete exposure pathways in surface soil, subsurface soil, surface water, and sediment for all receptors having access to the MRS.

MC Exposure Analysis

Since no MEC was identified during the RI investigations at the Atlas Scrap Yard MRS, sampling was not warranted at the MRS in accordance with the Work Plan (Shaw, 2011). Therefore, the CSM for MC identifies incomplete exposure pathways for all receptors at the MRS. Evaluation for the chemicals of concern identified during previous investigations under the IRP at the Atlas Scrap Yard MRS will continue to be addressed under the IRP.

ES.6 Conclusions and Recommendations

The RI was prepared in accordance with the project DQOs and included evaluations for explosives hazards and potential sources of MC that may pose threats to likely receptors. The following statements can be made for the Atlas Scrap Yard MRS based on the results of the RI field activities:

- A total of 6.1 acres were investigated at the 66-acre MRS during the RI and exceeds the proposed spatial coverage of 5.6 acres.
- The nature and extent of MEC and MD has been adequately defined at the MRS.
- No physical evidence of MEC or MD was identified during the RI field activities and an explosive safety hazard is not anticipated to exist at the MRS.
- MC sampling was not warranted since no MEC or MD was found at the MRS during the RI field activities.

After evaluating the RI results, it is determined that the DQOs for the Atlas Scrap Yard MRS have been satisfied and the MRS has been adequately characterized. The next course of action will be to proceed to a No Further Action Record of Decision. This RI was initiated before the finalization of the U.S. Army's *Final Technical Memorandum: Land Uses and Revised Risk Assessment Process for the Ravenna Army Ammunition Plant Installation Restoration Program* (Army National Guard, 2014).

1.0 INTRODUCTION

This Remedial Investigation (RI) Report documents the findings and conclusions of the RI field activities for the Atlas Scrap Yard (RVAAP-050-R-01) Munitions Response Site (MRS) located at the former Ravenna Army Ammunition Plant (RVAAP) in Ravenna, Ohio. This RI Report was prepared by CB&I Federal Services LLC company, under Delivery Order 0002 for Military Munitions Response Program (MMRP) environmental services at the facility under the *Multiple Award Military Munitions Services Performance-Based Acquisition* Contract No. W912DR-09-D-0005. The Delivery Order was issued by the United States Army Corps of Engineers (USACE), Baltimore District on May 27, 2009.

This RI Report presents the results of the RI field activities that were conducted at the Atlas Scrap Yard MRS between July and October 2011. This report was developed in accordance with the *Final Work Plan for Military Munitions Response Program Remedial Investigation Environmental Services* (Shaw Environmental & Infrastructure, Inc. [Shaw], 2011) at the facility, hereafter referred to as the Work Plan, and the *Military Munitions Response Program Munitions Response Remedial Investigation/Feasibility Study Guidance* (U.S. Army, 2009).

1.1 Purpose

Environmental cleanup decision making under the MMRP follows the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA) prescribed sequence of RI, Feasibility Study (FS), Proposed Plan, and Record of Decision. The RI serves as the mechanism for collecting data to characterize MRS conditions, determining the nature and extent of the contamination, and assessing potential risks to human health and the environment from this contamination. While not all munitions and explosives of concern (MEC) or munitions constituents (MC) under the MMRP constitute CERCLA hazardous substances, pollutants, or contaminants, the Defense Environmental Response Program (DERP) statute provides the Department of Defense (DoD) the authority to respond to releases of MEC/MC, and DoD policy states that such responses shall be conducted in accordance with CERCLA and the *National Oil and Hazardous Substances Pollution Contingency Plan* (NCP).

The purpose of the RI was to determine whether the Atlas Scrap Yard MRS warranted further response action pursuant to CERCLA and the NCP. More specifically, the RI was intended to determine the nature and extent of MEC and MC and to subsequently determine the hazards and potential risks posed to likely human and ecological receptors by MEC and MC. Additional data are also presented in this RI Report to support the identification and evaluation of alternatives in a FS, if required.

1.2 Problem Identification

The Atlas Scrap Yard was used as a construction camp and later a storage area/scrap yard for nonexplosive scrap material, but may also have been used to store munitions. Any munitions made or stored at the facility, including small arms, explosives, pyrotechnics, propellants, mortars, medium and large caliber munitions, landmines, hand grenades, flares, bombs, detonators, and fuzes, may have been disposed at the MRS. Further, it was reported that 40-millimeter (mm) fragmentation shells were buried in the central portion of the MRS (environmental-engineering Management, Inc. [e^{2}M], 2008).

The *Final Site Inspection Report* (e^{2}M, 2008), hereafter referred to as the SI Report, concluded that there was a potential for buried MEC at the MRS and recommended "Further Characterization" for MEC be performed under the MMRP. No further evaluation for MC was recommended in the SI Report since site-related chemicals (SRCs) identified during previous investigations are being further addressed under the Installation Restoration Program (IRP).

1.3 Physical Setting

This section presents the physical characteristics of the facility, the Atlas Scrap Yard MRS, and the surrounding environment that are factors in understanding fate and transport, receptors, and exposure scenarios for potential human health and ecological risks. The physiographic setting, hydrology, climate, and ecological characteristics of the facility were compiled from information originally presented in the SI Report (e^{2}M, 2008), which included the Atlas Scrap Yard MRS, and the *Integrated Natural Resources Management Plan and Environmental Assessment* (AMEC Earth and Environmental [AMEC], 2008) for the facility that was prepared for the Ohio Army National Guard (OHARNG).

1.3.1 Location

The former RVAAP (Federal Facility ID No. OH213820736), now known as the Camp Ravenna Joint Military Training Center (Camp Ravenna), is located in northeastern Ohio within Portage and Trumbull Counties and is approximately 3 miles east-northeast of the city of Ravenna. The facility is approximately 11 miles long and 3.5 miles wide. The facility is bounded by State Route 5, the Michael J. Kirwan Reservoir, and the CSX System Railroad to the south; Garret, McCormick, and Berry Roads to the west; the Norfolk Southern Railroad to the north; and State Route 534 to the east. In addition, the facility is surrounded by the communities of Windham, Garrettsville, Newton Falls, Charlestown, and Wayland (**Figure 1-1**).

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U.S. ARMY
CORPS OF ENGINEERS
BALTIMORE DISTRICT

MILITARY MUNITIONS RESPONSE PROGRAM

RAVENNA ARMY AMMUNITION PLANT
RAVENNA, OHIO

Shaw Environmental & Infrastructure, Inc.
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FIGURE 1-1 RVAAP INSTALLATION LOCATION MAP

The Atlas Scrap Yard MRS is an approximate 66-acre parcel located at the central portion of the facility within Portage County, southwest of the intersection at Newton Falls Road and Paris-Windham Road (**Figure 1-2**). The MRS is collocated with an IRP Area of Concern (AOC) identified as Army Environmental Database-Restoration Module (AEDB-R) number RVAAP-50.

Administrative control of 21,683-acre facility has been transferred to the United States (U.S.) Property and Fiscal Officer for Ohio and subsequently licensed to the OHARNG for use as a training site, Camp Ravenna. The restoration program involves cleanup of former production areas across the facility related to former operations under the former RVAAP.

The MRS is located on federal property that is managed by the Army National Guard (ARNG) and the OHARNG. **Table 1-1** summarizes the administrative description for the Atlas Scrap Yard MRS. The table includes the facility AEDB-R numerical designation for the MRS, the current MRS acreage, and the agencies responsible for the MRS.

Table 1-1
Administrative Summary of the Atlas Scrap Yard MRS

MRS Name	AEDB-R MRS Number	MRS Area (acres)	Property Owner	MRS Management Responsibility
Atlas Scrap Yard	RVAAP-050-R-01	66.04	USP&FO	ARNG/OHARNG

AEDB-R denotes Army Environmental Data Base Restoration.
ARNG denotes Army National Guard.
MRS denotes Munitions Response Site.
OHARNG denotes Ohio Army National Guard.
USP&FO denotes U.S. Property and Fiscal Officer.

1.3.2 Current and Projected Land Use

This section presents the current and anticipated future land use for the Atlas Scrap Yard MRS. The future land use is based on information provided in the *RVAAP's Facility-Wide Human Health Risk Assessor Manual* (USACE, 2005) and information provided by the OHARNG during preparation of the Work Plan (Shaw, 2011).

Current activities at the Atlas Scrap Yard MRS include storage of construction materials, maintenance activities, natural resource management activities, and environmental sampling under the IRP. Potential users associated with the current land uses at the MRS include facility personnel, contractors, and occasional trespassers.

The future activities at the Atlas Scrap Yard MRS will be military training, and the potential user is the National Guard Trainee (USACE, 2005). Since the RI was completed prior to finalization of the U.S. Army's *Final Technical Memorandum: Land Uses and Revised*

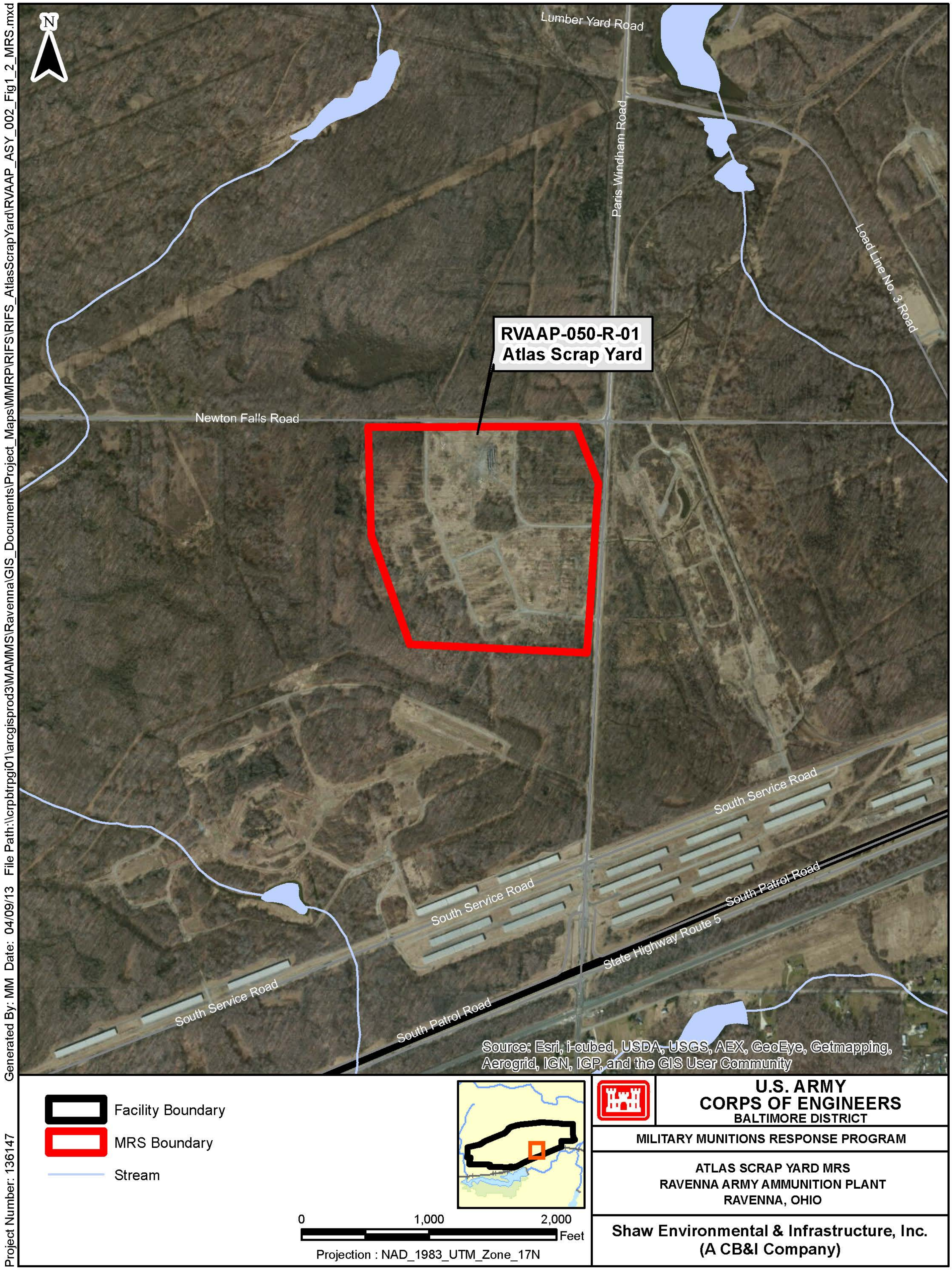

FIGURE 1-2 MRS LOCATION MAP

Risk Assessment Process for the Ravenna Army Ammunition Plant Installation Restoration Program (ARNG, 2014) and because the evaluation for potential MC was not conducted due to the lack of an MC source, the Commercial Industrial Land Use was not included in the RI.

1.3.3 Climate

The climate at the facility is classified as humid continental, and the region is characterized by warm, humid summers and cold winters. The National Weather Service identified the average annual precipitation for Ravenna, Ohio as 40.23 inches, with February as the driest month and July as the wettest month. **Table 1-2** reflects the annual climate and weather normally encountered at nearby Youngstown Municipal Airport.

Table 1-2
Climatic Information, Youngstown Municipal Airport, Ohio

Temperature Type	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Normal Max Temperature (°F)	32.4	36.0	46.3	58.2	69.0	77.1	81.0	79.3	72.1	60.7	48.4	37.3
Normal Min Temperature (°F)	17.4	19.3	27.1	36.5	46.2	54.6	58.7	57.5	50.9	40.9	33.0	23.4
Mean Precipitation (inches)	2.34	2.03	3.05	3.33	3.45	3.91	4.10	3.43	3.89	2.46	3.07	2.96
Mean Snowfall (inches)	13.1	9.6	10.4	2.2	0	0	0	0	Trace	0.6	4.5	12.3

Source: National Oceanic and Atmospheric Administration Climatography of the United States Nos. 20 and 81 1971–2000.
°F denotes degrees Fahrenheit.

1.3.4 Topography

The facility is located within the Southern New York Section of the Appalachian Plateaus physiographic province. Rolling topography containing incised streams and dendric drainage patterns are prevalent in the province. Rounded ridges, filled major valleys, and areas covered with glacially derived unconsolidated deposits were the product of glaciation in the Southern New York Section. In addition, bogs, kettle lakes, and kames are evidence of past glacial activity in the province. Old stream drainage patterns were disturbed and wetlands were created within the province as a result of past glacial activity (e^2M, 2008).

Atlas Scrap Yard MRS Topography

The topography at the Atlas Scrap Yard MRS ranges from flat to gently rolling hills. The relative elevation at the MRS is approximately 980 feet above mean sea level. Natural drainage is toward the wetland area at the northeast portion of the MRS. The topographical features at the Atlas Scrap Yard MRS are presented in **Figure 1-3**.

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FIGURE 1-3 TOPOGRAPHIC MAP

1.3.5 Hydrology and Hydrogeology

The facility is located within the Ohio River Basin. The major surface stream at the facility is the West Branch of the Mahoning River, which flows adjacent to the western end of the facility, generally from north to south, before flowing into the Michael J. Kirwan Reservoir. After leaving the reservoir, the West Branch joins the Mahoning River east of the facility.

Surface water features within the facility include a variety of streams, lakes, ponds, floodplains, and wetlands. Numerous streams drain the facility, including approximately 19 miles of perennial streams. The total combined stream length at the facility is 212 linear miles (AMEC, 2008).

Three primary watercourses drain the facility: (1) the south fork of Eagle Creek, (2) Sand Creek, and (3) Hinkley Creek. Eagle Creek and its tributaries, including Sand Creek, are designated as State Resource Waters. With this designation, the stream and its tributaries fall under the Ohio State Antidegradation Policy. These waters are protected from any action that would degrade the existing water quality.

Approximately 153 acres of ponds are found on the facility (AMEC, 2008). Most of the ponds were created by beaver activity or small man-made dams and embankments. Some were constructed within natural drainage ways to function as settling ponds for effluent or runoff.

A planning level survey (i.e., desktop review of wetlands data and resources [National Wetland Inventory maps, aerials, etc]) for wetlands was conducted for the entire facility, including the MRS. Wetlands located within the facility include seasonally saturated wetlands, wet fields, and forested wetlands (MKM Engineers, Inc. [MKM], 2007). Sand and gravel aquifers are present within the buried-valley and outwash deposits in Portage County. In general, the aquifer is too thin and localized to provide large quantities of water; however, yields are sufficient for residential water supplies. Wells located on the facility were primarily located within the sandstone facies of the Sharon Member.

Although groundwater recharge and discharge areas have not been delineated at the facility, it is assumed that the extensive uplands areas at the facility are regional recharge zones. Sand Creek, Hinkley Creek, and Eagle Creek are presumed to be major groundwater discharge areas (e^2M, 2008).

Atlas Scrap Yard MRS Hydrology and Hydrogeology

Surface water drainage generally flows to the east, following the topography at the Atlas Scrap Yard MRS. Drainage ditches run parallel to the roads and receive surface water runoff during rain events. There are no natural streams or ponds located within the MRS. The Atlas

Scrap Yard MRS is located south of the Sand Creek and is not located within the Sand Creek flood plain (MKM, 2007).

Jurisdictional wetland delineation has not been performed at the MRS. The planning level survey identified five wetland locations throughout the Atlas Scrap Yard MRS. The total area of wetlands at the MRS is approximately 3 acres. The largest area of wetland is approximately 1.6 acres and used to be an ice skating pond when the MRS was a construction camp. This wetland is located at the northeast portion of the MRS. The wetlands present within the MRS are currently either forested wetlands or wet fields. No bogs, kettle lakes, or kames have been identified as being present within the MRS. Wetland areas identified at the MRS during the planning level survey are shown on **Figure 1-4** (AMEC, 2008). Groundwater is present at the MRS between 12 and 16 feet below ground surface (bgs) in unconsolidated sediments. Groundwater flow is to the south in the southern portion of the MRS and to the north in the northwestern portion of the MRS (MKM, 2007).

1.3.6 Geology and Soils

Based on regional geology, the facility consists of Mississippian and Pennsylvanian age bedrock strata, which dips to the south at approximately 5 to 10 feet/mile. The bedrock is overlain by unconsolidated glacial deposits of varying thickness.

Bedrock is overlain by deposits of Wisconsin-aged Lavery Till and Hiram Till in the western and eastern portions of the facility, respectively. The thickness of the glacial deposits varies throughout the facility ranging from ground surface in parts of the eastern portion of the facility to an estimated 150 feet in the south-central portion of the facility.

Bedrock is present near the ground surface in many locations at the facility, including Load Line 1 at the east end of the facility. Where glacial deposits are still present, their distribution and character are indicative of ground moraine origin. Laterally discontinuous groupings of yellow-brown, brown, and gray silty clays to clayey silts, with sand and rock fragments are present. Glacial-age standing water body deposits may be present at the facility, in the form of uniform light gray silt deposits over 50 feet thick.

At approximately 200 feet bgs, the Mississippian Cuyahoga Group is present throughout most of the facility. In the northeastern corner of the facility, the Meadville Shale Member of the Cuyahoga Group is present close to the surface. The Meadville Shale Member of the Cuyahoga Group is blue-gray silty shale characterized by alternating thin beds of sandstone and siltstone.

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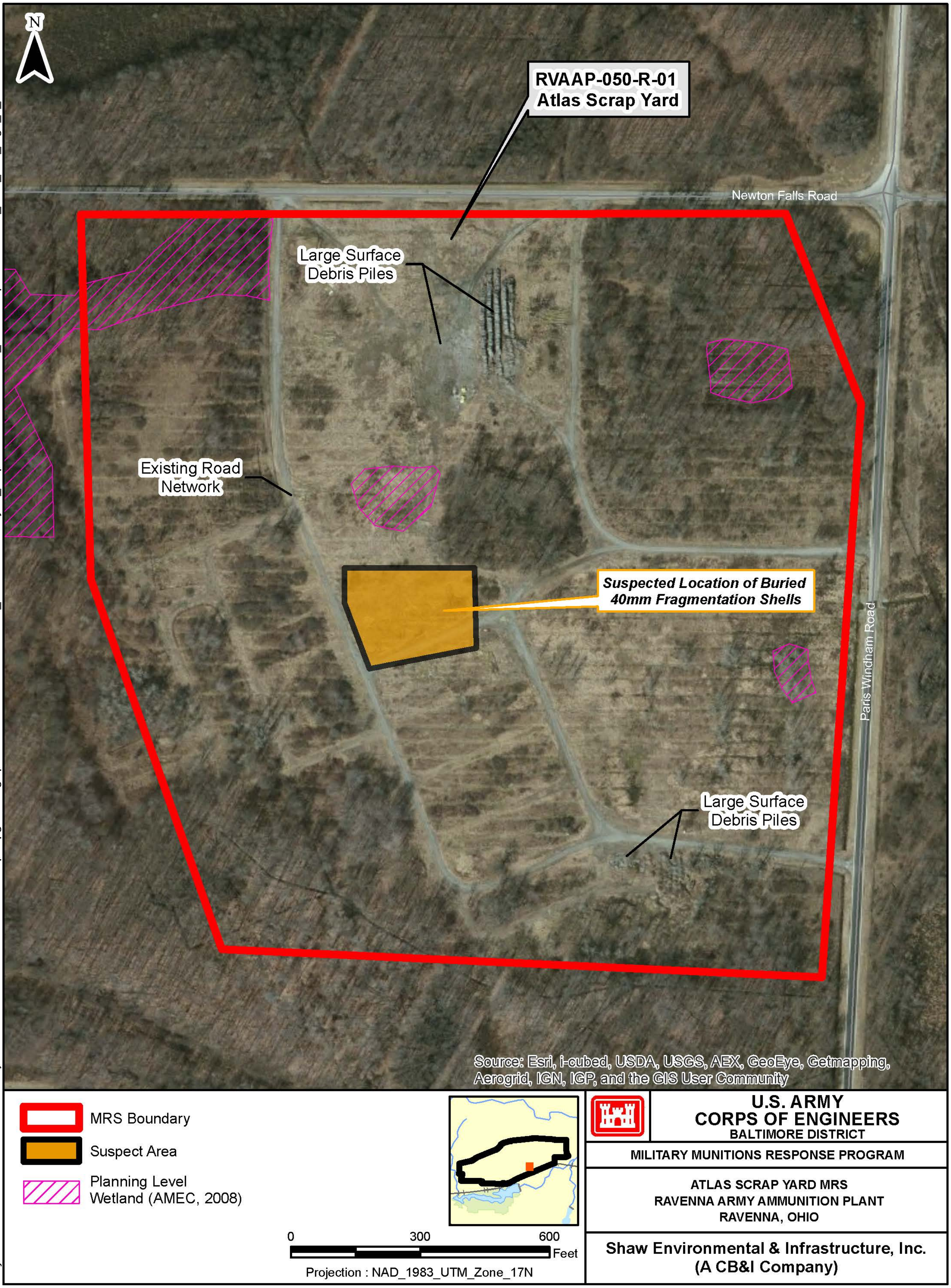

FIGURE 1-4 SITE FEATURES MAP

The Sharon Member of the Pennsylvanian Pottsville Formation unconformably overlies the Meadville Shale Member of the Mississippian Cuyahoga Group. A relief of as much as 200 feet exists in Portage County, which can be seen in the Sharon Member thickness variations. The Sharon Member is made up of shale and a conglomerate.

The Sharon Member conglomerate unit is identified as highly porous, permeable, cross bedded, frequently fractured and weathered quartzite sandstone, which is locally conglomeratic and has an average thickness of 100 feet. A thickness of as much as 250 feet exists in the Sharon Conglomerate where it was deposited in a broad channel cut into Mississippian rocks. In marginal areas of the channel, the conglomerate unit may thin out to approximately 20 feet; in some places, it may be missing owing to nondeposition on the uplands of the early Pennsylvanian erosional surface. Thin shale lenses occur intermittently within the upper part of the conglomerate unit.

The Sharon Member shale unit is identified as a light to dark-gray fissile shale, which overlies the conglomerate in some locations; however, it has been eroded throughout the majority of the facility. The Sharon Member outcrops in many locations in the eastern half of the facility.

The remaining members of the Pottsville Formation overlie the Sharon Member in the western portion of the facility. Due to erosion and because the land surface was above the level of deposition, the Pottsville Formation is not found in the eastern half of the facility.

The Connoquenessing Sandstone Member, which is sporadic, relatively thin channel sandstone comprised of gray to white, coarse-grained quartz with a higher percentage of feldspar and clay than the Sharon Conglomerate, unconformably overlies the Sharon Member. The Mercer Member, which is found above the Connoquenessing Sandstone, consists of silty to carbonaceous shale with many thin and discontinuous lenses of sandstone in its upper part. The Homewood Sandstone Member unconformably overlies the Mercer and consists of the uppermost unit of the Pottsville Formation. The Homewood ranges from well-sorted, coarse-grained, white quartz sandstone to a tan, poorly sorted, clay-bonded, micaceous, medium- to fine-grained sandstone. The Homewood occurs as a caprock on bedrock highs in the subsurface (e^2M, 2008).

Geology and Soils at the Atlas Scrap Yard MRS

The Atlas Scrap Yard MRS is located over the Sharon Sandstone Conglomerate Unit and the bedrock elevation is approximately 950 feet above mean sea level. Depth to bedrock at the MRS is approximately 20 to 29 feet (MKM, 2007). **Figure 1-5** illustrates the bedrock formation beneath the MRS.

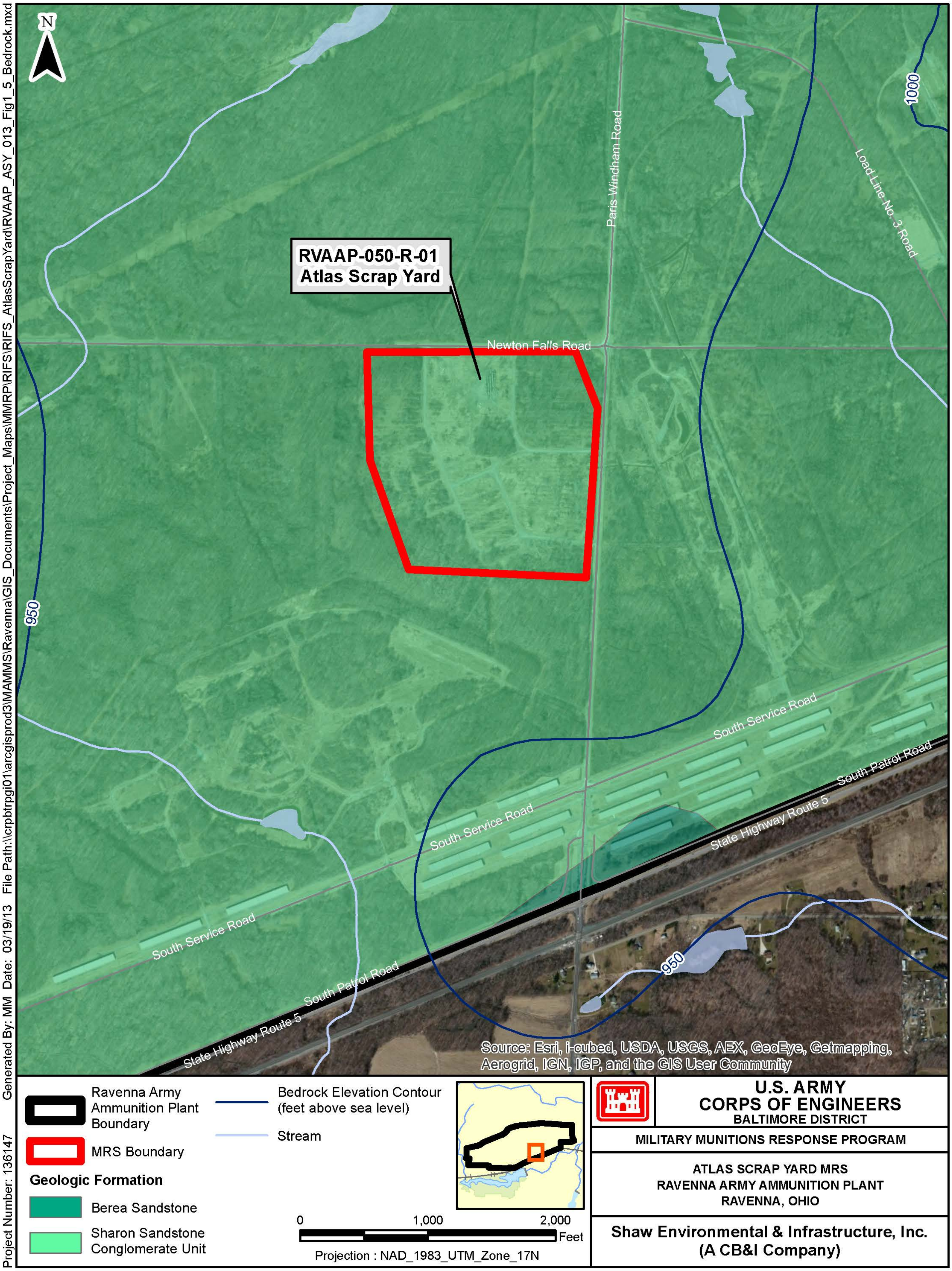

FIGURE 1-5 BEDROCK MAP

The soils identified at the facility are generally derived from the Wisconsin-age silty clay glacial till. The natural soil types associated with the MRS consist of silt or clay loams ranging in permeability from 6.0×10^{-7} to 1.4×10^{-3} centimeters/second and are identified as the Mahoning silt loam with 2 to 6 percent slopes and the Trumbull silt loam with 0 to 2 percent slopes (United States Department of Agriculture et al., 1978). **Figure 1-6** illustrates the soil types and distribution across the MRS.

The Mahoning silt loam makes up the majority of the interior of the MRS and consists of deep, somewhat poorly drained, nearly level to gently sloping soils that formed in silty clay loam or clay loam glacial till. The Mahoning silt loam with 2 to 6 percent slopes is characterized by more gently sloped land with medium to rapid runoff with erosion as a hazard. These low areas are slow to dry out in spring. Seasonal wetness and slow permeability is a characteristic of this soil type (MKM, 2007).

The Trumbull silt loam covers the southwest corner and an area near the eastern boundary of MRS. There is also a thin finger of Trumbull silt loam that extends into the center of the MRS from the west side. The Trumbull series consists of deep, poorly drained, nearly level soils. These soils formed in silty clay loam, clay loam, or silty clay glacial till. Permeability is very slow in the subsoil and underlying glacial till. Runoff is slow and ponding is common after heavy rains. Trumbull soils are slow to dry in spring. Trumbull silt loam with 0 to 2 percent slopes is a nearly level soil mainly along small drainage ways or in small depressions adjacent to the better drained Mahoning and Remsen soils. Seasonal wetness and very slow permeability are limitations associated with this soil type (MKM, 2007).

1.3.7 Vegetation

The facility has a diverse range of vegetation and habitat resources. Habitats present within the facility include large tracts of closed-canopy hardwood forest, scrub/shrub open areas, grasslands, wetlands, and open-water ponds and lakes. Vegetation at the facility can be grouped into three categories: (1) herb-dominated, (2) shrub-dominated, and (3) tree-dominated. Tree-dominated areas are most abundant, covering approximately 13,000 acres on the facility. Shrub vegetation covers approximately 4,200 acres. A plant species survey identified 18 vegetation communities on the facility. The facility has as total of seven forest formations, four shrub formations, eight herbaceous formations, and one nonvegetated formation (AMEC, 2008).

Vegetation at the Atlas Scrap Yard MRS

At the Atlas Scrap Yard MRS, the majority of the area is herb-dominated (dry early-successional herbaceous field) with some areas of tree-dominated areas (oak/maple swamp forest) (AMEC, 2008). Vegetation at the MRS has also been influenced by man-made improvements including a network of former roads that are unpaved.

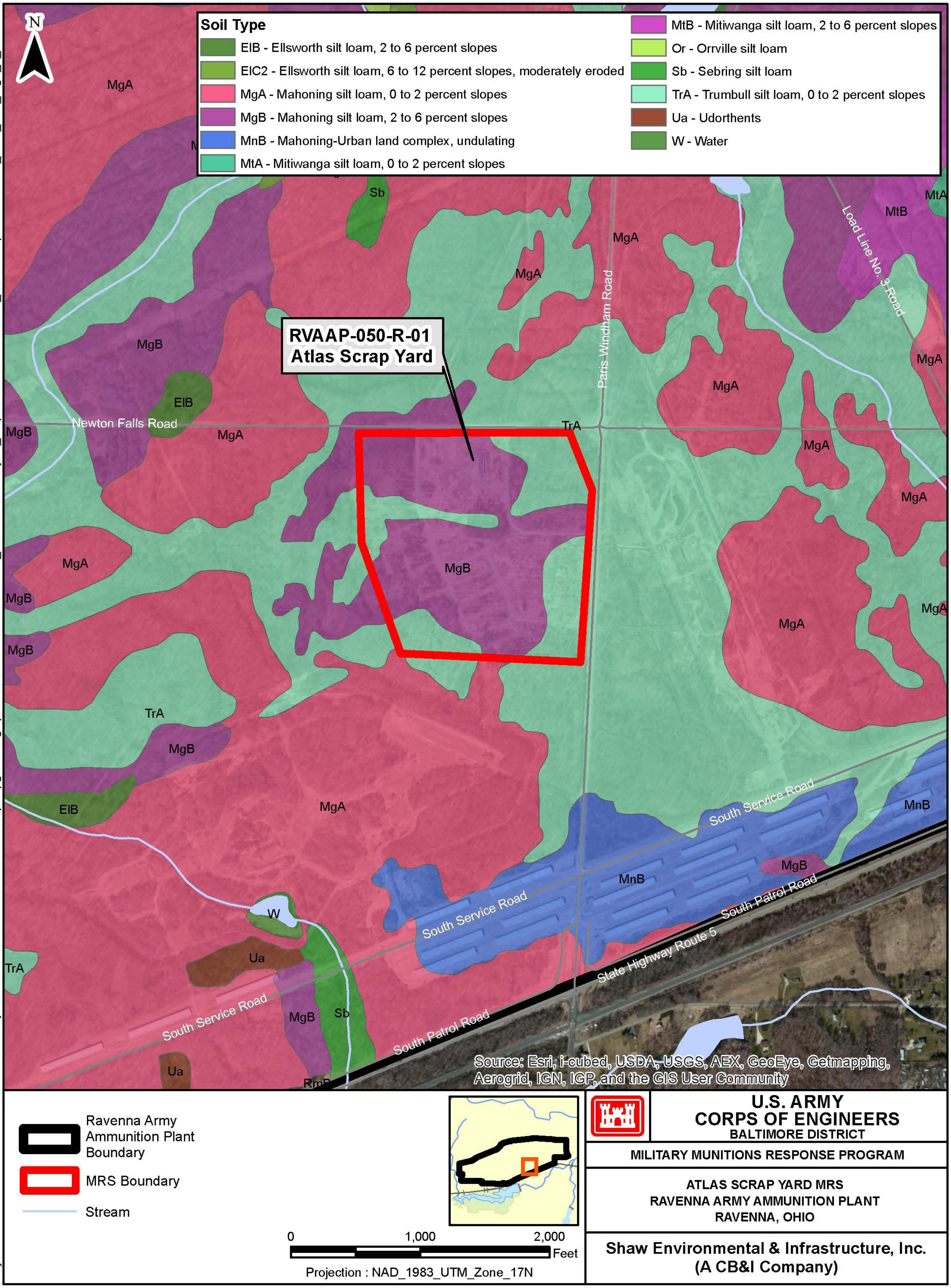

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FIGURE 1-6 SOILS MAP

1.3.8 Threatened, Endangered, and Other Rare Species

Federal status as a threatened or endangered species is derived from the *Endangered Species Act* (16 United States Code § 1538, et seq.) and is administered by the United States Fish and Wildlife Service. While there are species under federal review for listing, there are currently no federally listed species or critical habitats at the facility. State-listed plant and animal species are determined by the Ohio Department of Natural Resources. Although biological inventories have not occurred within the MRS boundary and no confirmed sightings of state-listed species have been reported, there is the potential for state-listed or rare species to be within the MRS boundary. Information regarding threatened, endangered, and candidate species at the facility was obtained from the Camp Ravenna *Rare Species List* (2010). **Table 1-3** presents state-listed species that have been identified to be on the facility by biological inventories and confirmed sightings.

Table 1-3
Camp Ravenna Rare Species List

Common Name	Scientific Name
State Endangered	
American bittern	*Botaurus lentiginosus*
Northern harrier	*Circus cyaneus*
Yellow-bellied sapsucker	*Sphyrapicus varius*
Golden-winged warbler	*Vermivora chrysoptera*
Osprey	*Pandion haliaetus*
Trumpeter swan	*Cygnus buccinators*
Mountain brook lamprey	*Ichthyomyzon greeleyi*
Graceful underwing	*Catocala gracilis*
Bobcat	*Felis rufus*
Narrow-necked Pohl's moss	*Pohlia elongate var. Elongata*
Sandhill crane (probable nester)	*Grus canadensis*
Bald eagle (nesting pair)	*Haliaetus leucocephalus*
State Threatened	
Barn owl	*Tyto alba*
Dark-eyed junco (migrant)	*Junco hyemalis*
Hermit thrush (migrant)	*Catharus guttatus*
Least bittern	*Ixobrychus exilis*
Least flycatcher	*Empidonax minimus*

Table 1-3 (continued)
Camp Ravenna Rare Species List

Common Name	Scientific Name
Caddisfly	*Psilotreta indecisa*
Simple willow-herb	*Epilobium strictum*
Woodland horsetail	*Equisetum sylvaticum*
Lurking leskea	*Plagiiothecium latebricola*
Pale sedge	*Carex pallescens*
State Potentially Threatened Plants	
Gray birch	*Betula populifolia*
Butternut	*Juglans cinerea*
Northern rose azalea	*Rhododendron nudiflorum var. Roseum*
Hobblebush	*Viburnum alnifolium*
Long beech fern	*Phegopteris connectilis*
Straw sedge	*Carex straminea*
Tall St. John's wort	*Hypercium majus*
Water avens	*Geum rivale*
Shining ladies-tresses	*Spiranthes lucida*
Swamp oats	*Sphenopholis pensylvanica*
Arbor vitae	*Thuja occidentalis*
American chestnut	*Castanea dentate*
Tufted moisture-loving moss	*Philonotis fontana var. Caespitosa*
State Species of Concern	
Pygmy shrew	*Sorex hovi*
Woodland jumping mouse	*Napaeozapus insignis*
Star-nosed mole	*Condylura cristata*
Sharp-shinned hawk	*Accipiter striatus*
Marsh wren	*Cistothorus palustris*
Henslow's sparrow	*Ammodramus henslowii*
Cerulean warbler	*Dendroica cerulean*
Prothonotary warbler	*Protonotaria citrea*
Bobolink	*Dolichonyx oryzivorus*
Northern bobwhite	*Colinus virginianus*

Table 1-3 (continued)
Camp Ravenna Rare Species List

Common Name	Scientific Name
Common moorhen	*Gallinula chlorpus*
Great egret (migrant)	*Ardea alba*
Sora	*Porzana carolina*
Virginia rail	*Rallus limicola*
Creek heelsplitter	*Lasmigona compressa*
Eastern box turtle	*Terrapene carolina*
Four-toed salamander	*Hemidactylium scutatum*
Mayfly	*Stenonema ithica*
Coastal plain apamea	*Apamea mixta*
Willow peasant	*Brachylomia algens*
Sedge wren	*Cistothorus platensis*
State Special Interest	
Canada warbler	*Wilsonia canadensis*
Little blue heron	*Egretta caerula*
Magnolia warbler	*Dendroica magnolia*
Northern waterthrush	*Seiurus noveboracensis*
Winter wren	*Troglodytes troglodytes*
Back-throated blue warbler	*Dendroica caerulescens*
Brown creeper	*Certhia americana*
Mourning warbler	*Oporornis philadelphia*
Pine siskin	*Carduelis pinus*
Purple finch	*Carpodacus purpureus*
Red-breasted nuthatch	*Sitta canadensis*
Golden-crowned kinglet	*Regulus satrapa*
Blackburnian warbler	*Dendroica fusca*
Blue grosbeak	*Guiraca caerulea*
Common snipe	*Gallinago gallinago*
American wigeon	*Anas americana*
Gadwall	*Anas strepera*
Green-winged teal	*Anas crecca*

Table 1-3 (continued)
Camp Ravenna Rare Species List

Common Name	Scientific Name
Northern shoveler	*Anas clypeata*
Redhead duck	*Aythya americana*
Ruddy duck	*Oxyura jamaicensis*

Source: Camp Ravenna Rare Species List, April 27, 2010.

1.3.9 Cultural and Archeological Resources

A number of archeological surveys have been conducted at the facility. Cultural and archeological resources have been identified at the facility during past surveys. The Atlas Scrap Yard MRS has not been previously surveyed for cultural or archeological resources; however, due to the disturbed nature of the ground from former activities, it is unlikely that cultural and/or archeological resources exist at the MRS. No cultural or archeological resources were identified during the RI field activities at the MRS.

1.4 Facility History and Background

During operations as an ammunition plant, the former RVAAP was a government-owned and contractor-operated industrial facility. Former industrial operations at the facility consisted of 12 munitions assembly facilities, referred to as “load lines.” Load Lines 1 through 4 were used to melt and load 2,4,6-trinitrotoluene and Composition B into large caliber shells and bombs. The operations on the load lines produced explosive dust, spills, and vapors that collected on the floors and walls of each building. Periodically, the floors and walls were cleaned with water and steam. Following cleaning, the “pink water” waste water, which contained 2,4,6-trinitrotoluene and Composition B, was collected in concrete holding tanks, filtered, and pumped into unlined ditches for transport to earthen settling ponds. Load Lines 5 through 11 were used to manufacture fuzes, primers, and boosters. Potential contaminants in these load lines include lead compounds, mercury compounds, and explosives. From 1946 to 1949, Load Line 12 was used to produce ammonium nitrate for explosives and fertilizers prior to use as a weapons demilitarization facility.

In 1950, the facility was placed in standby status and operations were limited to renovation, demilitarization, and normal maintenance of equipment, along with storage of munitions. Production activities were resumed from July 1954 to October 1957 and again from May 1968 to August 1972. In addition to production missions, various demilitarization activities were conducted at facilities constructed at Load Lines 1, 2, 3, and 12. Demilitarization activities included disassembly of munitions, explosives melt-out, and recovery operations using hot water and steam processes. Periodic demilitarization of various munitions continued through 1992.

In addition to production and demilitarization activities at the load lines, other facilities at the former RVAAP include MRSs that were used for the burning, demolition, and testing of munitions. These burning and demolition grounds consist of large parcels of open space or abandoned quarries. Potential contaminants at these MRSs include explosives, propellants, metals, and waste oils. Other AOCs present at the facility include landfills, an aircraft fuel tank testing facility, and various general industrial support and maintenance facilities (Science Applications International, Inc. [SAIC], 2011).

Atlas Scrap Yard MRS History and Background

The Atlas Scrap Yard MRS is located at the central portion of the facility and encompasses approximately 66 acres of mostly open land that contains a network of former roads (**Figure 1-4**). The MRS was originally used as a construction camp beginning in 1940. After the conclusion of World War II, the construction camp facilities were demolished and, in 1969, became a storage area/scrap yard for nonexplosive scrap material; however, the MRS may have also been used to store munitions. Debris piles comprised of construction debris, dunnage, and metal are still apparent at the MRS. Following the 2007 site inspection (SI), information was provided to e^2M indicating that a 40 mm fragmentation shell burial area was located in the central portion of the Atlas Scrap Yard MRS (e^2M, 2008).

The U.S. Army Closed, Transferring, and Transferred (CTT) Range/Site Inventory was reviewed during the *Final Historical Records Review* (HRR) completed by e^2M in 2007 and reported that a MEC item had been uncovered in the southwest corner of the MRS. The document further reported that MEC and munitions debris (MD) had been sorted and removed from the MRS in 2003. However, neither the type and disposition of the MEC item uncovered nor the MEC/MD removal operation could be verified (e^2M, 2007).

Any munitions made or stored at the facility, including small arms, explosives, pyrotechnics, propellants, mortars, medium and large caliber munitions, landmines, hand grenades, flares, bombs, detonators, and fuzes, may have been disposed at the MRS (e^2M, 2008). Although the munitions disposal activities could not be verified, photographic evidence indicates that many of these items were stockpiled by the sides of the roads running through the MRS (Ohio Environmental Protection Agency [Ohio EPA], 2013). These items were reportedly removed in 2003; however, no records documenting the removal action are available (e^2M, 2007).

1.5 Previous Investigations and Actions

This section briefly summarizes the investigations and actions as it pertains to the facility MRS discussed in this RI Report. This information was obtained primarily from the HRR (e^{2}M, 2007) and the SI Report (e^{2}M, 2008).

1.5.1 2004 USACE Final Archives Search Report

The USACE conducted an archives search in 2004 under the DERP as a historical records search and SI for the presence of MEC at the facility. The *Final Archives Search Report* (ASR) was prepared by the USACE in 2004 and identified 12 AOCs as well as 4 additional locations with the potential for MEC. Based on the ASR, 12 of the 15 AOCs were identified as potential MRSs containing MEC. The MRSs included the Ramsdell Quarry Landfill, Erie Burning Grounds, Open Demolition Area #1, Load Line 12 and Dilution/Settling Pond, Building 1200 and Dilution/Settling Pond, Quarry Landfill/Former Fuze and Booster Burning Pits, 40 mm Firing Range, Building 1037—Laundry Waste Water Sump, Anchor Test Area, Atlas Scrap Yard, Block D Igloo, and Tracer Burning Furnace. Confirmed MEC was identified at Open Demolition Area #2, Landfill North of Winklepeck, Load Line #1 and Dilution/Settling Pond, and Load Line #3 and Dilution/Settling Pond (USACE, 2004).

The USACE assessment team that completed the ASR reported that there were some debris at the Atlas Scrap Yard, but no ordnance related debris was located. The assessment team reported that the Atlas Scrap Yard was considered to have potential explosive ordnance presence until the remaining debris was identified (USACE, 2004).

1.5.2 2007 e^{2}M Final Historical Records Review

The HRR was performed by e^{2}M in January 2007. The primary objective of the HRR was to perform a limited-scope records search to document historical and other known information on MRSs identified at the former RVAAP, to supplement the U.S. Army CTT Range/Site Inventory, and to support the technical project planning process designed to facilitate decisions on those areas where more information was needed to determine the next step(s) in the CERCLA process.

Of the 19 MMRP-eligible MRSs identified during the U.S. Army CTT Inventory, the HRR identified 18 MRSs that qualified for the MMRP due to the demolition and/or disposal activities that occurred. These activities may have resulted in the presence of MEC and/or MC at the MRSs where the releases occurred prior to September 2002 (e^{2}M, 2008). These 18 MRSs identified during the HRR included the following:

- Ramsdell Quarry Landfill (RVAAP-001-R-01)
- Erie Burning Grounds (RVAAP-002-R-01)

- Open Demolition Area #2 (RVAAP-004-R-01)
- Load Line #1 (RVAAP-008-R-01)
- Load Line #12 (RVAAP-012-R-01)
- Fuze and Booster Quarry (RVAAP-016-R-01)
- Landfill North of Winklepeck (RVAAP-019-R-01)
- 40 mm Firing Range (RVAAP-032-R-01)
- Firestone Test Facility (RVAAP-033-R-01)
- Sand Creek Dump (RVAAP-034-R-01)
- Building Nos. #F-15 and F-16 (RVAAP-046-R-01)
- Anchor Test Area (RVAAP-048-R-01)
- Atlas Scrap Yard (RVAAP-050-R-01)
- Block D Igloo (RVAAP-060-R-01)
- Block D Igloo TD (RVAAP-061-R-01)
- Water Works #4 Dump (RVAAP-062-R-01)
- Areas Between Buildings 846 and 849 (RVAAP-063-R-01) (now identified as "Group 8")
- Field at the Northeast Corner of Intersection (RVAAP-064-R-01)

Following the HRR, the Field at the Northeast Corner of the Intersection (RVAAP-064-R-01), otherwise known as the Old Hayfield MRS, was classified as an operational range. This MRS was removed from eligibility under the MMRP, reducing the number of active MRS at the former RVAAP to 17.

The HRR determined that little information was available detailing the use and or disposal operations at the Atlas Scrap Yard. The U.S. Army CTT Range/Site Inventory was reviewed during the HRR and reported that a MEC item had been uncovered in the southwest corner of the MRS. The discovery was documented in a removal report funded by the Joint Munitions Command; however, the reference was not provided. The document further reported that MEC and MD had been sorted and removed from the MRS in 2003. However, neither the type and disposition of the MEC item uncovered nor the MEC/MD removal operation could be verified (e^2M, 2008). Therefore, based on the results of the HRR, it was anticipated that MEC, MD, and/or MC were present throughout the MRS.

1.5.3 2008 e^{2}M Final Site Inspection Report

In 2007, e^{2}M conducted an SI at each of the 17 MRSs under the MMRP. The primary objectives of the SI activities were to collect the appropriate amount of information to support recommendations of "No Further Action," "Immediate Response," or "Further Characterization" concerning the presence of MEC and/or MC at each of the MRSs. The SI also included a review of the HRR for each of the applicable MRSs. Out of the 17 MRSs evaluated during the SI, 14 were recommended for "Further Characterization" under the MMRP that included the Atlas Scrap Yard (RVAAP-050-R-01). A summary of the SI Report (e^{2}M, 2008) recommendations for the Atlas Scrap Yard MRS are presented in **Table 1-4** and are discussed below.

Table 1-4
Site Inspection Report Recommendations

MRS	MRSPP Priority	Recommendation	Basis for Recommendation	
			MEC	MC
Atlas Scrap Yard MRS (RVAAP-050-R-01)	3	Further Characterization of MEC.	MEC potentially buried and contained within debris piles.	MC is covered under the IRP AOC RVAAP-50.

AOC denotes Area of Concern.
IRP denotes Installation Restoration Program.
MC denotes munitions constituents.
MEC denotes munitions and explosives of concern.
MRS denotes Munitions Response Site.
MRSPP denotes Munitions Response Site Prioritization Protocol.

The Atlas Scrap Yard MRS was assigned a *Munitions Response Site Prioritization Protocol* (MRSPP) priority of 3. The MRSPP is a funding mechanism typically performed during the Preliminary Assessment/SI stage to prioritize funding for MRSs on a priority scale of 1 to 8, with a Priority 1 being the highest relative priority. Based on the MRSPP identified for the MRS in the SI Report (e^{2}M, 2008), the Atlas Scrap Yard MRS was selected for inclusion for "Further Characterization." The following subsections summarize the investigation activities performed at the Atlas Scrap Yard MRS during the 2007 SI and the conclusions and recommendations for the MRS as identified in the SI Report (e^{2}M, 2008).

During the 2007 SI, an instrument- and metal-detector-assisted unexploded ordnance (UXO) survey was conducted in the south-central section of the MRS where MEC and MD were reported, and a meandering path survey was conducted around the remaining debris piles in the northern and eastern sections. No surface MEC or MD were found at any of the survey locations. The areas investigated at the Atlas Scrap Yard MRS during the SI field activities are presented on **Figure 1-7**.

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Project Number: 136147

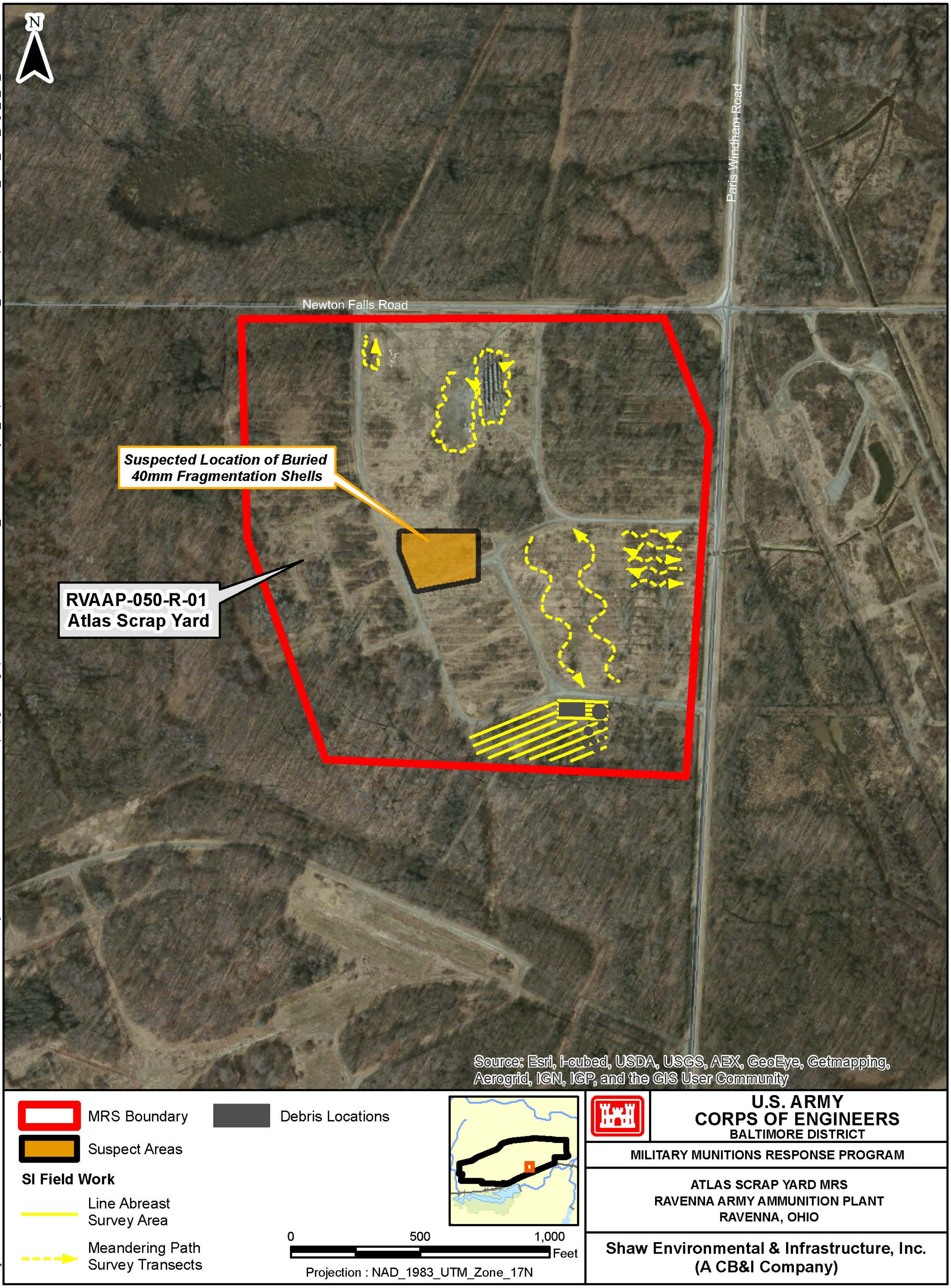

FIGURE 1-7 SI FIELD WORK AND FINDINGS

At the time of the 2007 SI, the presence of demolition debris limited access to the south-central portion of the MRS. A few scattered subsurface anomalies were detected within this area and multiple subsurface anomalies were detected around three piles of debris; however, interference from the metal scrap in the debris piles may have been significant. Very few subsurface anomalies were recorded in the east-central portion of the MRS. As the potential 40 mm fragmentation shell burial area was identified after the completion of the SI field activities; it was not included in the SI survey.

The SI Report noted that detected concentrations of semivolatile organic compounds (SVOCs) and metals exceeded the U.S. Environmental Protection Agency's Preliminary Remedial Goals (PRGs) in soils, sediment, surface water, and groundwater media at the MRS. The PRGs were the screening criteria used at the facility prior to establishing the final facility-wide cleanup goals that are currently used. Low concentrations of an explosive (2,4,6-dinitrotoluene) were detected in surface soil, sediment, and surface water; and a propellant (nitrocellulose) was detected in surface soil only. The explosives and propellant concentrations were all below the screening criteria (MKM, 2007). Evaluation of the chemicals of concern (COCs) identified during the previous investigations under the IRP will continue to be addressed under the IRP; therefore, an MC conceptual site model (CSM) was not developed for the Atlas Scrap Yard MRS for the SI Report. The SI Report recommended "Further Characterization" to address the MEC concerns identified at the Atlas Scrap Yard during the HRR (e^2M, 2007).

1.6 RI Report Organization

The contents and order of presentation of this RI Report are based on the requirements of the *Military Munitions Response Program Munitions Response Remedial Investigation/Feasibility Study Guidance* (U.S. Army, 2009). Specifically, this RI Report includes the following sections:

- **Section 1.0**—Introduction
- **Section 2.0**—Project Objectives
- **Section 3.0**—Characterization of MEC and MC
- **Section 4.0**—Remedial Investigation Results
- **Section 5.0**—Fate and Transport
- **Section 6.0**—MEC Hazard Assessment
- **Section 7.0**—Human Health Risk Assessment
- **Section 8.0**—Ecological Risk Assessment

- **Section 9.0**—Revised Conceptual Site Model
- **Section 10.0**—Summary and Conclusions
- **Section 11.0**—References

Appendices included at the end of this RI Report are as follows:

- **Appendix A**—Digital Geophysical Mapping Report
- **Appendix B—**Ohio EPA Correspondence
- **Appendix C—**Photograph Documentation Log
- **Appendix D—**Intrusive Investigation Results
- **Appendix E—***Munitions Response Site Prioritization Protocol* Worksheets
- **Appendix F—**Responses to Ohio EPA Comments
- **Appendix G—**Ohio EPA Approval Letter

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2.0 PROJECT OBJECTIVES

This chapter presents the preliminary CSM for MEC at the Atlas Scrap Yard MRS based on historical information, identified data gaps associated with the preliminary CSM, and the data quality objectives (DQOs) necessary to achieve the project objectives.

A CSM for an MRS provides an analysis of potential exposures associated with MEC and/or MC and an evaluation of the potential transport pathways MEC and/or MC take from a source to a receptor. Each pathway includes a source, activity, access, and receptor component, with complete, potentially complete, or incomplete exposure pathways identified for each receptor. Each component of the CSM analysis is discussed below:

- **Sources—**Sources are those areas where MEC or MC have entered (or may enter) the physical system. A MEC source is the location where material potentially presenting an explosive hazard (MPPEH) or ordnance is situated or are expected to be found. A MC source is a location where MC has entered the environment.
- **Activity—**The hazard from MEC and/or MC arises from direct contact as a result of some human or ecological activity. Interactions associated with activities describe ways that receptors come into contact with a source. For MEC, movement is not typically significant, and interaction will occur only at the source area as described above, limited by access and activity. However, there can be some movement of MEC through natural processes such as frost heave, erosion, and stream conveyance. For MC, this can include physical transportation of the contaminant and transfer from one medium to another through various processes such that media other than the source area can become contaminated. Interactions also include exposure routes (ingestion, inhalation, and dermal contact) for each receptor. Ecological exposure can include coming into contact with MEC or MC lying on the ground surface or through disturbing buried MEC/MC while burrowing.
- **Access—**Access is the ease in which a receptor can come into contact with a source. The presence of access controls help determine whether an exposure pathway to a receptor is complete, as fences or natural barriers can limit human access to a source area. Furthermore, the depth of MEC items in subsurface soils and associated MC may also limit access by a receptor. Ease of entry for adjacent populations (e.g., lack of fencing) can facilitate trespassing at the MRS, either intentional or accidental.
- **Receptors—**A receptor is an organism (human or ecological) that contacts a chemical or physical agent. The pathway evaluation must consider both current and reasonably anticipated future land use and activities, as receptors are determined on that basis. If present, MEC and/or MC on the ground surface and near the surface can be accessed by facility personnel, contractors, visitors, trespassers, and biota.

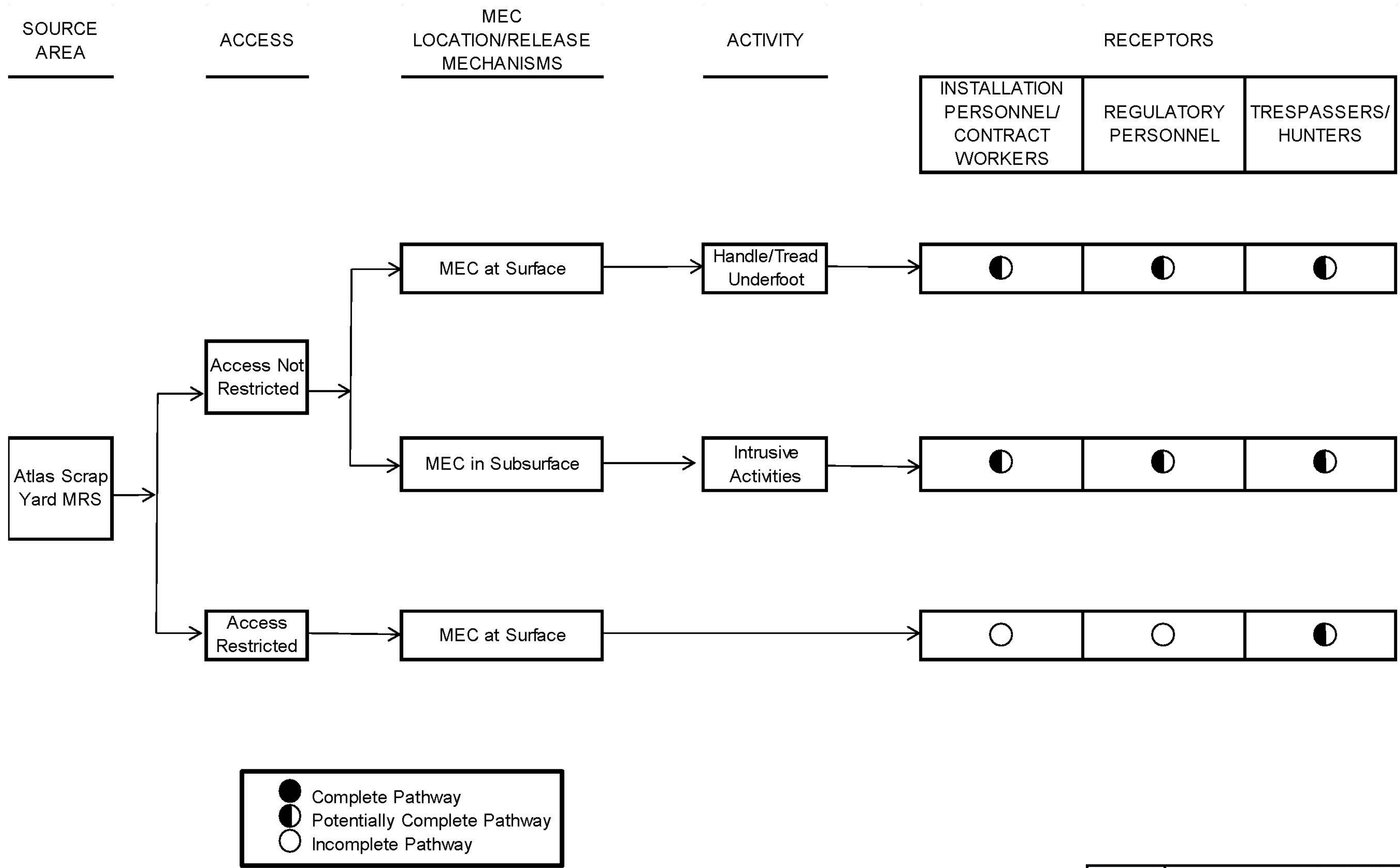
The preliminary CSM developed during the SI identified ecological receptors (biota) to be state-listed species identified as being present at the former RVAAP and listed in **Table 1-3**. For the purposes of the CSMs revised or created based on the RI, biota is identified as the listed and unlisted mammals, birds, and wetland species known to be present at the facility and, based on the MRS physical setting, are reasonably anticipated to be present on either a permanent or transient basis.

In general, the CSM for each MRS is intended to assist in planning, interpreting data, and communicating MRS-specific information. The CSMs are used as a planning tool to integrate information from a variety of resources, to evaluate the information with respect to project objectives and data needs, and to evolve through an iterative process of further data collection or action. A discussion of the preliminary CSM identified for the Atlas Scrap Yard MRS, as presented in the SI Report (e^2M, 2008), is presented in the following section. The data collected during the RI are evaluated in the following chapters and incorporated into this model as discussed in Section 9.0, "Revised Conceptual Site Model."

2.1 Preliminary CSM and Project Approach

The preliminary CSM for the Atlas Scrap Yard MRS is based on MRS-specific data and general historical information including literature reviews, maps, training manuals, technical manuals, and field observations. The MEC CSM was originally developed during the SI process based on guidance from USACE Engineering Manual 1110-1-1200, *Conceptual Site Models for Ordnance and Explosives (OE) and Hazardous, Toxic, and Radioactive Waste (HTRW) Projects* (USACE, 2003a) and is represented by the diagram provided as **Figure 2-1**. An MC CSM was not developed during the SI as MC was being addressed under the IRP and was not recommended for "Further Characterization" under the MMRP. A summary of each of the factors evaluated for the preliminary MEC CSM is discussed below:

- **Sources—**Munitions-related burial and or disposal activities were considered as the primary source of the potentially-explosive MEC at the Atlas Scrap Yard MRS. Based on review of the archival records and available documentation, the principal sources of MEC at the Atlas Scrap Yard MRS were munitions from disposal activities as well as potential burial of 40 mm fragmentation shells. These activities resulted in the potential for MEC/MD to be present in the surface and subsurface soil at the Atlas Scrap Yard MRS.
- **Activity—**Human activities considered for the preliminary CSM were security activities, maintenance activities, environmental sampling under the IRP, and natural resource management activities that had the potential to result in moving or somehow disturbing MEC that could have caused it to detonate.



Source: Final Site Inspection Report, Ravenna Army Ammunition Plant, Ohio (e^2M, 2008)

U.S. ARMY CORPS OF ENGINEERS
BALTIMORE DISTRICT

MILITARY MUNITIONS RESPONSE PROGRAM

ATLAS SCRAP YARD MRS
RAVENNA ARMY AMMUNITION PLANT
RAVENNA, OHIO

Shaw Environmental & Infrastructure, Inc.
(A CB&I Company)

FIGURE 2-1 PRELIMINARY MEC CONCEPTUAL SITE MODEL

- **Access—**At the time of the SI, there was no fence surrounding the MRS; the MRS was not physically restricted and was readily accessible to authorized and unauthorized personnel. These personnel would have had direct access to any potential MEC lying on the ground surface when accessing the MRS.
- **Receptors—**At the time of the SI, current and reasonably anticipated receptors included facility personnel, contractors, hunters, and trespassers. If present, MEC and/or MD and associated MC on the ground surface and near the surface could have been accessed by receptors. The SI considered biota to be state-listed species identified as being present at the facility. The SI determined that no state-listed species were present at the MRS and specific species of biota were not identified as a receptor for the purposes of the CSM.

The release mechanisms identified for MEC during the SI field activities were the reported open storage of munitions in ammunition boxes and the disposal of munitions items. If present, MEC items were expected to be lying on the ground surface, mixed in a pile with other debris, or buried at the MRS. The SI Report (e^{2}M, 2008) identified the exposure pathways to include direct contact with MEC through handling and treading under foot and through the disturbance of subsurface soil. Transport of MEC off the MRS was considered unlikely; however, it was considered possible that the MEC items could be brought to the surface or otherwise exposed by frost heave or disturbance of the debris piles. The preliminary CSM for MEC at the Atlas Scrap Yard MRS, as presented in the SI Report (e^{2}M, 2008), is shown in **Figure 2-1**.

2.2 Applicable or Relevant and Appropriate Requirements and "To Be Considered" Information

Applicable or relevant and appropriate requirements (ARARs) and "to be considered" (TBC) guidance for future anticipated and reasonable remedial actions at the former RVAAP under the MMRP are currently under development. Once ARARs and/or TBC materials have been identified, preliminary remediation goals and remedial action objectives will be developed. The identified ARARs, TBC information, preliminary remediation goals, and remedial action objectives will be included in the follow-on documents as required per the CERCLA process.

2.3 Data Quality Objectives and Data Needs

The DQOs and data needs were determined at the planning stage and are outlined in the Work Plan (Shaw, 2011). The data needs included characterization for MEC and MC associated with former activities at the MRS. The DQOs were developed to ensure the reliability of field sampling, chemical analyses, and physical analyses; the collection of sufficient data; the acceptable quality of data generated for its intended use; and the inference of valid assumptions from the data.

2.3.1 Data Quality Objectives

The DQOs were developed for MEC in accordance with the *Facility-Wide Sampling and Analysis Plan for Environmental Investigations at the RVAAP* (SAIC, 2011), hereafter referred to as the FWSAP, and the U.S. Environmental Protection Agency (EPA) *Data Quality Objectives Process for Hazardous Waste Site Investigations*, EPA QA/G-4HW (2000). **Table 2-1** identifies the DQO process at the Atlas Scrap Yard MRS as presented in the Work Plan (Shaw, 2011).

Table 2-1
Data Quality Objectives Process at the Atlas Scrap Yard MRS

Step	Data Quality Objective
1. State the problem.	Atlas Scrap Yard was used as a storage area for nonexplosive scrap starting in 1969. In 2003, MEC items were identified and removed from the MRS. In addition, a 40 mm fragmentation shell burial area was reportedly located in the central portion of the MRS. Therefore, there is a potential for MEC/MD and MC at the Atlas Scrap Yard MRS. Based on the potential storage and burial activities, there is a potential for MEC/MD on the ground surface and subsurface. In addition, there is a potential for environmental impacts from MC at the MRS.
2. Identify the decision.	The goal of the investigation at Atlas Scrap Yard is to identify the areas impacted with MEC/MD. Sampling for MC will be performed in areas of concentrated MEC/MD in order to further characterize the nature and extent of contamination associated with munitions activities at the MRS. The information obtained during the RI will be used to assess the potential risk and hazards posed to human health and the environment at the MRS.
3. Identify inputs to the decision.	• Historical information • Geophysical investigation • Intrusive inspection • Discrete and incremental environmental media sampling
4. Define the study boundaries.	The RI investigation will be performed in the Atlas Scrap Yard MRS boundaries as defined at the conclusion of the SI Report (e^2M, 2008).
5. Develop a decision rule.	Although formal visual survey transects are not planned at the Atlas Scrap Yard MRS, a visual survey of the surface will be performed during the geophysical investigation. A geophysical survey will be performed at the Atlas Scrap Yard to assess the presence of buried MEC/MD. The geophysical transects will be placed using UXO Estimator® (USACE, 2003b). Shaw and the USACE agreed upon UXO Estimator® inputs of 95 percent confidence and 0.5 MEC per acre. Shaw will dig 100 percent of the anomalies. Incremental samples and discrete samples (surface and subsurface soil) will be collected in areas where concentrated MEC/MD is encountered.
6. Specify limit of decision errors.	QC procedures are in place so that all field work will be performed in accordance with all applicable standards. Further details on the QC process implemented during the RI are located in Section 4 of the Work Plan (Shaw, 2011).

Table 2-1 (continued)
Data Quality Objectives Process at the Atlas Scrap Yard MRS

Step	Data Quality Objective
7. Optimize the design for obtaining data.	The information gathered as part of the field investigation at the Atlas Scrap Yard MRS will be used to determine what potential risks or hazards, if any, are present at the MRS. Shaw will perform a MEC HA to identify the potential MEC hazards. In addition, a facility site-specific HHRA and ERA will be performed on the analytical results for the samples collected. If unacceptable potential risks or hazards to human health and the environment are determined to exist at the MRS at the conclusion of the investigation, then the MRS will be identified for "Further Characterization" under the CERCLA process.

CERCLA denotes Comprehensive Environmental Response, Compensation, and Liability Act of 1980.
ERA denotes ecological risk assessment.
HHRA denotes human health risk assessment.
MC denotes munitions constituent.
MD denotes munitions debris.
MEC denotes munitions and explosives of concern.
MEC HA denotes MEC hazard assessment.
MRS denotes Munitions Response Site.
mV denotes millivolt(s).
QC denotes quality control.
RI denotes Remedial Investigation.
Shaw denotes Shaw Environmental & Infrastructure, Inc.
USACE denotes United States Army Corps of Engineers.
UXO denotes unexploded ordnance.

2.3.2 Data Needs

For MEC, data needs include determining the types, locations, condition, and number of MEC items present at the MRS so that the potential hazard to likely human and environmental receptors can be assessed and remedial decisions can be made. The DQOs were developed in accordance with the FWSAP (SAIC, 2011), the EPA DQO guidance (2000), and past experience with MRSs containing MEC. The data needs for MEC were evaluated using the most applicable methods and technologies, such as UXO Estimator® (USACE, 2003b), which are discussed in the following sections.

For MC, data needs include sufficient information to determine the nature and extent of MC, determine the fate and transport of MC, and characterize the risk of MC coming into contact with potential receptors by performing a human health risk assessment (HHRA) and ecological risk assessment (ERA). More specifically, the data needed are concentrations of MC in the environmental media at the MRS based on the results of the MEC investigation to include sampling and analysis of surface and subsurface soils that potentially pose unacceptable risk to human and ecological receptors. Samples for MC were only collected if concentrated areas of MEC and/or MD were identified at the MRS unless predetermined sample locations were identified in the Work Plan (Shaw, 2011).

2.4 Data Incorporated into the RI

Whenever possible, existing data is incorporated into this RI. The following is a summary of existing data and how data were used:

- **Historical Records Review—**The HRR provides historical documentation regarding the MRS and identifies the types of activities previously conducted, the types of munitions used, and historical finds and incidents. These data were used to identify the expected baseline conditions and other hazards that may be present (e^2M, 2007).
- **IRP Data—**Data collected under the IRP at various MRSs include analytes considered to be MC associated with previous activities at the MRS, although it should be noted that not all analytes are considered as MC. The previous IRP investigations at the MRS have identified SRCs consisting of SVOCs and metals in soils, sediment, surface water, and groundwater that exceeded the PRG screening criteria. Low concentrations of an explosive (2,4,6-dinitrotoluene) were detected in surface soil, sediment, and surface water. A propellant (nitrocellulose) was detected in surface soil only. Neither the explosive nor propellant concentrations exceeded the PRG screening criteria (MKM, 2007). In the event that media sampling was conducted under the RI based on the results of the MEC investigation, the IRP data may be incorporated with the sampling data in order to close any potential data gap. Existing SRCs at the Atlas Scrap Yard MRS continues to be addressed under the IRP.

  For the Atlas Scrap Yard MRS, the IRP data was reviewed and it was determined that incorporation of the data was not necessary, as no MEC or MD that would constitute a source of MC was identified during the RI field effort. Therefore, sampling for MC was not warranted for the RI.
- **SI Data—**The MMRP SI conducted at the facility in 2007 provides subsurface geophysical data obtained from a limited instrument- and metal detector-assisted survey, which was used to preliminarily delineate areas where MEC and/or MD may have been stored or disposed of by burial. MC sampling was not performed during the SI at the Atlas Scrap Yard MRS (e^2M, 2008).

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3.0 CHARACTERIZATION OF MEC AND MC

This chapter documents the approaches used to investigate MEC and MC at the Atlas Scrap Yard MRS in accordance with the DQOs presented in Section 2.0, "Project Objectives." The MEC and MC characterization activities were conducted in accordance with Section 3.0, "Field Investigation Plan," of the Work Plan (Shaw, 2011).

3.1 MEC Characterization

The following section summarizes the geophysical, anomaly reacquisition, and subsequent intrusive investigation activities that were performed at the Atlas Scrap Yard MRS during the RI field activities. Based on the potential storage and burial activities associated with the MRS, it was determined in the SI reporting stage that there is a potential for MEC/MD on the ground surface and subsurface at the MRS. The initial step in evaluating for buried MEC at the Atlas Scrap Yard MRS consisted of performing a digital geophysical mapping (DGM) investigation throughout the MRS as presented in the Work Plan (Shaw, 2011). Visual surveys of surface conditions were performed in conjunction with the geophysical investigation. The results of the DGM survey and intrusive investigation activities are discussed in Section 4.0, "Remedial Investigation Results."

3.1.1 Geophysical Survey Activities

In June and July of 2011, a DGM investigation was performed at the Atlas Scrap Yard MRS to identify potential subsurface areas of MEC and/or MD. The approved sampling coverage presented in the Work Plan (Shaw, 2011) utilized the UXO Estimator® software (USACE, 2003b) to determine the proposed sampling strategy based on the size of the MRS and the expectation that MEC was randomly distributed throughout the MRS. The UXO Estimator® module required a minimum of 5.6 acres of DGM data to be collected over the 66-acre MRS (8.4 percent) based on inputs of 95 percent confidence that there is less than 0.5 MEC per acre. If the proposed area was investigated based on these inputs and the suggested DGM coverage and no MEC is found, the software is then used to evaluate whether the performance criteria have been met based on the actual field data results.

Instrumentation used for the DGM survey consisted of a Geonics EM61-MK2 time domain electromagnetic instrument and a Leica 1200 real-time kinematic (RTK) global positioning system (GPS) for positioning. The DGM platform consisted of a modified standard-wheeled configuration with the lower coil 16 inches above the ground surface. To accommodate the rough and uneven terrain at the Atlas Scrap Yard MRS, the standard metal handle was replaced by a PVC cradle that allowed two people to maneuver the instrument to ensure a steady and even pace for data acquisition. The team that performed the DGM survey consisted of two geophysicists.

The *Digital Geophysical Mapping Report for the Atlas Scrap Yard MRS (RVAAP-050-R-01*), hereafter referred to as the DGM Report, is presented in **Appendix A**. The DGM Report provides a comprehensive review of the DGM survey at Atlas Scrap Yard MRS with regard to data acquisition, processing and analysis, anomaly reacquire, and results of the DGM quality control program.

The DGM system used for the Atlas Scrap Yard MRS investigation and other MRSs at the facility was validated during the start-up phase of the project at an instrument verification strip (IVS) located at Load Line 7. The results of the initial IVS effort are documented in a report titled, *Instrument Verification Strip Technical Memorandum in support of Digital Geophysical Mapping Activities for Military Munitions Response Program Remedial Investigation Environmental Services*. This report/technical memorandum is included as an attachment to the DGM Report in **Appendix A**.

Prior to the DGM survey at the Atlas Scrap Yard MRS, a civil survey and vegetation clearance were performed to prepare the site for the DGM activities.

3.1.1.1 Civil Survey

A Registered Ohio Land Surveyor established two survey monuments at the Atlas Scrap Yard MRS. Each monument was established with third-order horizontal accuracy (residual error less than or equal to 1 part in 10,000). In areas where data could be acquired using the RTK-GPS, the survey monuments were used to provide positional data streamed directly to the EM61-MK2. Portions of some transects were acquired with the fiducial position method due to the extremely dense vegetation that exists at the MRS. In areas where the tree cover prohibited the use of RTK-GPS, the control monuments were used as a source to generate additional control points for the fiducial mode surveys. Additionally, all of the survey data documenting MRS features and obstructions is referenced to the two established survey monuments.

For quality control (QC) purposes, the RTK-GPS positioning system was used to reacquire a known, fixed location each time the system was setup on one of the two survey monuments. Per the project metrics defined in the Work Plan (Shaw, 2011), static measurements for the positioning system were required not to exceed 0.5 foot. The RTK-GPS system provides centimeter level accuracy, and 100 percent of location checks satisfied the metric. All mapping was developed in the North American Datum 1983 Universal Transverse Mercator Zone 17 North Coordinate System.

3.1.1.2 Vegetation Clearance and Inaccessible Areas

Much of the MRS consists of dense vegetation that includes high grasses, thick brush and trees with low-hanging limbs. Vegetation removal was required along transects in order to provide adequate ground clearance for the DGM equipment. Vegetation removal was minimized to the extent possible to allow for the execution of work. No grass mowing was performed between the months of April or August due to the potential for disturbing grassland nesting species.

The wetland at the northwest corner of the MRS is an environmentally sensitive area and vegetation removal at this portion of the MRS was not permitted per direction from the Ohio EPA. The dense vegetation limited the ability for the DGM equipment to access the area and no DGM data were acquired at this portion of the MRS in order to avoid impacting the sensitive areas. In the southeast section of the MRS, no DGM data were acquired due to the presence of a debris pile and associated wetlands area that obstructed data collection. In the north-central section of the MRS, a debris pile consisting primarily of stacked railroad ties prevented DGM data collection at this location. Correspondence with the Ohio EPA regarding the protection of the environmental sensitive area at the MRS is provided in **Appendix B**.

3.1.1.3 Data Collection and Site Coverage

In order to meet the proposed investigation coverage requirement, DGM data were acquired within the MRS boundaries on 49 transects spaced 13 meters apart. Within the suspected 40 mm burial area, the transect spacing was reduced to 6 meters in order to more accurately delineate the potential burial area. The DGM data were collected in all accessible areas within the MRS, and the actual spatial coverage was calculated to be 6.1 acres following the investigation, which represents MRS coverage of 9.2 percent and exceeds the proposed sampling coverage of 5.6 acres presented in the Work Plan (Shaw, 2011). The 6.1 acres of actual DGM coverage equates to a total transect distance of 16.7 miles, with each transect being 1 meter wide. The general DGM procedures performed for data acquisition at the Atlas Scrap Yard MRS consisted of the following:

- The DGM survey area was reviewed by performing a MRS walk-over. Special attention was given to difficult terrain and the presence of obstacles, which created potential safety issues.
- The positioning system was set up at a documented control point of known location or a location was determined by using a minimum of two known control points (e.g., RTS). The location control was checked by at least one “checkshot” to a different control point of known location.
- DGM system instrument functional checks were performed at the start and end of each day and the results were documented.

- DGM data were collected over the area in a systematic fashion with respect to the terrain, vegetation, and obstacles present. The acquisition protocol used navigation techniques proven at the IVS.
- Field logs were used to document MRS conditions during data collection. The field logs included information and observations regarding the data collection process, weather, field conditions, data acquisition parameters, and quality checks performed. The positioning system was used to document the presence of significant site features related to terrain, vegetation, and cultural features so these features could be accounted for during the interpretation of the data.

At the end of each day, the field geophysicist uploaded the DGM data to the site computer, where the data was archived, backed-up, and initially processed and analyzed. Data were also transferred to the Shaw Processing Center in Concord, California on a daily basis for processing and review by the data processor. Raw and final processed data were transferred to USACE at intervals specified in Data Item Description (DID) MMRP-09-004, *Geophysics* (USACE, 2009).

Figure 3-1 provides the area of DGM coverage proposed in the Work Plan (Shaw, 2011). The actual area covered during the DGM survey is discussed and presented in Section 4.0.

3.1.1.4 Data Processing and Interpretation

The geophysical data were processed, analyzed, and interpreted using the methods and approach outlined in the Work Plan (Shaw, 2011). A 5-millivolt (mV) threshold for Channel 2 of the EM61-MK2 was used to initially select anomalies as presented in the Work Plan (Shaw, 2011). Important factors that were considered during the interpretation process include the following:

- Data acquisition methodology (one-dimensional as is the case for Atlas Scrap Yard MRS).
- Types of MEC most likely present at the MRS based on historical data.
- Anomaly shape and signal intensity in relation to the spatial sample density (along track and across track).
- Anomaly time constants.
- Local background conditions.
- Presence of surrounding anomalies (anomaly density).
- Presence of cultural features and sources of interference.
- Anomaly characteristics from the IVS items.

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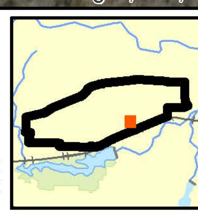
MRS Boundary

Suspect Area

Proposed DGM Transect (15.6 Miles)
Transect Center Line Spacing:
Within 40mm Suspect Area - 13 Transects Spaced 6 Meters Apart
Within Remainder of MRS - 49 Transects Spaced 13 Meters Apart



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U.S. ARMY
CORPS OF ENGINEERS
BALTIMORE DISTRICT

MILITARY MUNITIONS RESPONSE PROGRAM

ATLAS SCRAP YARD MRS
RAVENNA ARMY AMMUNITION PLANT
RAVENNA, OHIO

Shaw Environmental & Infrastructure, Inc.
(A CB&I Company)

FIGURE 3-1 PROPOSED DGM TRANSECTS

Detailed processing and interpretation procedures are provided in the DGM Report in **Appendix A**.

3.1.1.5 Geophysical Field Quality Control Procedures

The geophysical field QC procedures consisted of tests performed at the start and end of each day to ensure the geophysical sensor and positioning equipment were functioning properly and the data were of sufficient quantity and quality to meet the RI objectives in the Work Plan (Shaw, 2011). The performance metrics for the DGM system were derived from a combination of DID MMRP-09-004, *Geophysics* (USACE, 2009) and the USACE Table *Performance Requirements for Remedial Investigations/Feasibility Studies using DGM Methods* (U.S. Army, 2009). Quality objectives and metrics associated with MRS coverage, signal quality during data acquisition, anomaly reacquire, and the intrusive investigation were also developed from the referenced documents.

The DGM field team and the data processor/analyst reviewed and documented the results of the DGM QC program on a Microsoft© Excel Spreadsheet that was updated on a daily basis and delivered to the client for approval. The Microsoft© Excel Spreadsheet is part of the geophysics digital data deliverable and is included in the DGM Report in **Appendix A**.

3.1.2 Anomaly Investigation Activities

Following the completion of the DGM survey in July 2011, anomaly reacquisition was conducted for the locations identified as potentially containing subsurface MEC and/or MD between August and October 2011. These locations were identified as potentially containing subsurface MEC and/or MD based on the results of the DGM data review. From previous facility experience, locations which have EM61-MK2 signal strength (Channel 2) greater than 8 mV are more likely to be MEC/MD than locations with signal strengths less than 8 mV. Based on the results of the DGM survey, the locations were evaluated to determine if they were high density anomalous areas that required excavation using mechanical equipment or were single point anomalies that could be manually investigation (hand dug). All anomaly investigation activities were performed by UXO-qualified personnel. Selection of investigation areas based on the DGM results is discussed further in Section 4.1, "MEC Investigation Results."

3.1.2.1 Individual Anomaly Reacquisition and Investigation Procedures

The UXO-qualified personnel used a Schonstedt magnetometer to first reacquire and then investigate ferrous anomalies identified during the DGM survey as single point anomalies. These personnel used hand tools to unearth an item and as the excavation progressed toward the anomaly source, the UXO technician continued to use the Schonstedt magnetometer to determine the item location both horizontally and vertically. To locate the ground position of the interpreted anomaly coordinates, the navigational system "Waypoint Location" mode was used for the RTK-GPS positioning system. A nonmetallic pin flag, labeled with the unique anomaly identification, was placed in the ground at the interpreted location. Reacquisition of any sampling or dig sheet locations (i.e., interpreted location) was performed to ± 0.5 foot of the coordinates specified on the dig sheet.

Once found, the item was assessed to determine if it was MEC, MD, or other metallic material. Once the item was determined not to be MEC, it was temporarily removed from the excavation hole and a Schonstedt magnetometer was used to confirm no additional ferrous items were located beneath the first item. Once confirmed that the source had been identified and no MEC or MD was present, the item was replaced and the soil was returned back into the investigation hole in reverse order from which it was excavated. The UXO-qualified personnel were also conscious of encountering any cultural artifacts associated with historical cultural or archeological resources.

3.1.2.2 High-Density Anomalous Area Reacquisition and Investigation Procedures

Trenching was performed at locations identified as having high density areas of buried anomalies. Locating the ground position for these areas was similar to the single point anomalies except on a larger scale. The navigational system "Waypoint Location" mode was used for the RTK-GPS positioning system to locate the coordinates of the trench boundary. Nonmetallic pin flag, labeled with the unique anomaly identification, were placed in the ground at the interpreted location of the trench. As for the single point anomaly locations, reacquisition of any sampling or dig sheet locations (i.e., interpreted location) was performed to ± 0.5 foot of the coordinates specified on the dig sheet.

All trenches were mechanically excavated using an excavator. Each trench was approximately 20 to 25 feet long and 3 feet wide and continued in depth until the target anomalies were identified, native material was identified and a clear, distinct boundary between the native and fill material was evident, a maximum depth of 10 feet was attained, or the water table was reached. The maximum depth of excavation at any of the trench locations was 4.5 feet. Soil material in each trench was removed in layers at approximately 1-foot intervals. At the areas identified as having subsurface anomalies, the UXO team worked directly with the excavation crew to identify the anomaly. One UXO technician stood in a safe area at the front of the operation and was responsible for examining the area to be advanced into and to visually observe for the presence of MEC or MD before the MRS was disturbed. Once the soils were excavated, they were spread on 6-mil polyethylene sheeting in an adjacent area where the UXO team member visually examined it for MEC and/or MD materials. Once the item was determined not to be MEC, it was temporarily removed from the excavation hole and a Schonstedt magnetometer was used to confirm no additional ferrous items were located beneath the first item. Once confirmed that the source had been identified and no MEC or MD was present, the item was replaced and the soil was returned back into the investigation trench in reverse order from which it was excavated. No soil was segregated for offsite disposal.

3.1.2.3 Anomaly Investigation Documentation

All anomalies identified during the reacquisition and intrusive investigation activities were logged and recorded in accordance with DID MMRP-09-004, *Geophysics* (USACE, 2009). The ShawGeo and/or ShawMEC software was used to record any discrepancies between the dig sheet location and the actual required location and to note any anomalies that could not be investigated. The anomaly reacquisition and investigation results are further discussed in Section 4.0.

3.1.2.4 Anomaly Field Quality Control Procedures

Ground-truth excavation data reported on anomaly-specific dig sheets was the primary basis for field QC. The dig sheets documented the item description; location; and approximate weight, shape, orientation, and depth. Dig sheets were reviewed by the site geophysicist on a daily basis to determine whether the excavation data were representative of the mV reading for the selected anomaly. Anomalies that were not representative of the excavation results were revisited by the site geophysicist and the UXO QC specialist.

3.1.3 UXO Estimator® Analysis

Following completion of the investigation activities, the UXO Estimator® module was then used to calculate if enough investigation had been performed to satisfy the performance criteria of 0.5 MEC per acre at a 95 percent confidence level based on the actual field data as well as calculate an average ordnance density. The data incorporated into the module for this exercise included the size of the MRS (66 acres), the actual area investigated (6.1 acres), the number of MEC items identified during the investigation, and a 95 percent confidence level. The results of DGM investigation and the UXO Estimator® calculation to determine whether the performance criteria were achieved are discussed in Section 4.1.3.3, "UXO Estimator® Analysis Results."

3.2 MC Characterization

The DQOs in the Work Plan (Shaw, 2011) stated that incremental samples and discrete samples (surface and subsurface soil) would be collected in areas with concentrated MEC or MD. No MEC or MD was identified at the Atlas Scrap Yard MRS during the anomaly reacquisition and intrusive investigation activities and sampling for MC was not warranted.

4.0 REMEDIAL INVESTIGATION RESULTS

This chapter presents a discussion of the results of the RI data that were collected for MEC at the Atlas Scrap Yard MRS in accordance with the procedures discussed in Section 3.0, "Characterization of MEC and MC." These results will be used to determine the nature and extent of MEC and subsequently determine the potential hazards and risks posed to likely human and ecological receptors. Once the risks are determined, they will then be integrated into the preliminary CSMs developed during the SI (e^2M, 2008) that were presented in Section 2.0, "Project Objectives." Photographs of the RI activities performed at the MRS are presented in **Appendix C**.

4.1 MEC Investigation Results

The following sections present the results of the RI field efforts that were performed to achieve the DQOs defined in Section 2.3.1, "Data Quality Objectives," and define the nature and extent of MEC and/or MD in the surface and subsurface at the Atlas Scrap Yard MRS. These efforts included a combination of visual and DGM surveys and intrusive investigations that were conducted in accordance with the Work Plan (Shaw, 2011).

The UXO Estimator® program is a USACE software tool that is used to determine a field sampling plan for ordnance sites and analyze field data after it has been collected (USACE, 2003b). As discussed in Section 3.1.1, "Geophysical Survey Activities," the UXO Estimator® program was used for the purposes of the RI field work at the Atlas Scrap Yard MRS to provide performance criteria that were agreed upon among the stakeholders (0.5 MEC/acre at a 95 percent confidence level) and the confidence level of the actual field data after the field work was complete. Following evaluation of the field results, UXO Estimator® was used to advise if enough sampling had been performed to satisfy the performance criteria.

4.1.1 Visual Survey Results

While no visual survey transects were proposed for the MRS, the potential presence of MEC and/or MD on the ground surface were investigated during the geophysical investigation. A total of 16.7 miles of DGM transects were covered during the geophysical investigation, and no MEC or MD was identified on the ground surface.

4.1.2 Geophysical Survey Results

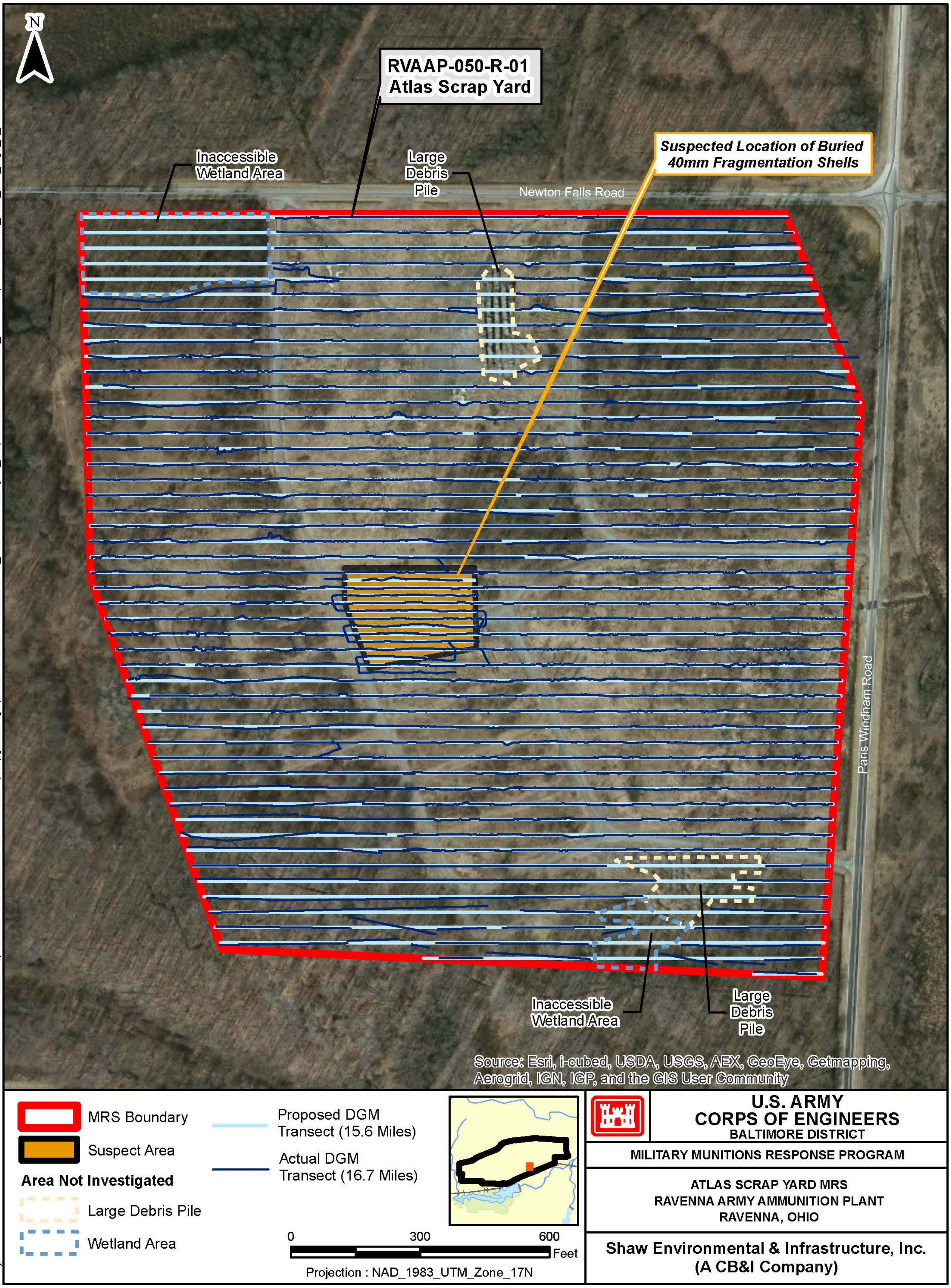
A total of 6.1 acres of (9.2 percent of total MRS area) was surveyed with the DGM equipment at the Atlas Scrap Yard MRS. Per direction from the Ohio EPA, vegetation removal in the wetland at the northwest corner of the MRS was not permitted in order to avoid negatively impacting this area, which is considered to be environmentally sensitive. Therefore, no DGM data were acquired at this portion of the MRS. In addition, identified wetland areas and a large debris pile located in the southeast section of the MRS obstructed data collection and no DGM could be acquired. Lastly, a second debris pile consisting primarily of stacked railroad ties prevented the collection of DGM data at the north-central section of the MRS. **Figure 4-1** identifies the inaccessible areas where no DGM was collected due to the presence of environmentally sensitive wetlands and debris piles, and provides the transect where the DGM surveys were conducted.

Based on a review of the historical and DGM data, Shaw divided the MRS into three distinct regions for anomaly reacquisition and investigation. **Table 4-1** presents the areas where the anomalies were identified, the suspected distribution of anomalies (i.e., segregated or high density areas), the rationale for individual point anomaly or combined investigation due to high density areas and the recommended method of investigation.

Table 4-1
Summary of Proposed Intrusive Investigation Activities

Area at MRS	Anomalies Identified[1]	Actual Anomalies Investigated	Investigation Method
Suspected 40 mm Burial Area	6 well-defined areas with a high density of anomalies within and adjacent to the suspected burial area boundaries	6 well-defined areas with a high density of anomalies within and adjacent to the suspected burial area boundaries	6 burial features within and adjacent to the suspected burial area boundaries to be excavated by 6 excavation trenches[2]
14 areas of relatively high anomaly density of varying shape and size distributed throughout the MRS	2,477 clusters of anomalies that represent aggregates of subsurface metal over 14 well-defined regions	14 high density anomalous regions representing the 2,477 cluster of anomalies	14 high density anomalous regions to be excavated by 27 trenches
Single point anomalies throughout remainder of the MRS	3,621 single point anomalies	3,185 single point anomalies[3]	Hand digging at all 3,185 single point locations[4]

[1] *Based on response for 5 mV (Channel 2) for the EM61-MK2.*
[2] *All trenches excavated mechanically.*
[3] *Selection of 3,185 of the 3,621 single point anomalies was determined based on an EM61-MK2 signal strength (Channel 2) greater than 8 mV (Section 3.1.2).*
[4] *All single point source anomalies excavated by hand.*
mm denotes millimeter.
MRS denotes Munitions Response Site.
mV denotes millivolt(s).



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Project Number: 136147

FIGURE 4-1 ACTUAL DGM TRANSECTS

Figures 4-2 and **4-3** display the results of the EM61-MK2 survey. **Figure 4-2** provides a sensitive color-scale that highlights all single point anomalies above a signal threshold of 5 mV (Channel 2), while **Figure 4-3** uses a lower sensitivity color-scale to delineate the major aggregates of buried metal with increased definition. Further discussion of the anomalies identified and the rationale for investigation at the three different distinct area types identified at the Atlas Scrap Yard MRS is presented in the following sections.

4.1.2.1 Suspected 40 mm Burial Area

The DGM data exhibited four contiguous areas of high density anomalies greater than or equal to the 5-mV threshold within the suspected 40 mm burial area and were identified as areas for potential investigation. Two areas of high density anomalies were identified greater than or equal to 5 mV adjacent to the southeast of the suspected 40 mm burial area and were at least partially associated with debris piles observed on the ground surface at the suspected burial area.

The Work Plan (Shaw, 2011) specified that 100 percent of anomalies identified during the DGM survey at the Atlas Scrap Yard MRS were to be investigated since less than 100 percent of the MRS was covered by DGM; however, since the anomalous locations detected were indicative of mass burial areas, the recommended investigation method at the suspected 40 mm burial area was mechanical trenching. A total of six trenches were recommended to investigate the six burial features identified within and adjacent to the suspected burial area, each approximately 20 to 25 feet in length. The rationale for mechanical excavation is presented in Section 4.1.2.4, "Field Work Variance," and is in accordance with the *Military Munitions Response Program Munitions Response Remedial Investigation/Feasibility Study Guidance* (U.S. Army, 2009).

4.1.2.2 Other High-Density Anomaly Areas

Besides the suspected 40 mm burial area, there were 14 other areas that were characterized by high anomaly densities greater than or equal to the 5-mV threshold, defined shapes, and elevated EM61-MK2 signal intensity. In all, a total of 2,477 clusters of anomalies were detected within the 14 high density regions. Distinct subsurface linear features appeared to be related to cultural features such as former utility lines and/or possible burial debris. Available utility maps for the facility were reviewed to identify any existing abandoned utility lines and these features were removed from requiring further investigation.

The Work Plan (Shaw, 2011) specified that 100 percent of anomalies identified during the DGM survey at the Atlas Scrap Yard MRS were to be investigated since less than 100 percent of the MRS was covered by DGM; however, since the anomalous locations detected were indicative of mass burial areas, the recommended investigation method at the 14 areas of high density anomalies was mechanical trenching. A total of 27 trenches were proposed

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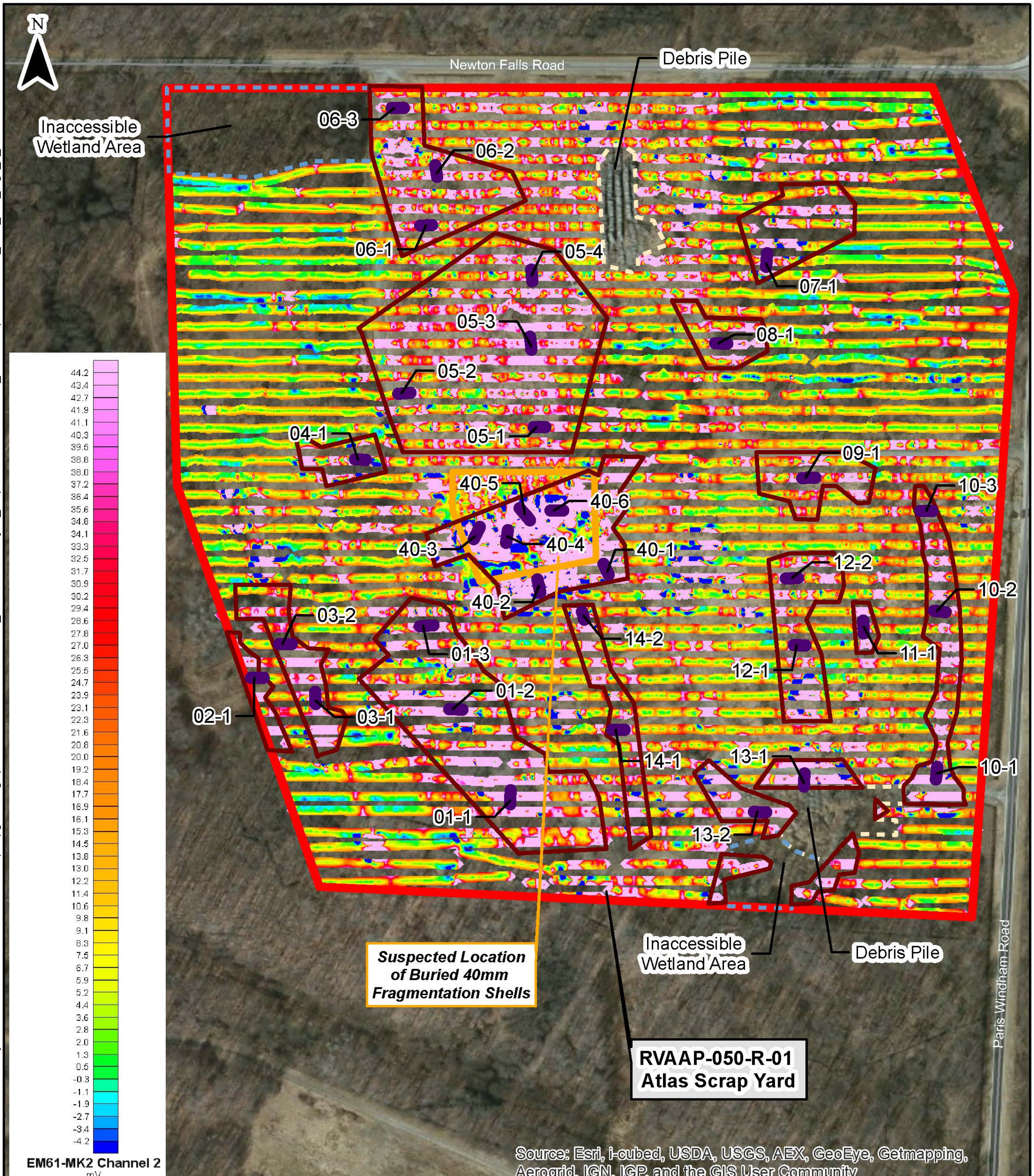


MRS Boundary

Suspect Areas

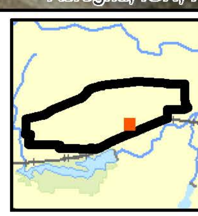
High Anomaly Density Area

Trench Ops Complete

Area Not Investigated

Large Debris Pile

Wetland Area



0 300 600 Feet

Projection : NAD_1983_UTM_Zone_17N

U.S. ARMY CORPS OF ENGINEERS
BALTIMORE DISTRICT

MILITARY MUNITIONS RESPONSE PROGRAM

ATLAS SCRAP YARD MRS
RAVENNA ARMY AMMUNITION PLANT
RAVENNA, OHIO

Shaw Environmental & Infrastructure, Inc.
(A CB&I Company)

Project Number: 136147

FIGURE 4-2 SENSITIVE COLOR-SCALE DGM RESULTS

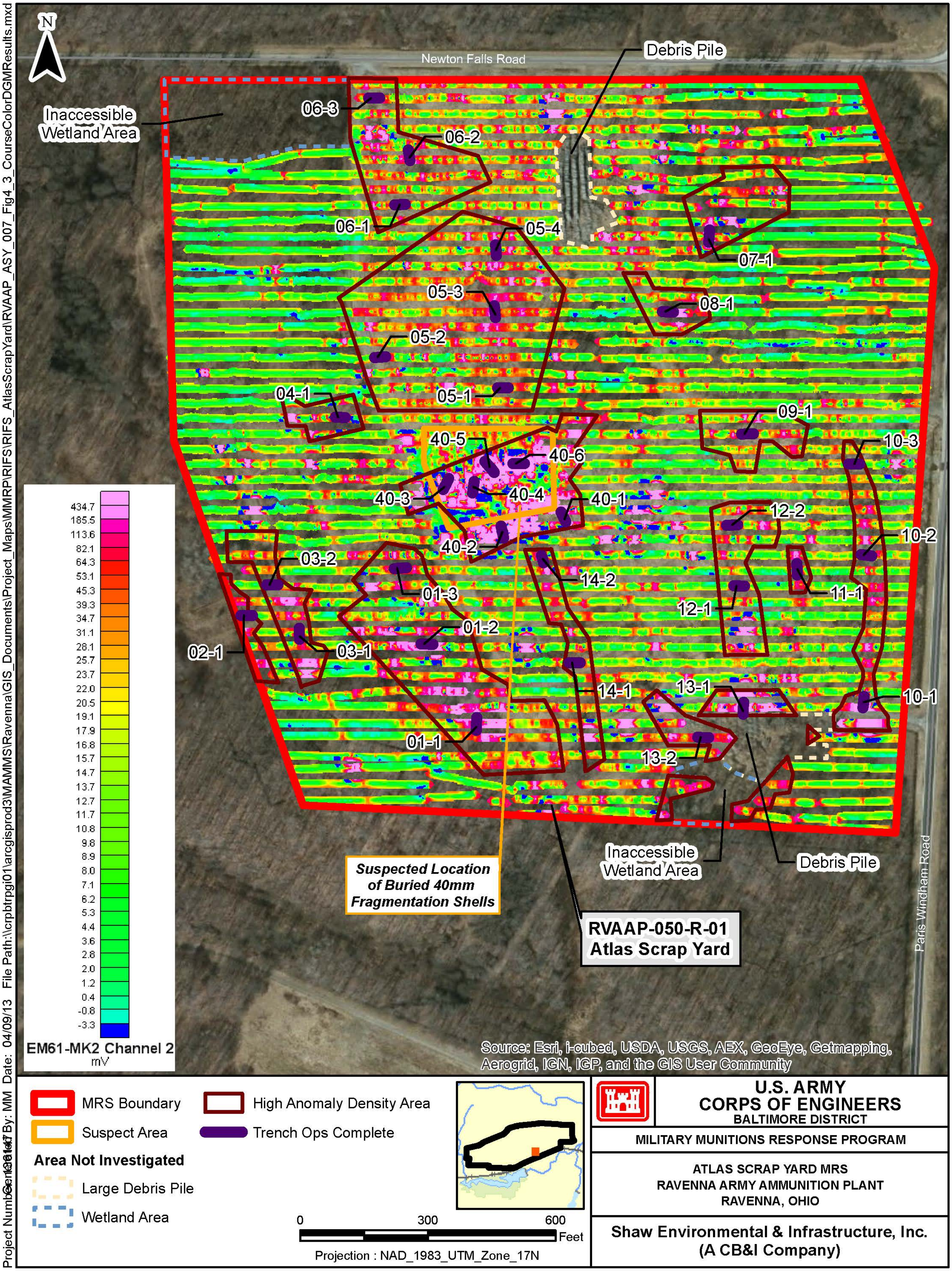


FIGURE 4-3 COARSE COLOR-SCALE DGM RESULTS

between the 14 high density anomaly areas, each approximately 20 to 25 feet in length, to adequately evaluate the detected subsurface items. The rationale for mechanical excavation is presented in Section 4.1.2.4 and is in accordance with the *Military Munitions Response Program Munitions Response Remedial Investigation/Feasibility Study Guidance* (U.S. Army, 2009).

4.1.2.3 Single Point Anomalies

Outside of the 40 mm burial area and the 14 high anomaly density regions, a total of 3,621 single point anomalies were identified greater than or equal to the 5-mV threshold throughout the MRS. The Work Plan (Shaw, 2011) specified that 100 percent of anomalies identified during the DGM survey at the Atlas Scrap Yard MRS were to be investigated since less than 100 percent of the MRS was covered by DGM; however, only 3,185 individual anomalies were recommended for further investigation. A total of 250 anomalies were removed from requiring evaluation since they were either identified by the UXO team as a cultural feature on the ground or were nails placed flush on the ground surface for the fiducial transects. Another 174 anomalies were recommended to be removed from requiring investigation since the responses were less than or equal to 8 mV, which is notably higher than the 5-mV threshold used to identify anomalies during the DGM survey. The rationale for reducing the number of individual anomaly locations and increasing the requisition response threshold to 8 mV is discussed in further detail in Section 4.1.2.4.

4.1.2.4 Field Work Variance

The Work Plan (Shaw, 2011) originally called for a 100 percent investigation of all single point anomalies identified during the DGM investigation since 100 percent of the MRS was not covered by DGM. However, based on the unanticipated large-scale burial areas and extensive number of individual point anomalies detected during the DGM survey, field changes were requested to the approved intrusive investigation process. These field changes were included in a memorandum to the Ohio EPA entitled *DGM Survey Results and Proposed Intrusive Investigation Locations for the Atlas Scrap Yard (RVAAP-050-R-01)*. The memorandum is presented as an attachment in to the DGM Report in **Appendix A**.

This memorandum provided a summary of the DGM results and suggested that 100 percent of single point anomalies found to be greater than or equal to 8 mV (348 items) be investigated along with a random selection of 50 percent of the single point anomalies less than 8 mV (174 items). This recommendation was based on the results of the IVS where smaller MEC items in the near surface produced a response that exceeds 8 mV as well as the DGM results at other MRSs at the facility under the MMRP where intrusive activities indicated that no items identified below 8 mV were MEC or MD. The memorandum suggested that a total of 3,023 anomalies greater than or equal to 8 mV (excluding cultural features and transect nails) and 174 anomalies less than 8 mV be investigated (total of 3,197). After the submittal of the memorandum, ongoing review of the DGM data resulted in the identification of anomaly locations which had multiple targets that were subsequently removed and replaced with a single target location. Therefore, a total of 3,185 single point anomalies were identified for reacquisition and subsequent intrusive investigation.

In addition to the single point anomalies, 6 distinct burial features at and immediately adjacent to the suspected 40 mm burial area and 2,477 clusters of anomalies detected at 14 areas throughout the MRS were identified during the DGM survey. The memorandum recommended mechanical trenching at these locations since this method would provide more useful information in the areas of high density anomalies where extensive buried debris over small areas were anticipated. Mechanical trenching is considered as an effective method in the *Military Munitions Response Program Munitions Response Remedial Investigation/Feasibility Study Guidance* (U.S. Army, 2009) for investigating larger areas of heavy ferrous metal concentrations. The Ohio EPA approval of the memorandum is provided in **Appendix B**.

4.1.2.5 Geophysical Quality Control Results

The DGM data were processed and interpreted consistent with the Work Plan (Shaw, 2011). Data was acquired in all areas void of thick vegetation, wetlands, debris piles, and deadfall. The DGM quality objectives and metrics were achieved for all data collected. The geophysical data files generated during the DGM activities consist of field data and QC test files. This data and the results of the DGM quality objectives and metrics are discussed and presented in further detail in the DGM Report in **Appendix A**.

4.1.3 Intrusive Investigation Results

The section presents the results of the anomaly investigation activities performed at the Atlas Scrap Yard MRS based on the DGM survey findings. A total of 3,185 single point source anomaly locations, 6 distinct burial features at and immediately adjacent to the suspected 40 mm burial area, and 14 high density areas of anomalies throughout the remainder of the MRS were intrusively investigated. All single point source anomalies selected for intrusive investigation were manually investigated by hand digging. The 14 high density areas and the six burial features within and adjacent to the suspected 40 mm burial area were investigated using mechanical excavation at 33 trenches. **Table 4-1** provides a summary of the proposed intrusive investigation activities.

4.1.3.1 Trench Investigation Results

A total of four trenches were excavated within the suspected 40 mm burial area and two trenches were excavated adjacent to the southeast boundaries of the suspected 40 mm burial area. Twenty-seven trenches were excavated at the remaining 14 high density anomaly areas. No MEC or MD was uncovered during the excavations conducted at the 33 trench locations. Trenches were excavated until the target anomalies were identified; native material was identified and a clear, distinct boundary between the native and fill material was evident; a maximum depth of 10 feet was attained; or the water table was reached. For the majority of trenches, native soil was encountered between 36 and 56 inches bgs. A total of 12,851 pounds of "Other Debris" items were identified within the 33 trenches. "Other Debris" can represent any form of debris determined not to be munitions related, including scrap metal, hot rocks (i.e. slag), nails, pipe, and construction debris. The "Other Debris" quantities were determined by the UXO teams in the field. All items were left in place and the trenches backfilled with excavated material. **Table 4-2** summarizes the results and includes each trench, the maximum depth attained, a description of the "Other Debris" uncovered, and the estimated weight of the debris.

Table 4-2
Trench Investigation Results

Trench Number	Maximum Depth (inches bgs)	Description of "Other Debris"	Approximate Weight (lbs)
40-1	48	Scrap Metal	100
40-2	36	Scrap Metal	500
40-3	54	Scrap Metal	200
40-4	48	Scrap Metal	1
40-5	48	Scrap Metal	500
40-6	48	Scrap Metal	500
01-1	24	Utility Pipe	50
01-2	30	Pipe and Concrete	50
01-3	18	Pipe, Wire, Construction Debris	50
02-1	48	Slag Pipe Construction Debris	100
03-1	36	Hot Rocks and Slag	100
03-2	48	Pipe and Slag	50
04-1	24	Water Pipe and Construction Debris	100
05-1	36	Hot Rocks/Soil	2,000
05-2	36	Hot Rocks/Soil	2,000
05-3	48	Railroad Ties with Bolts	1,000
05-4	18	Scrap Metal	5
06-1	36	Scrap Steel	30
06-2	48	Reinforced Concrete Slab	5,000

Table 4-2 (continued)
Trench Investigation Results

Trench Number	Maximum Depth (inches bgs)	Description of "Other Debris"	Approximate Weight (lbs)
06-3	48	Scrap Steel	10
07-1	24	Fence Post	10
08-1	12	Water Pipe	30
09-1	36	Scrap Metal	5
10-1	24	Scrap Metal	35
10-2	3	Wire, Scrap Metal, and Slag	5
10-3	36	Wooden Crates with Hardware	30
11-1	6	Scrap Metal	10
12-1	6	Pipe and Slag	100
12-2	24	Pipe and Wire	50
13-1	6	Concrete Slab	100
13-2	18	Bolt	20
14-1	2	Scrap Metal	10
14-2	24	Scrap Metal	100
		Total:	**12,851**

bgs denotes below ground surface.
lbs denotes pounds.

Further details of the high density anomaly investigation results at the trench locations are presented in **Appendix D**. The results of the intrusive investigations are presented in **Figure 4-4**.

4.1.3.2 Single Point Source Anomaly Investigation Results

A total of 3,185 single point source anomalies were identified for reacquisition following the DGM survey. During the reacquisition process, 60 of the 3,185 single point source anomalies were determined to have the source item on the ground surface rather than buried below the surface, and therefore did not require intrusive investigation to resolve. An additional 34 anomalies were not intrusively investigated due to not finding the peak during reacquisition. The average initial EM61-MK2 signal strength (Channel 2) of the 34 anomalies was 6 mV, which is near the lower limit of the 5- to 8-mV selection criteria. During the reacquisition process the geophysicist reported that at 31 of the 34 locations, the anomaly was likely originally detected as a result of the rugged terrain encountered during data acquisition, as the average EM61-MK2 Channel 2 reacquire value for the 31 locations was 1.2 mV. At the

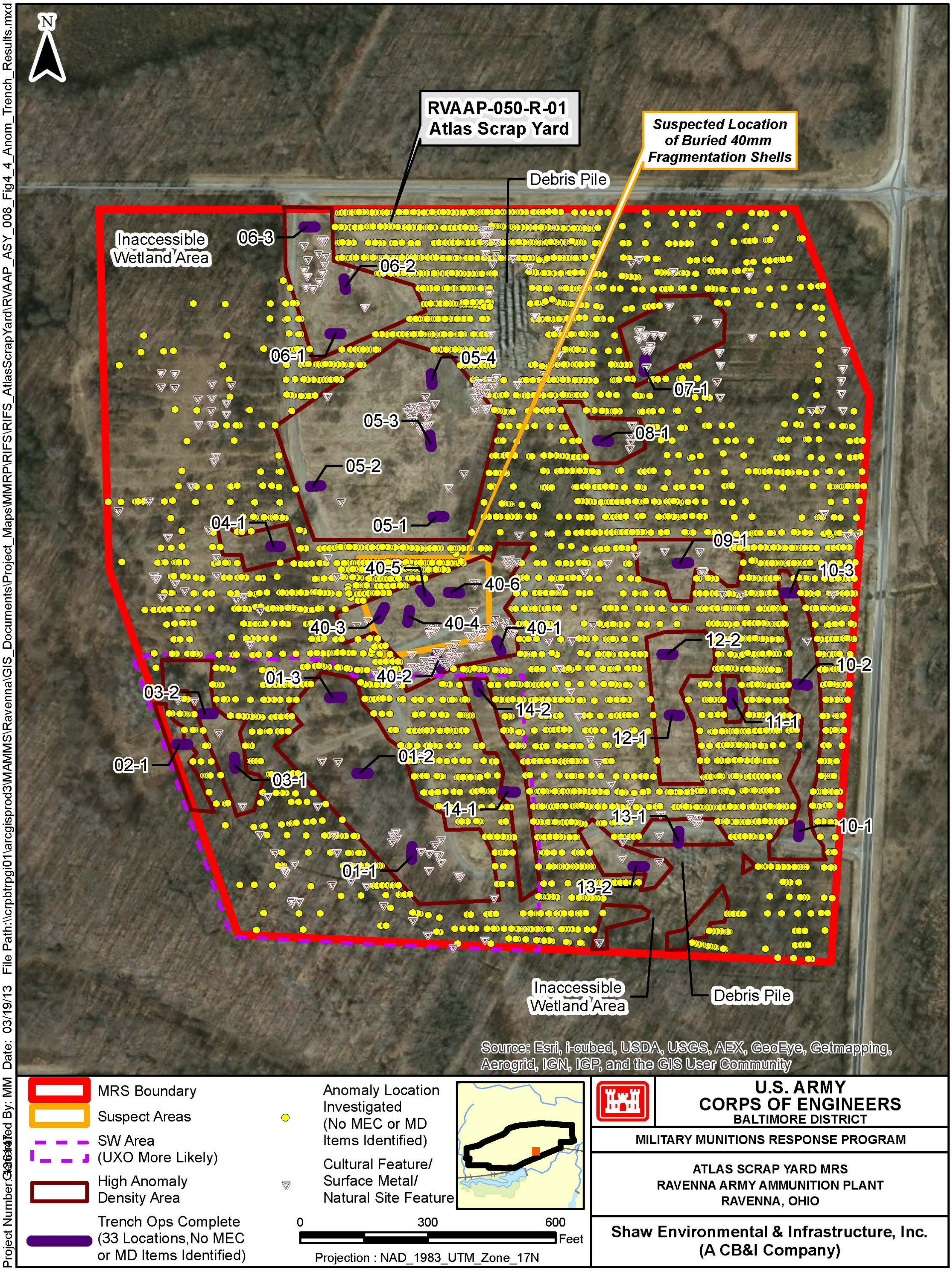


FIGURE 4-4 SINGLE ANOMALY AND TRENCH INTRUSIVE INVESTIGATION RESULTS

three remaining locations, the average Channel 2 response during reacquire was 2 mV. The stated reacquire values for the 34 anomalies that were not investigated are well below the 5- to 8-mV selection criteria. A root cause analysis was not required, as less than 15 percent (1.06 percent) of the anomalies produced inconsistent results meaning that the reacquisition results were well within the acceptable limits.

A total of 3,090 single point anomalies were intrusively investigated by hand following reacquisition. During the intrusive investigation for the point source anomalies, no MEC or MD was identified. A total of 58,008 pounds of “Other Debris”, consisting primarily of construction debris and scrap metal, were determined by the UXO teams in the field at the 3,090 individual source anomaly locations. All “Other Debris” was left in place. Further details of the investigation results at the individual target locations are presented in **Appendix D**. The results of the intrusive investigations are presented in **Figure 4-4**.

4.1.3.3 UXO Estimator® Analysis Results

The UXO Estimator® module (USACE, 2003b) was used to analyze the data collected during the intrusive trench and single point anomaly investigations to determine if the performance criteria target density of 0.5 MEC per acre at a 95 percent confidence level were met for the Atlas Scrap Yard MRS. A total of 6.1 acres of the 66-acre MRS were investigated and no MEC was found; therefore, UXO Estimator® calculated that sampling was adequate to achieve the DQOs. Based on the results of the SI and RI field investigations, it is not expected that a MEC source or explosive safety hazard is present at the Atlas Scrap Yard MRS, as no MEC or MD have been found to date.

5.0 FATE AND TRANSPORT

This intent of this chapter is to describe the fate of contaminants in the environment and potential transport mechanisms for MEC and MC identified at the Atlas Scrap Yard MRS. Contaminant fate refers to the expected final state that an element, compound, or group of compounds will achieve following release to the environment. Contaminant transport refers to migration mechanisms away from the source area. However, as no MEC or MD was found at the Atlas Scrap Yard MRS during the SI and RI field activities and an explosive hazard is not anticipated to exist at the MRS, a discussion on the fate and transport of MEC at the MRS is determined to be unwarranted.

Since no MEC or MD was found during the RI, the release of MC from a MEC item is highly unlikely. Because existing SRCs at the Atlas Scrap Yard MRS are being addressed under the IRP, fate and transport of MC and environmental conditions affecting such fate and transport are best addressed under the IRP program.

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6.0 MEC HAZARD ASSESSMENT

In accordance with the Work Plan (Shaw, 2011), an evaluation of the MEC hazard at the Atlas Scrap Yard MRS was to be prepared in accordance with the *Interim Munitions of Concern Hazard Assessment (MEC HA) Methodology* (EPA, 2008). The MEC hazard assessment (HA) process was developed to evaluate the potential explosive hazard associated with conventional MEC present at an MRS under a variety of MRS conditions, including various cleanup scenarios and land use assumptions. The MEC HA addresses human health and safety concerns associated with potential exposure to MEC at a MRS. No MEC or MD items were identified at the MRS during either the 2007 SI or 2011 RI field activities, and these results have been interpreted to indicate that no MEC source or explosive safety hazard is present for likely receptors at the MRS. Based on the findings of the RI field work, the calculation of a MEC HA score was not warranted for the Atlas Scrap Yard MRS.

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7.0 HUMAN HEALTH RISK ASSESSMENT

The purpose of an HHRA is to document whether MRS conditions may pose a potential risk to current or future MRS receptors and to identify which, if any, MRS conditions need to be addressed further in the CERCLA process. Since no MEC or MD was identified at the Atlas Scrap Yard MRS during the RI field activities, sampling for MC was not warranted in accordance with the Work Plan (Shaw, 2011). Therefore, an HHRA was not required for inclusion in this report. An HHRA is being conducted under the IRP since SRCs were detected during previous IRP investigations.

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8.0 ECOLOGICAL RISK ASSESSMENT

An ERA evaluates the potential for adverse effects posed to ecological receptors from potential releases at a MRS. Since no MEC or MD was identified at the Atlas Scrap Yard MRS during the RI field activities, sampling for MC was not warranted in accordance with the Work Plan (Shaw, 2011). Therefore, an ERA was not required for inclusion in this RI Report. An ERA is being conducted under the IRP since SRCs were detected during previous IRP investigations.

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9.0 REVISED CONCEPTUAL SITE MODEL

This chapter presents the revised CSM for MEC at the Atlas Scrap Yard MRS based on the results of the data collected for the RI and previous information provided in the SI Report (e^2M, 2008) and the HRR (e^2M, 2007). The preliminary MEC CSM was discussed in Section 2.0 and the summary of the RI results were presented in Section 4.0. Following the integration of the RI results into the CSM for MEC, the MRSPP evaluation for the MRS was reevaluated to include the results of the RI.

9.1 MEC Exposure Analysis

This section summarizes the RI data results for the MEC exposure pathway analyses for the MRS. As discussed in Section 2.1, "Preliminary CSM and Project Approach," each pathway includes a source, activity, access, and receptor, with complete, potentially complete, and incomplete exposure pathways identified for each receptor. A pathway is considered complete when a source (MEC) is known to exist and when receptors have access to the MRS while engaging in some activity that results in contact with the source. A pathway is considered potentially complete when a source (MEC) has not been confirmed, but is suspected to exist and when receptors have access to the MRS while engaging in some activity that results in contact with the source. Lastly, an incomplete pathway is any case where one of the four components (source, activity, access, or receptors), is missing from the MRS.

9.1.1 Source

A MEC source is the location where MPPEH or ordnance is situated or is expected to be found. The Atlas Scrap Yard MRS was used as a storage area for nonexplosive scrap and anecdotal evidence was identified during the HRR to suggest that munitions items may have been disposed of at the MRS. In addition a 40 mm fragmentation shell burial area was suspected to be at the MRS. As discussed in Section 1.4, the CTT Range/Site Inventory reported that a MEC and MD removal activity had occurred at the MRS in 2003. During the HRR and subsequent investigations, the type, location, and disposal of the items could not be verified.

The UXO survey activities during the 2007 SI field effort resulted in no MEC or MD findings. At the end of the SI Report (e^2M, 2008), it was determined that the extent of MEC lying on the ground or buried at the MRS was not fully understood, in particular the potential for buried 40 mm fragmentation shells. Based on historical operations at the MRS, the MEC source would be expected to be found on the surface and/or subsurface soils.

During the RI field activities, no MEC or MD was identified during the visual survey or subsurface investigation. As discussed in Section 4.1.3.3, "UXO Estimator® Analysis Results," sampling was determined to be adequate to satisfy the target density DQO of 0.5 MEC per acre at a 95 percent confidence level. Although only a statistical portion of the MRS was investigated, no evidence of MEC or MD was encountered during the intrusive investigation at the 33 trenches within high density areas, including 6 trenches within and adjacent to the suspected 40 mm fragmentation shell burial area, and the 3,185 single item anomalies. These results suggest that there is no MEC source or explosive safety hazard present at the Atlas Scrap Yard MRS.

9.1.2 Activity

Activity describes ways that receptors come into contact with a source. Current activities at the Atlas Scrap Yard MRS include storage of construction materials, maintenance activities, natural resource management activities, and environmental sampling under the IRP. Most of these activities involve foot traffic only; however, the sampling and remedial activities may include disturbing surface and subsurface soils. Biota activities at the MRS may include meandering on the ground surface or burrowing activities. The OHARNG anticipated future land use for the Atlas Scrap Yard MRS is military training.

9.1.3 Access

Access describes the degree to which a MEC source or environment containing MEC is available to potential receptors. Once on the installation, there is currently no unrestricted access to the MRS for current authorized or unauthorized receptors. Siebert stakes and signs are currently present along the perimeter of the MRS identifying the presence of the MRS and restricting access; however, these mechanisms do not physically restrict receptors from being able to enter the MRS. Once on the MRS, receptors would have access to any MEC in surface soil; however, receptors associated with any environmental sampling activities would have access to any MEC in both surface and subsurface soils.

9.1.4 Receptors

A receptor is an organism (human or ecological) that comes into physical contact with MEC. Human receptors identified for the Atlas Scrap Yard MRS include both current and anticipated future land users. Receptors (biota) are based on animal and aquatic species that are likely to occur in the terrestrial and aquatic habitats at the MRS. The primary MRS-specific biota identified for the MRS include aquatic biota, terrestrial invertebrates (earthworms), voles, shrews, rabbits, robins, foxes, hawks, muskrats, ducks, minks, and benthic invertebrates (insect larvae, crayfish, snails, clams and bivalves) (USACE, 2003c).

Potential users associated with the current activities include facility personnel, contractors, and occasional trespassers. The National Guard Trainee has been identified as the potential user for military training, the future land use at the MRS, and is considered the most sensitive of the identified current and future potential users that may become exposed to any potentially remaining MEC at the MRS.

9.1.5 MEC Exposure Conclusions

The information collected during the RI was used to update the preliminary MEC CSM for the Atlas Scrap Yard MRS and to identify all actual, potentially complete, or incomplete source-receptor interactions for the MRS for current and future land uses. Evaluation of the end-use receptors for future land use in the revised CSM is consistent with the facility human health risk assessment approach (USACE, 2005). The revised MEC Exposure Pathway Analysis is presented on **Figure 9-1**.

A statistical approach was taken for the investigation at the Atlas Scrap Yard MRS and a portion of the MRS was investigated by visual survey, DGM survey, and intrusive investigation. No MEC or MD was identified on the ground surface or in the subsurface within the 6.1 acres investigated. Based on the results of the SI and RI field investigations, it is not expected that a MEC source or explosive safety hazard is present at the Atlas Scrap Yard MRS, as no MEC or MD have been found to date.

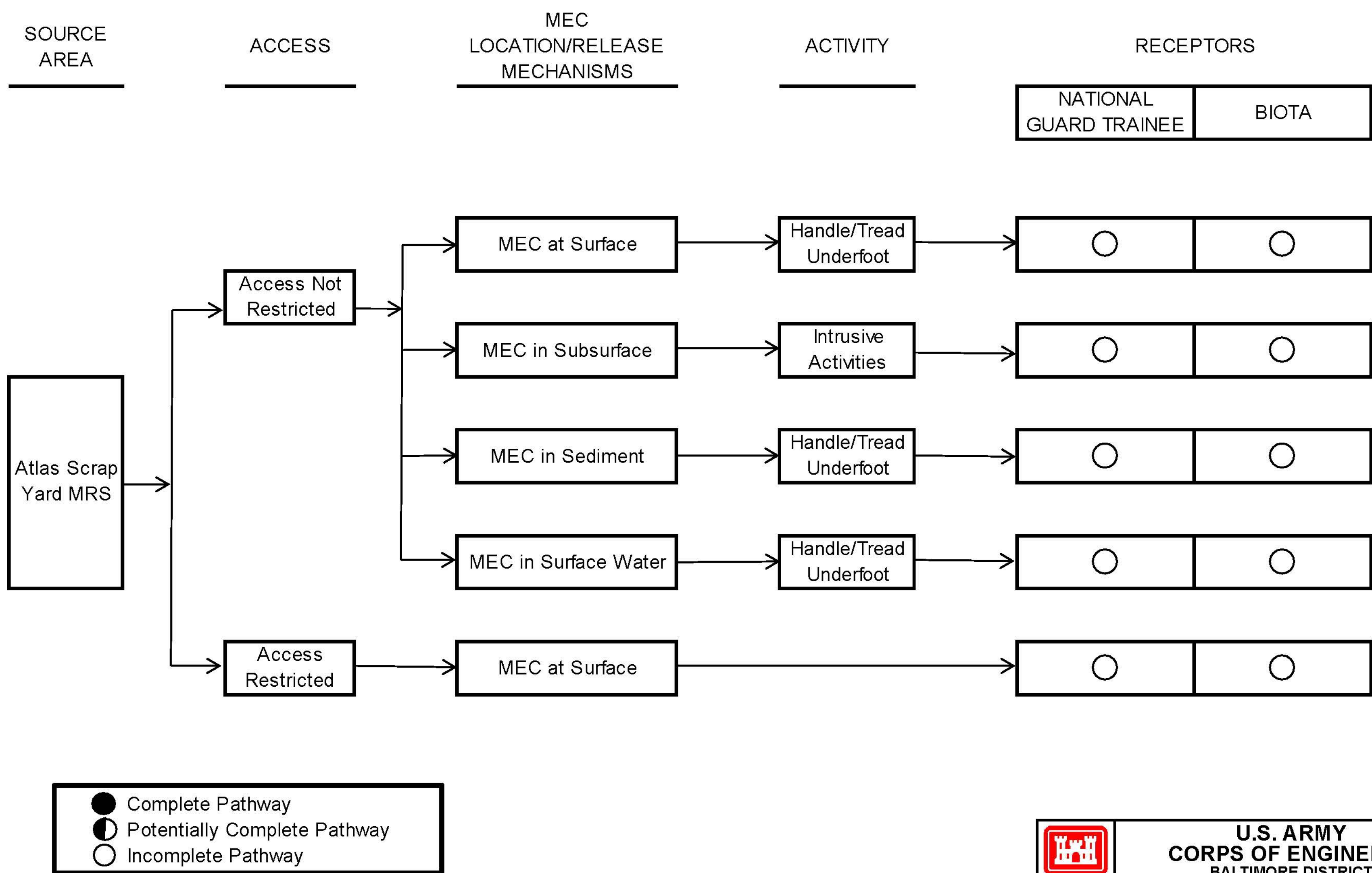
Given that no MEC source has been identified and an explosive safety hazard is not anticipated to exist at the Atlas Scrap Yard MRS, there are no activity/access/receptor interactions ongoing or anticipated under the future land use where a receptor may come into contact with MEC. As a result, the revised CSM for MEC identifies incomplete exposure pathways in surface soil, subsurface soil, surface water, and sediment for all receptors having access to the MRS.

9.2 MC Exposure Analysis

Since no MEC was identified during the RI investigations at the Atlas Scrap Yard MRS, sampling was not warranted at the MRS in accordance with the Work Plan (Shaw, 2011). Therefore, the CSM for MC identifies incomplete exposure pathways for all receptors at the MRS. Evaluation for COCs identified during previous investigations under the IRP at the Atlas Scrap Yard MRS will continue to be addressed under the IRP.

9.3 Uncertainties

The primary uncertainty related to the evaluation of the RI results at the Atlas Scrap Yard MRS is associated with the incomplete record of the historical operations at the MRS since demolition of the construction camp buildings following World War II and the statistical investigation approach utilized for the RI.



U.S. ARMY
CORPS OF ENGINEERS
BALTIMORE DISTRICT

MILITARY MUNITIONS RESPONSE PROGRAM

ATLAS SCRAP YARD MRS
RAVENNA ARMY AMMUNITION PLANT
RAVENNA, OHIO

Shaw Environmental & Infrastructure, Inc.
(A CB&I Company)

FIGURE 9-1 REVISED MEC CONCEPTUAL SITE MODEL

Review of the historical records and previous investigations conducted at the Atlas Scrap Yard MRS indicates any munitions produced or used at the facility may have been stored or disposed at the MRS, including small arms, explosives, pyrotechnics, propellants, mortars, medium and large caliber munitions, landmines, hand grenades, flares, bombs, detonators, or fuzes. Although the disposal of munitions at the MRS has not been confirmed, historical photographic evidence indicates that many of these items were stockpiled by the sides of the roads running through the MRS prior to 2003 (Ohio EPA, 2013). The DGM survey and intrusive investigation covered only approximately 9 percent of the MRS and although no MEC or MD was encountered, there is minimal uncertainty with regard to the nature of the risk posed by any potentially remaining MEC within the remaining areas of the MRS that were not investigated during the RI field activities.

The DGM survey coverage for the RI was designed based on the UXO Estimator® program that at a 95 percent confidence level, a minimum MEC density of 0.5 MEC/acre was expected to be found at the MRS. The UXO Estimator® calculated the statistical upper bound density of MEC to be 0.445 MEC per acre at a 95 percent confidence level based on actual field results. Therefore, it is statistically possible that MEC may be present at the MRS even though confirmed discoveries have not been made to date. However, as the DQOs were met and no MEC/MD was discovered during the RI field activities, the uncertainty that MEC is present at the MRS is greatly reduced. Although the potential for MEC/MD items to be present at the MRS is considered to be low, in the event that MEC/MD is found at the MRS in the future, the U.S. Army will be responsible for subsequent removal and cleanup.

9.4 Munitions Response Site Prioritization Protocol

The DoD proposed the MRSPP (32 Code of Federal Regulations Part 179) to assign a relative potential risk priority to each defense MRS in the MMRP Inventory for response activities. These response activities are to be based on the overall conditions at each location, taking into consideration various factors related to explosive safety and environmental hazards (68 Federal Regulations 50900 [32 Code of Federal Regulations 179.3]). The revised MRSPP document for the Atlas Scrap Yard MRS is being prepared separately and is included in this RI Report as **Appendix E** for reference only.

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10.0 SUMMARY AND CONCLUSIONS

This chapter summarizes results of the RI field activities conducted at the Atlas Scrap Yard MRS. The purpose of the RI was to determine whether the Atlas Scrap Yard MRS warrants further response action pursuant to CERCLA and the NCP. More specifically, the RI was intended to determine the nature and extent of MEC and MC and subsequently determine the potential hazards and risks posed to likely human and ecological receptors by MEC and MC. Additional data are also presented in this RI Report to support the identification and evaluation of alternatives in a FS, if required. A summary of the RI results for the Atlas Scrap Yard MRS is presented in **Table 10-1**.

Table 10-1
Summary of Remedial Investigation Results

MRS Name	Proposed Investigation Area (Acres)	Actual Area Investigated (Acres)	MEC and/or MD Found?	MC Detected?	MC Risk Analysis
Atlas Scrap Yard	5.6	6.1	No	NS	No Further Action

MC denotes munitions constituents.
MD denotes munitions debris.
MEC denotes munitions and explosives of concern.
MRS denotes Munitions Response Site.
NS denotes not sampled.

10.1 Summary of Remedial Investigation Activities

Information from the Atlas Scrap Yard MRS relating to the potential presence of MEC and associated MC is compiled and evaluated in this RI Report. The sources of this information were obtained during previous investigations, including the ASR (USACE, 2004), the HRR (e^2M, 2007), and the SI Report (e^2M, 2008).

The preliminary MEC CSM was developed during the SI (e^2M, 2008) phase of the CERCLA process and was used to identify data needs and DQOs as outlined in the Work Plan (Shaw, 2011). The data needs and DQOs were determined at the planning stage of the RI activities and included characterization of the nature and extent of MEC and MC associated with former activities at the MRS. The DQOs were developed to ensure the reliability of field sampling, chemical analyses, and physical analyses; the collection of sufficient data; the acceptable quality of data generated for its intended use; and the inference of valid assumptions from the data. The DQOs for the Atlas Scrap Yard MRS identified the following decision rules that were implemented in evaluating the MRS:

- Perform a geophysical investigation to identify if buried MEC or MD was present.
- Perform an intrusive investigation of anomalies identified during the geophysical investigation to evaluate if MEC/MD was present.
- Collect incremental and/or discrete soil samples (surface and subsurface) in areas with concentrated MEC/MD, if any, to evaluate for MC.
- Process the information to evaluate whether there are unacceptable risks to human health and the environment associated with MEC and/or MC and make a determination if further investigation was required under the CERCLA process.

10.1.1 Geophysical Investigation

In June and July of 2011, Shaw performed a DGM investigation to identify potential subsurface areas of MEC and/or MD at the Atlas Scrap Yard MRS. The DGM data were collected in all accessible areas within the MRS, and the spatial coverage was calculated to be 6.1 acres, which represents site coverage of 9.2 percent and exceeds the proposed sampling coverage of 5.6 acres presented in the Work Plan (Shaw, 2011). The 6.1 acres equates to a total transect distance of 16.7 miles where each transect width covered was 1 meter wide.

10.1.2 Anomaly Selection

Evaluation of the data collected during the DGM survey identified 3,621 single point anomalies, high density areas within and adjacent to the suspected 40 mm burial area, and 14 additional high density areas within remainder of the MRS. Four contiguous areas of high anomaly density were observed within the suspected 40 mm burial area. Two areas of high anomaly density were identified adjacent to the southeast portion of the suspected 40 mm burial area and are at least partially associated with debris piles observed on the ground surface at the suspected burial area. In the remainder of the MRS, 14 additional regions were characterized by high anomaly densities, defined shapes, and elevated EM61-MK2 signal intensity where trench investigations were considered more appropriate. Distinct subsurface linear features appeared to be related to cultural features such as former utility lines and/or possible burial debris. The corners of the MRS were characterized by significantly lower anomaly densities.

10.1.3 Intrusive Investigations

Following the completion of the DGM survey in July 2011, reacquisition and intrusive investigation was conducted between August and October 2011 for the locations identified as potentially containing subsurface MEC and/or MD based on an analysis of the DGM survey data. A total of 3,185 single point source anomaly locations and the high density regions of the MRS were identified for excavation as part of the intrusive investigation. The high density areas were investigated by 6 trenches within and adjacent to the suspected 40 mm burial area and 27 trenches at the remaining 14 high density anomaly areas. All trenches were mechanically excavated and no MEC or MD was identified in any of the 33 trenches. At total of 12,851 pounds of "Other Debris" items were identified within the 33 trenches.

During the reacquisition process for the single point source anomalies, 60 of the single point source anomalies were determined to have the source item on the ground surface rather than buried below the surface and therefore did not require intrusive investigation to resolve. An additional 34 single point anomalies were not intrusively investigated due to not finding the peak during reacquisition. A total of 3,090 single point anomalies were successfully intrusively investigated by hand following reacquisition. No MEC or MD was identified and a total of 58,008 pounds of "Other Debris" were identified from the 3,090 individual source anomalies.

The "Other Debris" quantities for both the mechanical trench excavation and manually excavated single point source anomalies were determined by the UXO teams in the field. All debris was left in place.

10.1.4 MC Sampling

The DQOs stated that incremental samples and discrete samples (surface and subsurface soil) would be collected in areas with concentrated MEC or MD. Since no MEC or MD was identified at the Atlas Scrap Yard MRS during the RI field activities, sampling for MC was not warranted in accordance with the Work Plan (Shaw, 2011).

10.2 MEC Hazard Assessment

The *Interim Munitions and Explosives of Concern (MEC HA) Methodology* (EPA, 2008) addresses human health and safety concerns associated with potential exposure to MEC at a MRS under a variety of site conditions, including various cleanup scenarios and land use assumptions. If an explosive hazard is identified for this RI, the MEC HA evaluation will include the information available for the MRS up to and including the RI field activities and provide a scoring summary for the current and future land use activities. If no explosive hazard is found at the MRS, then there is no need to calculate a MEC HA score since there are no human health safety concerns. No MEC or MD items were identified at the MRS during either the 2007 SI or 2011 RI field activities, which indicate that no MEC source or explosive safety hazard is present at the MRS. Therefore, calculation of a MEC HA score was not warranted for the Atlas Scrap Yard MRS.

10.3 Conceptual Site Model

A discussion of the preliminary MEC CSM for the Atlas Scrap Yard MRS, based on previous data and historical information identified prior to the RI activities, is presented in Section 2.1, "Preliminary CSM and Project Approach." The information collected during the RI field activities was used to update the MEC CSM and evaluate if the development of an MC CSM was warranted. The purpose of the CSM is to identify all complete, potentially complete, or incomplete source-receptor interactions for reasonably anticipated future land use activities at the MRS. An exposure pathway is the course a MEC item or MC takes from a source to a receptor. Each pathway includes a source, activity, access, and receptor.

10.3.1 MEC Exposure Analysis

Potential users associated with the current land use include facility personnel, contractors, and occasional trespassers. The National Guard Trainee has been identified as the potential user for military training, the future land use at the MRS, and is considered the most likely potential user that may become exposed to any potentially remaining MEC and MC at the MRS.

Sensitive ecological areas at the MRS include several wetlands. Ecological receptors are based on animal and aquatic species that are likely to occur in the terrestrial and aquatic habitats at the MRS. The primary MRS-specific biota identified for the MRS include aquatic biota, terrestrial invertebrates (earthworms), voles, shrews, rabbits, robins, foxes, hawks, muskrats, ducks, minks, and benthic invertebrates (insect larvae, crayfish, snails, clams and bivalves) (USACE, 2003c).

A statistical approach was taken for the investigation at the Atlas Scrap Yard MRS and a portion of the MRS was investigated by visual survey, DGM survey, and intrusive investigation. No MEC or MD was identified on the ground surface or in the subsurface in the 6.1 acres investigated. The UXO Estimator® module (USACE, 2003b) calculated the statistical upper bound density of MEC to be 0.455 MEC per acre based on the percentage of area investigated at the MRS and the actual investigation results. This value was within the DQO target density of 0.5 MEC per acre and means that the investigation was adequate to be 95 percent confident that there is less than 0.455 MEC per acre at the MRS. Although the UXO Estimator® results indicate that a statistical potential for MEC may remain at the MRS, no MEC or MD have been found and it is anticipated that no MEC source or explosive safety hazard is present at the Atlas Scrap Yard MRS.

Given that no MEC source has been identified to date and an explosive safety hazard is not anticipated to exist at the Atlas Scrap Yard MRS, there are no activity/access/receptor interactions ongoing or anticipated under future land use where a receptor may come into contact with MEC. As a result, the revised CSM for MEC identifies incomplete exposure pathways in surface soil, subsurface soil, surface water, and sediment for all receptors having access to the MRS.

10.3.2 MC Exposure Analysis

Since no MEC was identified during the RI investigations at the Atlas Scrap Yard MRS, sampling was not warranted at the MRS in accordance with the Work Plan (Shaw, 2011). Therefore, the CSM for MC identifies incomplete exposure pathways for all receptors at the MRS. Evaluation for COCs identified during previous investigations under the IRP at the Atlas Scrap Yard MRS will continue to be addressed under the IRP.

10.4 Uncertainties

The primary uncertainty related to the evaluation of the RI results at the Atlas Scrap Yard MRS is associated with the incomplete record of the historical operations at the MRS since demolition of the construction camp buildings following World War II and the statistical investigation approach utilized for the RI.

Review of the historical records and previous investigations conducted at the Atlas Scrap Yard MRS indicates any munitions produced or used at the facility may have been stored or disposed at the MRS, including small arms, explosives, pyrotechnics, propellants, mortars, medium and large caliber munitions, landmines, hand grenades, flares, bombs, detonators, or fuzes. Although the disposal of munitions at the MRS has not been confirmed, historical photographic evidence indicates that many of these items were stockpiled by the sides of the roads running through the MRS prior to 2003 (Ohio EPA, 2013). The DGM survey and intrusive investigation covered only approximately 9 percent of the MRS and although no MEC or MD was encountered, there is minimal uncertainty with regards to the nature of the risk posed by any potentially remaining MEC within the remaining areas of the MRS that were not investigated during the RI field activities.

The DGM survey coverage for the RI was designed based on the UXO Estimator® program that at a 95 percent confidence level, a minimum MEC density of 0.5 MEC/acre was expected to be found at the MRS. The UXO Estimator® program calculated the statistical upper bound density of MEC to be 0.445 MEC per acre at a 95 percent confidence level based on actual field results. Therefore it is statistically possible that MEC may be present at the MRS even though confirmed discoveries have not been made to date. However, as the DQOs were met and no MEC/MD was discovered during the RI field activities, the uncertainty that MEC is present at the MRS is greatly reduced. Although the potential for MEC/MD items to be present at the MRS is considered to be low, in the event that MEC/MD is found at the MRS in the future, the U.S. Army will be responsible for subsequent removal and cleanup.

10.5 Conclusions and Recommendations

The RI was prepared in accordance with the project DQOs and included evaluations for explosives hazards and potential sources of MC that may pose threats to likely receptors. The following statements can be made for the Atlas Scrap Yard MRS based on the results of the RI field activities:

- A total of 6.1 acres were investigated at the 66-acre MRS during the RI, which exceeds the proposed spatial coverage of 5.6 acres.
- The nature and extent of MEC and MD has been adequately defined at the MRS.
- No physical evidence of MEC or MD was identified during the RI field activities and an explosive safety hazard is not anticipated to exist at the MRS.
- MC sampling was not warranted since no MEC or MD was found at the MRS during the RI field activities.

After evaluating the RI results, it is determined that the DQOs for the Atlas Scrap Yard MRS have been satisfied and the MRS has been adequately characterized. The next course of action will be to proceed to a No Further Action Record of Decision. The RI was initiated before the finalization of the U.S. Army's *Final Technical Memorandum: Land Uses and Revised Risk Assessment Process for the Ravenna Army Ammunition Plant Installation Restoration Program* (ARNG, 2014).

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Appendix A
Digital Geophysical Mapping Report

Final Digital Geophysical Mapping Report for
RVAAP-050-R-01 Atlas Scrap Yard MRS
Version 1.0

Former Ravenna Army Ammunition Plant
Ravenna, Ohio

Contract No. W912DR-09-D-0005
Delivery Order 0002

Prepared for:

U.S. Army Corps of Engineers
Baltimore District
10 S. Howard Street, Room 7000
Baltimore, Maryland 21201

Prepared by:
CB&I Federal Services LLC
150 Royall Street
Canton, Massachusetts 02021

March 12, 2014

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List of Attachments

Note: The data and information in Attachment 2 are provided in electronic format on compact disc. The data in Attachment 2 require the Oasis Montaj UX Process program in order to open the files. The data in Attachment 2 relate to the digitization of the information shown in Attachment 1 of this DGM Report, and on Figure 4-1, Figure 4-2, and Figure 4-3 in the body of the Remedial Investigation Report for the Atlas Scrap Yard MRS.

Acronyms and Abbreviations

ASCII	American Standard Code for Information Interchange
DGM	digital geophysical mapping
DQO	data quality objective
e^2M	engineering-environmental Management, Inc.
FADL	field activity daily log
GPS	global positioning system
IVS	instrument verification strip
MD	munitions debris
MEC	munitions and explosives of concern
mm	millimeter
MMRP	Military Munitions Response Program
MRS	munitions response site
mV	millivolts
NA	not applicable
Ohio EPA	Ohio Environmental Protection Agency
QA	quality assurance
QC	quality control
RI	remedial investigation
RTK	real-time kinematic
RVAAP	Ravenna Army Ammunition Plant
Shaw	Shaw Environmental & Infrastructure, Inc.
stdev	standard deviation
TDEM	time-domain electromagnetic
USACE	United States Army Corps of Engineers
UTM	Universal Transverse Mercator
UXO	unexploded ordnance
Work Plan	*Final Work Plan for Military Munitions Response Program Remedial Investigation Environmental Services*

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1.0 INTRODUCTION

This Digital Geophysical Mapping (DGM) Report documents the finding and conclusions of the field DGM survey at the Atlas Scrap Yard (RVAAP-050-R-01) Munitions Response Site (MRS) in support of remedial investigation (RI) field activities at the former Ravenna Army Ammunition Plant (RVAAP), Ravenna, Ohio. This DGM Report was prepared by CB&I Federal Services LLC under Delivery Order 0002 for the Military Munitions Response Program (MMRP) Environmental Services at the facility under the *Multiple Award Military Munitions Services Performance-Based Acquisition* Contract No. W912DR-09-D-0005. The Delivery Order was issued by the United States Army Corps of Engineers (USACE), Baltimore District on May 27, 2009.

The results of the DGM survey presented herein include a summary of the field activities, geophysical data processing and interpretation, and results of the quality control (QC) program for the DGM investigation at the Atlas Scrap Yard MRS. The geophysical program at the MRS was performed in accordance with the *Final Work Plan for Military Munitions Response Program Remedial Investigation Environmental Services* (Shaw Environmental & Infrastructure, Inc. [Shaw], 2011), hereafter referred to as the “Work Plan”; Data Item Description MMRP-09-004, *Geophysics* (USACE, 2009); and the *Performance Requirements for Remedial Investigation/Feasibility Studies Using DGM* (United States Army Engineering Support Center, Huntsville, 2008).

1.1 Background and History

The Atlas Scrap Yard MRS encompasses 66 acres of mostly open land that contains a network of former roads. The MRS was originally used as a construction camp beginning in 1940. After the conclusion of World War II, the construction camp facilities were demolished and, in 1969, became a storage area/scrap yard for nonexplosive scrap material; however, the MRS may have also been used to store munitions. Debris piles comprised of construction debris, dunnage, and metal are still apparent at the MRS. Following the 2007 site inspection field activities, information was provided to the contractor, engineering-environmental Management (e^2M), indicating that a 40-millimeter (mm) fragmentation shell burial area was located in the central portion of the Atlas Scrap Yard MRS (e^2M, 2008).

Any munitions made or stored at the facility, including small arms, explosives, pyrotechnics, propellants, mortars, medium and large caliber munitions, landmines, hand grenades, flares, bombs, detonators, and fuzes, may have been disposed at the MRS (e^2M, 2008). Although the munitions disposal activities could not be verified, photographic evidence indicates that many of these items were stockpiled by the sides of the roads running through the MRS

(Ohio Environmental Protection Agency, 2013). These items were reportedly removed in 2003; however, no records documenting the removal action are available (e^2M, 2008).

Munitions-related burial and or disposal activities were considered as the primary source of the potentially-explosive munitions and explosives of concern (MEC) at the Atlas Scrap Yard MRS. Based on review of the archival records and available documentation, the principal sources of MEC at the Atlas Scrap Yard MRS were munitions from disposal activities as well as potential burial of 40 mm fragmentation shells. These activities resulted in the potential for MEC and munitions debris (MD) to be present in the surface and subsurface soil at the Atlas Scrap Yard MRS.

1.2 Data Quality Objectives

The data quality objectives (DQOs) for the DGM survey were to identify if MEC and/or MD were present at the Atlas Scrap Yard MRS. The DGM information obtained during the RI was used to evaluate whether there are unacceptable risks with MEC and/or material potentially presenting an explosive hazard to likely human and environmental receptors and to make a determination if further investigation is required at the MRS in accordance with the Comprehensive Environmental Responsibility, Compensation, and Liability Act of 1980.

2.0 GEOPHYSICAL SURVEY EQUIPMENT

This section presents a discussion of the geophysical sensor and the positioning systems and methods used to perform the DGM investigation at the Atlas Scrap Yard MRS.

2.1 Geonics EM61-MK2 Geophysical Sensor

The Geonics EM61-MK2 is a four-channel, high-sensitivity time-domain electromagnetic (TDEM) instrument sensor designed to detect ferrous and nonferrous metallic objects with good spatial resolution and minimal interference from adjacent metallic features. The TDEM sensors work by utilizing a transmitter that generates a pulsed primary electromagnetic field in the earth, which induces currents in nearby metallic objects. The current decay produces a secondary magnetic field measured by the receiver coils of the EM61-MK2. Measurements are acquired over a relatively long time after the primary pulse at specified time gates, which allows the current induced in the ground to dissipate, leaving only the current in the metal to still produce a significant secondary field.

The EM61-MK2 system used at the Atlas Scrap Yard MRS consisted of two 1-meter by 0.5-meter rectangular coils arranged in a coaxial geometry and separated by 40 centimeters. The coils were mounted on a wheeled platform 16 inches (42 centimeters) above the ground surface. Secondary voltages induced in the bottom and top coils were measured in millivolts (mV) by the instrument electronics and recorded to a Juniper Allegro data logger.

The EM61-MK2 measures four time gates from the lower coil (216, 366, 660, and 1,266 microseconds – "4" mode) or the first three time gates from the lower coil and the 1,266 time gate from both the lower and upper coil, also known as "D" mode. For this project, the "4" mode of acquisition was used. The "4" mode provides a later time gate than the "D" mode which can help determine if there are larger pieces of metal in the ground as well as provide an additional reading to calculate decay rates between each time gate.

The EM61-MK2 is designed to detect individual, small items at shallow depths and relatively larger items (e.g., 155 mm projectile) at depths approaching 5 to 7 feet. The resulting data can be used to differentiate, in simplistic fashion, the relative size and distance (or depth) of metal items when the anomaly density is relatively low. In cluttered areas where the anomaly density is relatively high and the anomaly signatures overlap, the determination of size and depth is much more difficult.

2.2 Positioning Systems/Methods

The positioning systems used for the project provided coordinates for the geophysical measurements and were also utilized to identify natural and man-made features at the MRS so that these features can be accounted for during data analysis and interpretation. Position data for the project are presented in Universal Transverse Mercator (UTM) coordinates, Zone 17 North American Datum, in meters.

The Atlas Scrap Yard MRS is characterized by a combination of relatively open areas void of thick vegetation and canopy (tree cover) as well as some areas of dense canopy. Due to the variability in vegetation density and canopy at the MRS, two positioning methods were used for the DGM survey. A real-time kinematic (RTK) global positioning system (GPS) was used in relatively larger, contiguous areas where open sky was visible to provide positions for the EM61-MK2 sensor measurements. A RTK-GPS was also used in conjunction with the fiducial positioning method to provide known positions at regular intervals along each transect in areas of dense vegetation and thick canopy.

2.2.1 Real-Time Kinematic Global Positioning System

This section discusses the RTK-GPS system that was used in the more open, larger contiguous areas accessible for the EM61-MK2 sensor measurements. The RTK-GPS was equipped with a base station that was set up on a known position that was certified by a Registered Land Surveyor in the state of Ohio. Once the base station was set up, it determined its location using satellites and applied a correction based on the offset from the known coordinates at the location. This correction information was transmitted via radio link to the rover GPS system transported by the DGM field crew and was used to determine the position of the antenna mounted directly above the EM61-MK2 coils. A National Marine Electronics Association data string was connected via serial link directly into the Juniper Allegro data logger and the coordinate positions were integrated into the EM61-MK2 data file. The accuracies of the positions for the RTK-GPS system were within 5 centimeters when signal lock was maintained.

2.2.2 Fiducial Positioning

In areas of very dense vegetation and thick canopy, where obtaining accurate and precise positions with the RTK-GPS was difficult, the fiducial method of positioning was used. The fiducial method involves placing electronic marks in the digital data at regular intervals along each acquisition line that coincide with known coordinate locations. For this project, nonmetallic pin flags were spaced at 5-meter (16.5-foot) intervals along each transect, and during processing, the sensor measurements were interpolated between the flagged locations. To facilitate the transformation of these relative coordinates into the UTM Zone 17 North American Datum coordinate system during data processing, the coordinates of each transect endpoint were located with the RTK-GPS to an accuracy of approximately 1 meter.

3.0 DATA ACQUISITION

This section provides a summary of the field activities performed and DGM data generated for the RI activities at the Atlas Scrap Yard MRS.

3.1 Summary of DGM Field Activities

The geophysical field crew performed the EM61-MK2 DGM survey at the Atlas Scrap Yard MRS in June and July of 2011. The DGM survey was completed on July 24, 2011. For unexploded ordnance (UXO) avoidance purposes, UXO technicians performed initial ground surface clearance with a Schonstedt Model GA-52Cx magnetometer prior to the DGM survey being performed.

The team that performed the DGM survey consisted of two geophysicists. Equipment used for the DGM survey is described in Section 2.0, "Geophysical Survey Equipment." Portions of some transects were acquired with the fiducial position method due to the extremely dense vegetation that exists at the MRS. The DGM platform consisted of a modified standard wheeled configuration with the lower coil 16 inches above the ground surface. To accommodate the rough and uneven terrain at the Atlas Scrap Yard, the standard metal handle was replaced by a polyvinyl chloride pipe cradle that allowed two people to maneuver the instrument to ensure a steady and even pace for data acquisition.

An Ohio Registered Land Surveyor established two survey monuments at the Atlas Scrap Yard MRS. Each monument was established with third-order horizontal accuracy (residual error less than or equal to 1 part in 10,000). In areas where data could be acquired using the RTK-GPS, the survey monuments were used to provide positional data streamed directly to the EM61-MK2. In areas where the tree cover prohibited the use of RTK-GPS, the control monuments were used as a source to generate additional control points for the fiducial mode surveys. Additionally, all of the survey data documenting MRS features and obstructions is referenced to the two established survey monuments.

For QC purposes, the RTK-GPS positioning system was used to reacquire a known, fixed location each time the system was set up on one of the two survey monuments. Per the project metrics defined in the Work Plan (Shaw, 2011), static measurements for the positioning system were required not to exceed 0.5 feet. The RTK-GPS system provides centimeter-level accuracy, and 100 percent of location checks satisfied the metric. The DGM data were collected along 49 east-west oriented transects spaced at 13-meter (40-foot) intervals, which resulted in 6.1 acres of data being collected over the 66-acre MRS. This equates to approximately 9 percent DGM coverage over the entire MRS. Within the suspected 40 mm burial area, the transect spacing was reduced to 6 meters in order to more accurately delineate the burial area.

The wetland at the northwest corner of the MRS is an environmentally sensitive area and vegetation removal at this portion of the MRS was not permitted per direction from the Ohio Environmental Protection Agency (Ohio EPA). The dense vegetation limited the ability of the DGM equipment to access the area and no DGM data were acquired at this portion of the MRS in order to avoid impacting the sensitive areas. In the southeast section of the MRS, no DGM data were acquired due to the presence of a debris pile and associated wetlands area that obstructed data collection. In the north-central section of the MRS, a debris pile consisting primarily of stacked railroad ties prevented DGM data collection at this location.

The *DGM Survey Results and Proposed Intrusive Investigation Locations for the Atlas Scrap Yard MRS (RVAAP-050-R-01)* technical memorandum is presented in **Attachment 1** and **Figure 1** and **Figure 2** in the technical memorandum present the areas where no DGM data were collected due to the presence of environmentally sensitive wetlands and debris piles. These figures also illustrate transects where the DGM surveys were performed. Correspondence with the Ohio EPA regarding the protection of the environmentally sensitive area at the MRS is provided in Appendix B of the RI Report.

Navigation was performed using a system of nonmetallic measuring tapes and traffic cones (or vinyl stem pin flags) spaced at regular intervals that were utilized as “waypoints” during data acquisition activities to ensure appropriate coverage of the MRS. Along each transect, positioning system data were recorded at a minimum rate of 1 hertz, and the EM61-MK2 measurements were recorded at a rate of 12 to 15 hertz, which translated into a measurement sample density along the ground surface of approximately 4 to 6 inches. The EM61-MK2 and position data were digitally recorded using Geonics software on a Juniper Allegro CX data logger.

The Leica 1200 RTK-GPS was used to augment geophysical data and improve geophysical mapping through capture of visual observations made during the MRS walk-over. During this process, the positioning systems were used to record the positions of cultural features (e.g., sign posts, monitor wells, culverts, debris, saturated areas, etc.) so that these features could be accounted for during the interpretation of the geophysical data.

3.2 DGM System Instrument Functional Tests

At the beginning and end of each day, instrument functional checks were performed to ensure the performance metrics designated in the Work Plan (Shaw, 2011) were achieved. The DGM data were uploaded to a field computer at the end of each day and transferred to the Shaw corporate server. Quality control procedures, including additional details regarding instrument functional tests performed for the DGM activities, are discussed further in Section 5.0, "Quality Control."

Field Documentation

The geophysical data files generated during the DGM activities include raw DGM field data and instrument functional check data. A field activity daily log (FADL) and "readme.txt" file were completed by the DGM field crew each day to document MRS field activities related to the DGM investigation. Digital photographs documenting the DGM activities at the Atlas Scrap Yard MRS are included in Appendix C of the RI Report.

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4.0 GEOPHYSICAL DATA PROCESSING AND ANALYSIS

This section presents a review of the data processing and analysis activities performed during the geophysical investigation. Geosoft's Oasis Montaj was the primary software used to complete data processing tasks. All DGM data were transferred to the client and Shaw's Geographic Information System Department for inclusion into the project geographic information system. Processing and analysis of the DGM data were conducted in accordance with the specifications and requirements presented in Sections 3.3.7 through 3.3.9 of the Work Plan (Shaw, 2011).

At the end of each field day, the field geophysicist uploaded the DGM data to a dedicated computer, where the data was archived, backed-up, and initially processed and analyzed. Data were also transferred to the Shaw Processing Center in Concord, California on a daily basis for review by the project geophysicist. The geophysical data files generated during the DGM activities include DGM field data and QC test data files that are included in **Attachment 2** to this report, and are discussed in subsequent sections.

The data processing sequence included verifying the validity of the data using the performance metrics, assessment of the track path and spatial sample density, latency correction, data leveling, and color-coded image generation utilizing software from the equipment manufacturers and Geosoft Oasis Montaj. Subsequent to the processing and review of the data, color-coded images of the geophysical sensor data were created for review and planning of the next day's field activities.

Shaw utilized the following software to process the data:

- Geonics DAT61MK2 (or Trackmaker 61) for initial review of the EM61-MK2 data and output of the data in American Standard Code for Information Interchange (ASCII) format
- Shaw routine for converting data processed with Trackmaker 61 to an ASCII file with x-y coordinates
- Geosoft Oasis Montaj for latency correction; data leveling; interpolation and generation of color-coded images; interpolation of fiducial data; and statistical analysis of the data in terms of the performance metrics such as along-track sample density, speed, and static and dynamic noise

The Oasis processing log file (process.log) was recorded by the software and serves as the digital documentation of the processing sequence and parameters for each data acquisition session.

During the analysis of the data, the track path and responses from cultural features, such as signs, construction debris, monitoring wells, etc., were superimposed on the color-coded images in order to permit a more comprehensive evaluation of the geophysical data.

The data collected with the fiducial positioning method was processed using two approaches. The first approach interpolated the EM61-MK2 sensor measurements between the start and end points of each transect segment. The start and end points of each transect segment were defined and located using static RTK-GPS measurements during the vegetation clearance and location surveying activities for each transect. The average RTK-GPS position accuracy for each transects endpoint was 0.38 meters (1.2 feet). For the second approach, the EM61-MK2 measurements were interpolated using the intermediate waypoints (nonmetallic pin flags) spaced at 5-meter intervals along each transect segment. The UTM coordinates for each approach were available for analysis by the data processor and were subsequently used by the field geophysicist during anomaly reacquire.

5.0 QUALITY CONTROL

This section presents a summary of the QC testing and procedures performed throughout the duration of DGM activities. The performance metrics for the twice-daily QC tests and geophysical DQOs for position accuracy and spatial sampling were also evaluated as part of the data processing procedures and are presented in this section. A Microsoft Excel© spreadsheet that summarized the DGM quality control program results was provided to the USACE, Baltimore District on a consistent basis throughout the project for review and concurrence. The geophysical data files generated during the DGM activities include DGM field data and QC test data files that are included in **Attachment 2** to this report, and are discussed in subsequent sections.

5.1 Daily Instrument Functional Tests

Quality control procedures during the field survey were performed in accordance with the Work Plan (Shaw, 2011). Each day, the following required QC tests were performed in the field, documented, and evaluated during processing to ensure the data collected were of sufficient quantity and quality to meet the project objectives:

- Instrument warm-up
- Personnel metal check and test
- Cable shake test
- Static noise test
- Static spike test
- Instrument verification strip (IVS) repeat data
- Known position check (RTK-GPS)
- Dynamic noise evaluation

The results of the instrument warm-up and personnel metal check are documented in the FADL and/or field logbook by the DGM field crew. A summary of the results of the other daily tests listed above are presented in **Table 5-1**. The dynamic noise primarily summarizes the noise characteristics of the DGM instrumentation and is therefore provided in the same table with other daily instrument tests that characterize instrument functionality and sensitivity. Dynamic noise is evaluated by the data processor on a daily basis for each acquisition session by reviewing the instrument noise in background areas of the MRS (i.e., areas where no metal exists). Metrics for the daily instrument tests are described in Section

3.3.13 of the Work Plan (Shaw, 2011). **Table 5-1** presents a summary of the DGM performance metrics for the Atlas Scrap Yard MRS.

In summary, the instrument functional checks were performed during the RI field investigation activities and the dynamic noise achieved the performance metrics throughout the duration of the project. The dynamic noise at the IVS for all channels of the EM61-MK2 achieved the metric of +- 2mV at the IVS. During actual data collection activities, the standard deviation of Channel 2 varied between 1 to 1.7 mV in background areas of the MRS, which is higher than some of the other MRS's investigated for this project due to the rugged terrain at some parts of the Atlas Scrap Yard. Slight deviations from the metrics that were identified and resolved at the Atlas Scrap Yard MRS are mentioned below.

Portions of Transects 32 and 33 east of the access road collected on June 28, 2011, exhibited elevated levels of noise slightly larger than 2.0 mV for Channel 2. As a QC measure, the eastern portions of Transects 32 and 33 were recollected on August 8, 2011 and compared with the original data. No additional target selections were evident from the recollected data, and the original data is considered valid. The elevated noise is likely due to the rugged topography and vegetation in this area of the MRS.

On July 11, 2011, during the morning instrument functional checks at the IVS, the position of the vertically oriented industry standard object calculated with RTK-GPS exceeded the metric of +- 2.0 feet by 0.1 feet. The position calculated using the fiducial method was 0.014 feet and achieved the metric. The RTK-GPS position calculation was not considered valid due to the canopy at the MRS, and RTK-GPS was not used to reacquire anomaly locations on transects where fiducial positioning was used. The target locations on the dig sheet calculated from the fiducial position method were reacquired using a measuring tape and relative coordinates, and all targets were successfully reacquired by the field geophysicist.

The results of the initial IVS effort are documented in the *Instrument Verification Strip Technical Memorandum in support of Digital Geophysical Mapping Activities for Military Munitions Response Program Remedial Investigation Environmental Services*, which is included in **Attachment 3** of this report.

Table 5-1
Summary of DGM Performance Metrics at Atlas Scrap Yard MRS

EM61-MK2 Channel	Personnel Test	Cable Shake Test	Static Noise Test	Static Spike Test	IVS Repeatability	Known Position Check (RTK-GPS)	Dynamic Noise (IVS)
Channel 1	100% within +-2.5mV	100% within +-3mV	100% within +-2mV	100% within 10% of reference value			100% within +-2mV (stdev)
Channel 2	100% within +-2.5mV	100% within +-3mV	100% within +-2mV	100% within 10% of reference value	100% greater than 75% of reference value and 100% less than or equal to 2.0-foot position accuracy		100% within +-2mV (stdev)
Channel 3	100% within +-2.5mV	100% within +-3mV	100% within +-2mV	100% within 10% of reference value			100% within +-2mV (stdev)
Channel 4	100% within +-2.5mV	100% within +-3mV	100% within +-2mV	100% within 10% of reference value			100% within +-2mV (stdev)
NA						100% less than or equal to 0.5 feet	

GPS denotes global positioning system.
IVS denotes instrument verification strip.
mV denotes millivolts.
NA denotes not applicable.
RTK denotes real-time kinematic.
stdev denotes standard deviation.

5.2 Geophysical Quality Objectives and Metrics

The Microsoft Excel© spreadsheet that summarized the DGM QC program results was provided to the USACE at regular intervals throughout the project. The spreadsheet documented the results for the spatial sampling statistics for the project (speed and along track coverage). Performance metrics for reacquire accuracy and the feedback process are documented in the ShawMEC database for the project.

The metrics for mean speed and along track spacing were consistently achieved during project execution, as were the objectives for latency correction, data consistency, anomaly selection and reacquire, and the feedback process. Metrics for these elements are described in Section 3.3.13 of the Work Plan (Shaw, 2011) and are as follows:

- **Mean speed—**95 percent less than 3.4 miles per hour.
- **Along track sampling—**98 percent less than 0.8 feet.
- **Latency correction—**Data aligned to one sample interval (approximately 0.5 feet). No significant residual scalloping in the color-coded images. Scalloping is similar to a chevron or a latency that occurs between the GPS reading and EM61-MK2 reading. If there is any significant latency, it can be depicted as offsets on linear features in the data as the DGM paths are typically collected in opposite directions on each pair of lines. As latency was not an issue, this data does not show any sign of this effect.
- **Data consistency—**Consistent channel naming conventions, processing parameters, and methods used for all datasets and channels within each dataset.
- **Anomaly selection—**All anomalies included on the dig sheet will meet the anomaly selection criteria as established at the beginning of the project. If the anomaly selection criteria are modified during project execution based on the intrusive findings then the USACE and the Ohio EPA will be notified in advance via a field change order.
- **Feedback process—**For anomalies that are intrusively investigated during the project, the field geophysicist or designee will review the intrusive investigation results with respect to the geophysical anomaly characteristics and selection criteria. Any potential discrepancies will be documented in the project database.

Table 5-2 summarizes the results of the DGM quality objectives for the Atlas Scrap Yard MRS DGM investigation.

Table 5-2
Summary of DGM Quality Objectives at Atlas Scrap Yard MRS

Mean Speed	Along Track Sampling	Latency Correction	Data Consistency	Anomaly Selection	Anomaly Reacquire*	Feedback Process
99.4% less than 3.4 miles per hour	99.65% less than 0.8 feet	Color-coded images passed QC and QA review	Oasis Geophysics Databases passed QC and QA review	Anomaly selection passed QC and QA review	Root mean square average x-y offset equal to 1.4 feet	Applied and documented in project database

** No metric was specified in the Work Plan for the EM61-MK2 for reacquire along transects.*

QA denotes quality assurance.

QC denotes quality control.

Latency corrections employed during processing resulted in data without “scalloping.” Consistent data processing routines were used by the data processor, and the anomaly selection criteria were deemed representative based on the subsequent results of the intrusive phase of the project. Although no anomaly reacquire metric was specified in the Work Plan (Shaw, 2011) for the EM61-MK2 transect investigation, the root mean square x-y reacquire offset of 1.4 feet from the interpreted location for the anomalies is consistent with the lateral detection capabilities for the EM61-MK2 instrument. The results of the exploratory trenching and individual anomalies were reviewed by Shaw and USACE geophysicists to ensure representativeness. The results of the review process are documented in the project database.

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6.0 DATA INTERPRETATION AND RESULTS

This section discusses the interpretation of data collected for the DGM investigations at the Atlas Scrap Yard MRS. Performance metrics discussed in Section 5.0, “Quality Control”; demonstrate that the data collected meets the intent of the data quality objectives specified in the Work Plan (Shaw, 2011).

6.1 Data Interpretation of DGM Results

As part of the data analysis and interpretation sequence, the data interpreter reviewed the following data characteristics: (1) static and dynamic measurements in background areas of the MRS, (2) mean speed, (3) along-track spacing, (4) latency correction, and (5) position checks. The data collected were processed and interpreted in accordance with Sections 3.3.7 through 3.3.9 of the Work Plan, and the DGM quality metrics specified in Section 3.3.13 of the Work Plan were achieved for all of the data collected at the MRS (Shaw, 2011). The data interpretation for the MRS was performed with regard to the EM61-MK2 signal intensities of Channels 1 through 4, anomaly shape, spatial distribution of anomalies, surface clearance findings, MRS features mapping, field crew notes, vegetation and terrain, presence of wetlands, and historical information from aerial photos.

An area of very high anomaly density is present near the center of MRS in an area referred to as the suspected 40 mm fragmentation shell burial area. Outside of the suspected 40 mm burial area, there are several broad regions with anomaly densities that range from 800 to 1,500 anomalies per acre. The four corners of the MRS are characterized by relatively lower anomaly densities of approximately 100 to 300 per acre. Within the higher anomaly density areas regions, there are 14 distinct areas where definitive anomaly patterns are present. There are several distinct linear features at the MRS that are buried and thought to be related to cultural feature(s) and/or possible burial of debris.

In general, the “background” response at the Atlas Scrap Yard MRS has more variability compared to the DGM data acquired with the EM61-MK2 at most of the other MRS locations at the facility under the MMRP. The amplified variability in the background response is likely due to the increased presence of irregular terrain and small, near-surface metal or slag, both of which have been identified at the Atlas Scrap Yard MRS during the RI field investigation.

Concurrence of the data quality, interpretation, and intrusive results by the USACE was received following the completion of DGM activities and prior to the intrusive investigation of target anomalies for reacquisition. Shaw presented the results of the DGM survey and proposed intrusive investigation locations to the USACE and the Ohio EPA for review and approval in the *DGM Survey Results and Proposed Intrusive Investigation Locations for the Atlas Scrap Yard MRS (RVAAP-050-R-01)* technical memorandum (**Attachment 1**). Ohio EPA approval of the technical memorandum is presented in Appendix B of the RI Report.

Figures 1 and **2** in the technical memorandum present the DGM data collected at the Atlas Scrap Yard MRS. **Figure 1** provides a sensitive color scale that highlights all anomalies above a signal threshold of approximately 5 mV for Channel 2. **Figure 2** uses a lower sensitivity color scale to delineate the major aggregates of buried metal at the MRS with increased definition.

6.2 Anomaly Selection

This section presents a discussion of the target dig list development and the intrusive investigation procedures performed for the evaluation of MEC and MD at the MRS. The proposed intrusive investigation locations were submitted to the USACE and Ohio EPA for review and approval in the technical memorandum included in **Attachment 3**.

6.3 Anomaly Selection for Individual Anomalies

Evaluation of the data collected during the DGM survey identified 3,621 individual anomalies. The Work Plan (Shaw, 2011) originally called for a 100 percent investigation of all individual anomalies identified during the DGM investigation. However, Shaw recommended a field change to the approved intrusive investigation process in the technical memorandum to the Ohio EPA (**Attachment 1**). That technical memorandum provided a summary of the DGM results and suggested that 100 percent of individual anomalies found to be greater than or equal to 8 mV be investigated along with a random selection of 50 percent of the individual anomalies less than 8 mV. This recommendation was based on the results of IVS where smaller MEC items in the near surface produced a response that exceeded 8 mV, as well as the DGM results performed by Shaw at other MRSs at the facility where intrusive activities indicated that no items identified below 8 mV were MEC or MD. The technical memorandum suggested that a total of 3,023 anomalies greater than or equal to 8 mV and 174 anomalies less than 8 mV be investigated (total of 3,197). After the submittal of the memorandum, ongoing review of the DGM data resulted in the identification of anomaly locations which had multiple targets that were subsequently removed and replaced with a single target location. It was also determined that all anomalies less than 8 mV would be intrusively investigated. Therefore, a total of 3,185 individual anomalies were identified and subsequently investigated. The individual anomalies selected for intrusive investigation are presented in the technical memorandum in **Attachment 1**.

6.4 Exploratory Trenches

The data interpreter digitized 33 exploratory trench locations within 14 high anomaly density areas outside of the suspected 40 mm burial area at the Atlas Scrap Yard MRS. Four exploratory trenches were placed in the suspected 40 mm burial area and two trenches were placed just outside the southeast boundary of the suspected burial area. Each exploratory trench was approximately 20 to 25 feet in length and 3 feet in width. The exploratory trench locations selected for intrusive investigation are presented in the technical memorandum in **Attachment 1**.

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7.0 ANOMALY REACQUIRE AND INTRUSIVE INVESTIGATION ACTIVITIES

This section presents a discussion of the anomaly reacquire and the intrusive investigation activities that were performed at the Atlas Scrap Yard MRS based on the DGM results and investigation rationale discussed in Section 6.0. A combination of individual target anomalies and trenches were intrusively investigated at the MRS in order to evaluate for potential subsurface MEC conditions.

7.1 Anomaly Reacquire and Intrusive Investigation Procedures

Based on the significant anomaly density variations over the MRS and the presence of definitive, larger-scale anomalies, Shaw proposed the use of exploratory trenching in combination with the investigation of individual anomalies to assess the presence of MEC at the Atlas Scrap Yard MRS. Prior to generation of the exploratory trench locations and dig list for the individual anomalies, the interpreter removed responses from cultural features, such as signs, construction debris, monitoring wells, etc., based on the digital field notes from the DGM team.

7.1.1 Individual Anomaly Locations

For the individual anomaly locations, the field geophysicist used the dig sheet coordinates and also referred to the interpolated data from both approaches, as specified in Section 4.0, "Geophysical Data Processing and Analysis," to guide the relocation of anomalies. The x-y coordinate offset for each individual anomaly was digitally recorded by the anomaly reacquire crew and uploaded to the project database. The individual anomalies were hand-dug to depth by the UXO field crew in accordance with Section 3.5.2 of the Work Plan (Shaw, 2011) and as described in the following paragraphs.

The UXO-qualified personnel used a Schonstedt magnetometer to first reacquire and then investigate ferrous anomalies identified during the DGM survey as single point anomalies. These personnel used hand tools to unearth an item and as the excavation progressed toward the anomaly source, the UXO technician continued to use the Schonstedt magnetometer to determine the item location both horizontally and vertically. To locate the ground position of the interpreted anomaly coordinates, the navigational system "Waypoint Location" mode was used for the RTK-GPS positioning system. A nonmetallic pin flag, labeled with the unique anomaly identification, was placed in the ground at the interpreted location. Reacquisition of any sampling or dig sheet locations (i.e., interpreted location) was performed to ± 0.5 feet of the coordinates specified on the dig sheet.

Once found, the item was assessed to determine if it was MEC, MD, or other metallic material. Once the item was determined not to be MEC, it was temporarily removed from the excavation hole and a Schonstedt magnetometer was used to confirm no additional ferrous items were located beneath the first item. Once confirmed that the source had been identified and no MEC or MD was present, the item was replaced and the soil was returned back into the investigation hole in reverse order from which it was excavated. The UXO-qualified personnel were also conscious of encountering any cultural artifacts associated with historical cultural or archeological resources.

7.1.2 High Density Anomaly Areas

Trenching was performed at locations identified as having high-density areas of buried anomalies as specified in Section 3.5.3 of the Work Plan (Shaw, 2011). Locating the ground position for these areas was similar to the single point anomalies except on a larger scale. The navigational system "Waypoint Location" mode was used for the RTK-GPS positioning system to locate the coordinates of the center and end points of each trench boundary. Nonmetallic pin flags, labeled with the unique anomaly identification, were placed in the ground at the interpreted location of the trench. As for the single-point anomaly locations, reacquisition of any sampling or dig sheet locations (i.e., interpreted location) was performed to ± 0.5 feet of the coordinates specified on the dig sheet. Each end point was approximately 10 feet from the center of the trench, providing a trench that was approximately 20 to 25 feet in length and 3 feet in width. Exploratory trenching operations were performed within the flagged region of each exploratory trench marked in the field until one of the following conditions was met:

- The target anomalies were identified;
- Native material was identified and a clear, distinct boundary between the native and fill material was evident;
- A maximum depth of 10 feet was attained; or
- The water table was reached.

The maximum depth of excavation at any of the trench locations was 4.5 feet. Soil material in each trench was removed in layers at approximately 1-foot intervals. At the areas identified as having subsurface anomalies, the UXO team worked directly with the excavation crew to identify the anomaly. One UXO technician stood in a safe area at the front of the operation and was responsible for examining the area to be advanced into and to visually observe for the presence of MEC or MD before the MRS was disturbed. Once the soils were excavated, they were spread on 6-mil polyethylene sheeting in an adjacent area where the UXO team member visually examined it for MEC and/or MD materials. Once the item was determined not to be MEC, it was temporarily removed from the excavation hole and a Schonstedt magnetometer was used to confirm no additional ferrous items were located beneath the first item. Once confirmed that the source had been identified and no MEC or MD was present, the item was replaced and the soil was returned back into the investigation trench in reverse order from which it was excavated. No soil was segregated for off-site disposal.

7.1.3 Anomaly Investigation Documentation

All anomalies identified during the reacquisition and intrusive investigation activities were logged and recorded in accordance with Data Item Description MMRP-09-004, *Geophysics* (USACE, 2009). The ShawGeo and/or ShawMEC software was used to record any discrepancies between the dig sheet location and the actual required location and to note any anomalies that could not be investigated.

7.2 Intrusive Investigation Results

No MEC or MD was identified at the 3,197 point source anomaly locations selected for investigation. A high percentage of the items found consisted of scrap metal and slag. Many of the metal items identified in excess of approximately 3 feet deep were related to utilities. Several “trash pits” were identified. In all, approximately 58,000 pounds of “Other Debris,” which included more than 650 pounds of metal as determined by the UXO team in the field, was unearthed at depths up to 2.5 feet. “Other Debris” can represent any form of debris determined not to be munitions related, including scrap metal, hot rocks (i.e., slag), nails, pipe, and construction debris. The results of the intrusive investigation at the point source anomaly locations are discussed in detail in Section 4.1.3.2 of the RI Report.

No MEC or MC was identified during the excavation activities of the exploratory trenches. Trenches were excavated until the target anomalies were identified, native material was identified and a clear, distinct boundary between the native and fill material was evident, a maximum depth of 10 feet was attained, or the water table was reached. For the majority of trenches, native soil was encountered between 36 and 56 inches below ground surface. A total of 12,851 pounds of “Other Debris” items were identified within the 33 trenches as determined by the UXO teams in the field. The results of the intrusive investigation at the high density anomaly areas are discussed in detail in Section 4.1.3.1 of the RI Report.

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8.0 REFERENCES

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Ohio Environmental Protection Agency, 2013. Photographs at the Atlas Scrap Yard provided to the Base Realignment and Closure Division (Mark Patterson), Army National Guard (Ann Wood), and the Ohio Army National Guard (Kathryn Tait) via email from Eileen Mohr, Ohio Environmental Protection Agency, March 15.

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United States Army Corps of Engineers, 2009. Data Item Description MMRP-09-004, *Geophysics*, August.

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Attachment 1
DGM Survey Results and Proposed Intrusive Investigation Locations for the Atlas Scrap Yard MRS (RVAAP-050-R-01)

Shaw Environmental & Infrastructure, Inc.

Memorandum

100 TECHNOLOGY CENTER DRIVE, STOUGHTON, MA 02072 • 617.589.5111 • FAX 617.589.2992 • THE SHAW GROUP INC®

From: Dave Cobb, Shaw Project Manager

To: Ms. Eileen Mohr, Ohio EPA Project Manager

cc: Todd Fisher, Ohio EPA
Travis McCoun, USACE Baltimore
Greg Moore, USACE Louisville
Mark Patterson, BRACD
Kim Harriz, NGB
Katie Tait, OHARNG/Camp Ravenna

Date: September 12, 2011

Re: **DGM Survey Results and Proposed Intrusive Investigation Locations for the Atlas Scrap Yard MRS (RVAAP-050-R-01)**

Introduction

The purpose of this memorandum is to present the results of the digital geophysical mapping (DGM) survey performed at Atlas Scrap Yard (ASY) Munitions Response Site (MRS), RVAAP-050-R-01, at the Ravenna Army Ammunition Plant (RVAAP), Ravenna, Ohio and present proposed intrusive investigation locations for potential munitions and explosives of concern (MEC) and/or materiel presenting a potential explosive hazards (MPPEH). The survey activities were conducted by Shaw Environmental & Infrastructure (Shaw) in accordance with the *Final Work Plan for Military Munitions Response Program Remedial Investigation Environmental Services* (Shaw, 2011); hereafter referred to as the "work plan".

Site History

The ASY MRS encompasses 66 acres of mostly open land that contains a network of former roads. The MRS was originally used as a construction camp and, in 1969, became a storage area/scrap yard for non-explosive scrap materiel. In addition, debris piles comprised of construction debris, dunnage, and metals scraps appear throughout the MRS. Unexploded ordnance (UXO) was reportedly uncovered in the southwestern portion of the MRS, although the source of information is uncertain. In addition, a 40mm fragmentation shell burial area is reportedly located in the central portion of the ASY. RVAAP personnel stated that any of the munitions present on-site may have been disposed in this area including: small arms, explosives, pyrotechnics, propellants, mortars, medium and large caliber munitions, landmines, hand grenades, flares, bombs, detonators, or fuzes.

Summary of Work

In June and July of 2011 Shaw collected DGM data at ASY to identify potential areas of MEC and/or MPPEH. The DGM survey was completed on July 24, 2011. **Figures 1 and 2** present the DGM data collected at the ASY MRS. **Figure 1** provides a sensitive color scale that highlights all anomalies above a signal threshold of 5 millivolts (mV). **Figure 2** uses a lower sensitivity color scale to delineate the major aggregates of buried metal at the site with increased definition. In general, the "background" response at ASY has more variability compared to the DGM data acquired with the EM61-MK2 at the Ramsdell Quarry and the Firestone Test Facility MRSs. The amplified variability in the background response is likely due to the increased presence of irregular terrain and small, near surface metal or slag, both of which have been identified at ASY in the current and previous investigations.

The approved sampling coverage presented in the work plan for ASY required 5.6 acres of DGM data to be collected. In order to meet the coverage requirement, DGM data were acquired within the MRS boundaries on ~ 49 transects spaced 13 meters (m) apart. Within the suspected 40mm burial area, the transect spacing was reduced to 6 m in order to more accurately delineate the burial area. DGM data were collected in all accessible areas within the MRS and the spatial coverage was calculated to be 6.1 acres, which represents site coverage of 9.2 % and exceeds the sampling coverage of 5.6 acres presented in the work plan. Vegetation removal in the wetland at the northwest corner of the MRS was not permitted per direction from the Ohio EPA and no DGM data were acquired at this portion of the site in order to avoid impacting the identified environmentally sensitive area. In the south east section of the site, no DGM data were acquired due to the presence of a debris pile and associated wetlands area that obstructed data collection. In the north-central section of the MRS, a debris pile consisting of primarily stacked rail road ties, prevented DGM data collection at this location.

The Team that performed the DGM survey consisted of two geophysicists. Equipment used for the DGM survey consisted of an EM61 MK2 time domain electromagnetic instrument (TDEM) and a Leica 1200 RTK Global Positioning System (GPS) or Leica TPS1200 robotic total station (RTS) for positioning. The RTK GPS was used in "open" areas void of canopy (tree cover) and the RTS was used in areas where trees were present. Some transects were acquired with the fiducial position method due to the extremely dense vegetation that exists at the ASY MRS. The DGM platform consisted of a standard wheeled configuration with the lower coil 16 inches above the ground surface.

Summary of DGM Results

The data were processed and interpreted consistent with the work plan, and the DGM quality metrics specified in Section 3.3.13 of the work plan were achieved for all of the data collected at ASY. The field crew documented cultural features and metallic and non-metallic debris on the ground surface in addition to other obstructions along each transect. The DGM data exhibit several contiguous areas of high anomaly density within the 40mm burial area. Areas of high anomaly density were identified at the southeast portion of the 40mm burial area and are at least partially associated with debris piles observed on the ground surface at these locations.

Outside of the 40mm burial area there are 14 regions characterized by high anomaly densities, defined shapes, and elevated EM61-MK2 signal intensity. The four corners of the MRS are characterized by significantly lower anomaly densities. There are several distinct linear features at the site that are buried and may be related to cultural feature(s) such as former utility lines and/or possible buried debris. Shaw is currently evaluating historical utility maps for the site to determine if any of the anomaly locations are in areas identified as having buried former utilities.

Outside of the 40mm burial area and the 14 high anomaly density regions, there are some larger, diffuse areas characterized by relatively high anomaly densities where hand-digging of individual point-source anomalies will occur. As discussed in Section 3.3.14 of the work plan for areas with high anomaly densities, it will be difficult to achieve the post-dig QC metrics at the ASY. The proposed QC procedure is typically used for isolated anomalies only and although, the anomalies identified during the DGM activities at the point source locations will be investigated and removed, remaining anomalies surrounding the point the source locations have the potential to interfere with the tolerance results of the man-portable EM61 MK2.

Concurrence of the data quality and interpretation was received from the U.S. Army Corps of Engineers (USACE), Baltimore District. An email indicating approval of the proposed dig list is presented in Enclosure A to the memorandum.

Proposed Intrusive Investigation Locations

The data were interpreted in accordance with Section 3.3.9 of the work plan. Based on a review of the historical and DGM data, Shaw has divided the MRS into three distinct regions that are proposed for intrusive investigation. The proposed locations and rationale is as follows:

Area at MRS	Anomalies Identified	Anomalies to be Investigated	Rationale
Suspected 40mm Burial Area	6 well-defined areas of high density anomalies.	6 burial features	Potential burial area for 40mm munitions.
Fourteen areas of relatively high anomaly density of varying shape and size distributed throughout the MRS.	>> 2,477 clusters of anomalies that represent aggregates of subsurface metal over 14 well-defined regions.	27 trenches that are each ~ 20 ft in length distributed within the 14 high anomaly density regions.	Trenching will provide the most useful information in the areas of high anomaly density where extensive buried debris over small areas is anticipated.
Remainder of MRS	3,621 individual anomalies	3,197 individual anomalies	The UXO Estimator relies on investigation of 100% of the candidate anomalies when less than 100% of an area has been covered by DGM. 250 anomalies are due to cultural features on the surface identified by the DGM field crew and the nails placed flush with the surface for the fiducial transects. 348 anomalies are less than or equal to 8 mV, and 174 (50%) of these will be initially investigated.

The work plan states that Shaw will investigation 100% of the anomalies identified during the DGM at the ASY MRS; however, the current anomaly investigation strategy includes trenching that will be conducted at areas identified with anomaly densities indicative of mass burial areas such as the 40mm burial area and the 14 defined regions of elevated anomaly density outside of the 40mm burial area. This memorandum services at the Field Change Notice for the revised investigation strategy to include trenching.

The proposed investigative strategy includes trenching of six burial features within the 40mm burial area and at 27 locations proposed outside of the 40mm burial area within the 14 regions of elevated anomaly density (**Figure 3**). Outside of the 40mm burial area and the 14 defined regions of elevated anomaly density, hand digging will be used at the remaining anomaly locations. Anomalies selected by the automatic target selector in Geosoft, whose location is in close proximity to cultural features identified by the field crew or the nails placed at the start and end of the transects acquired using the fiducial method, were removed (masked) from the target list.

Shaw suggests investigating 100% of the anomalies greater than or equal to 8 mV (3,023) and randomly selecting 50% of the anomalies that are less than 8 mV (174). If any MEC or MD is identified within the 174 randomly selected anomalies below 8 mV, the remainder of the anomalies will be investigated.

The proposed strategy is consistent with the results of the instrument verification strip (IVS), where smaller MEC items in the near-surface produce a response that exceeds 8 mV, as well as the results of the Open Demolition Area #2 and Ramsdell Quarry Landfill Area 2 DGM investigations where the excavation results indicated approximately 30% of the anomalies less than 5 mV were “no finds”. For items that were found below 8 mV, none of the items were identified as MD or MEC.

Proposed Intrusive Investigation Activities

Excavation and trenching activities in the 40mm burial area and 27 trenching areas outside of the 40mm burial area will be conducted in accordance with Section 3.5.3 of the work plan. Prior to excavation activities, the center and end points of each trench proposed for investigation will be identified using RTK GPS or RTS and pin flags or spray paint. Each end point will be ~10 feet from the center, providing a trench that is ~20 feet in length. Trenching operations will continue within the flagged region until one of the following conditions is met:

- MEC/MPPEH is identified;
- Native material is identified and a clear, distinct boundary between the native and fill materials is evident;
- A depth of ~ 10 feet is attained (if field conditions indicate a need to investigate to this depth); or
- The water table is reached.

The remainder of the target anomalies will be hand dug and also investigated in accordance with Section 3.5.2 of the work plan. The results of the intrusive investigation will be compared with the geophysical anomaly characteristics to ensure the results are representative. Based on the feedback process, anomalies may be re-investigated as described in the work plan.

If concentrated areas of MD or MEC/MPPEH are identified during the intrusive investigation activities, discrete samples will be collected within the excavated location at the bottom of the source area; therefore, a separate sampling memorandum will not be provided for proposed intrusive investigation activities at the ASY. All sampling will be consistent with the approved work plan. The samples will be analyzed for the parameters presented in the Sampling and Analysis Plan in the work plan that includes MEC metals, explosives, semivolatile organic compounds, nitrocellulose, total organic carbon and pH.

Figures

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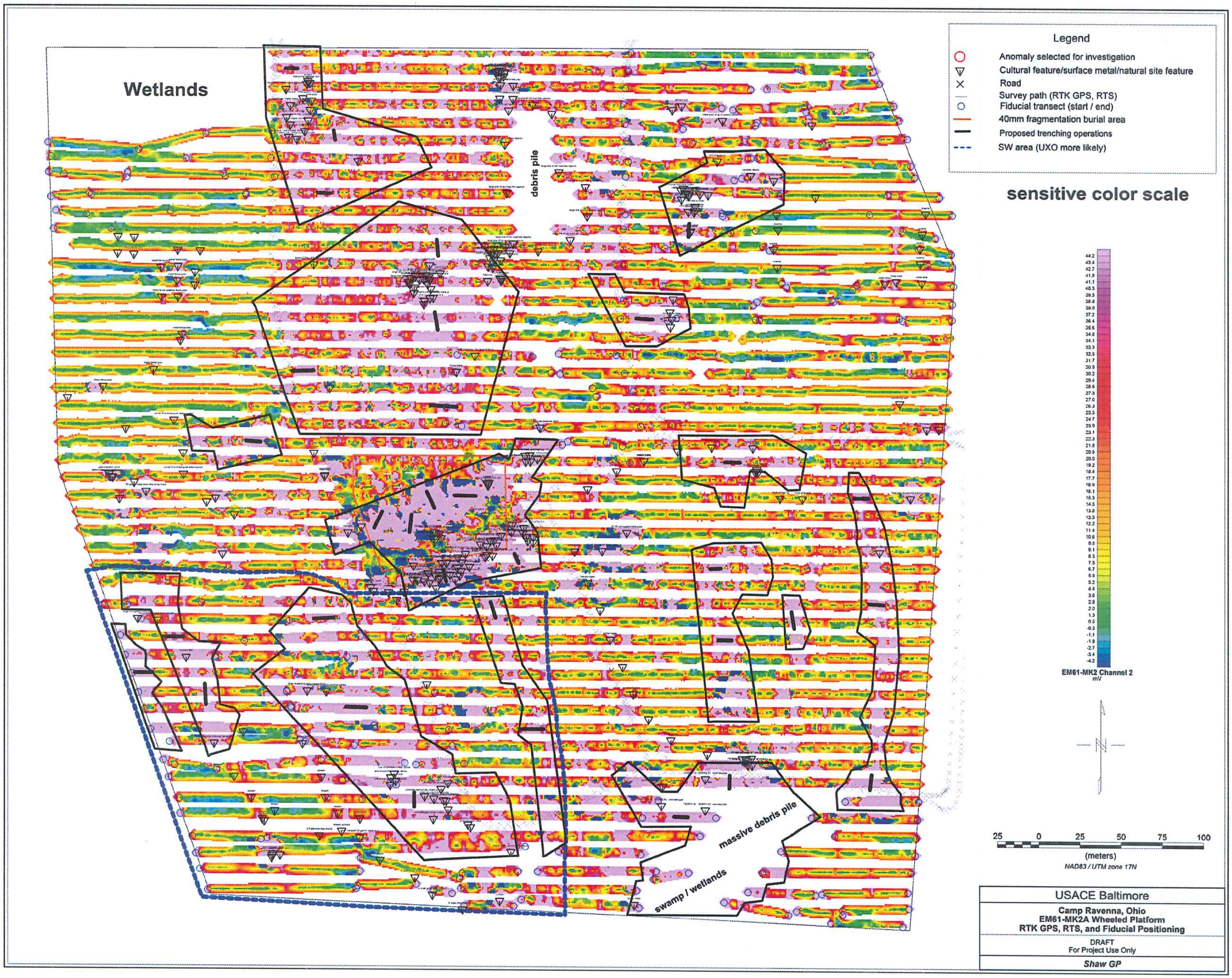

Figure 1. DGM Results, Sensitive Color Scale

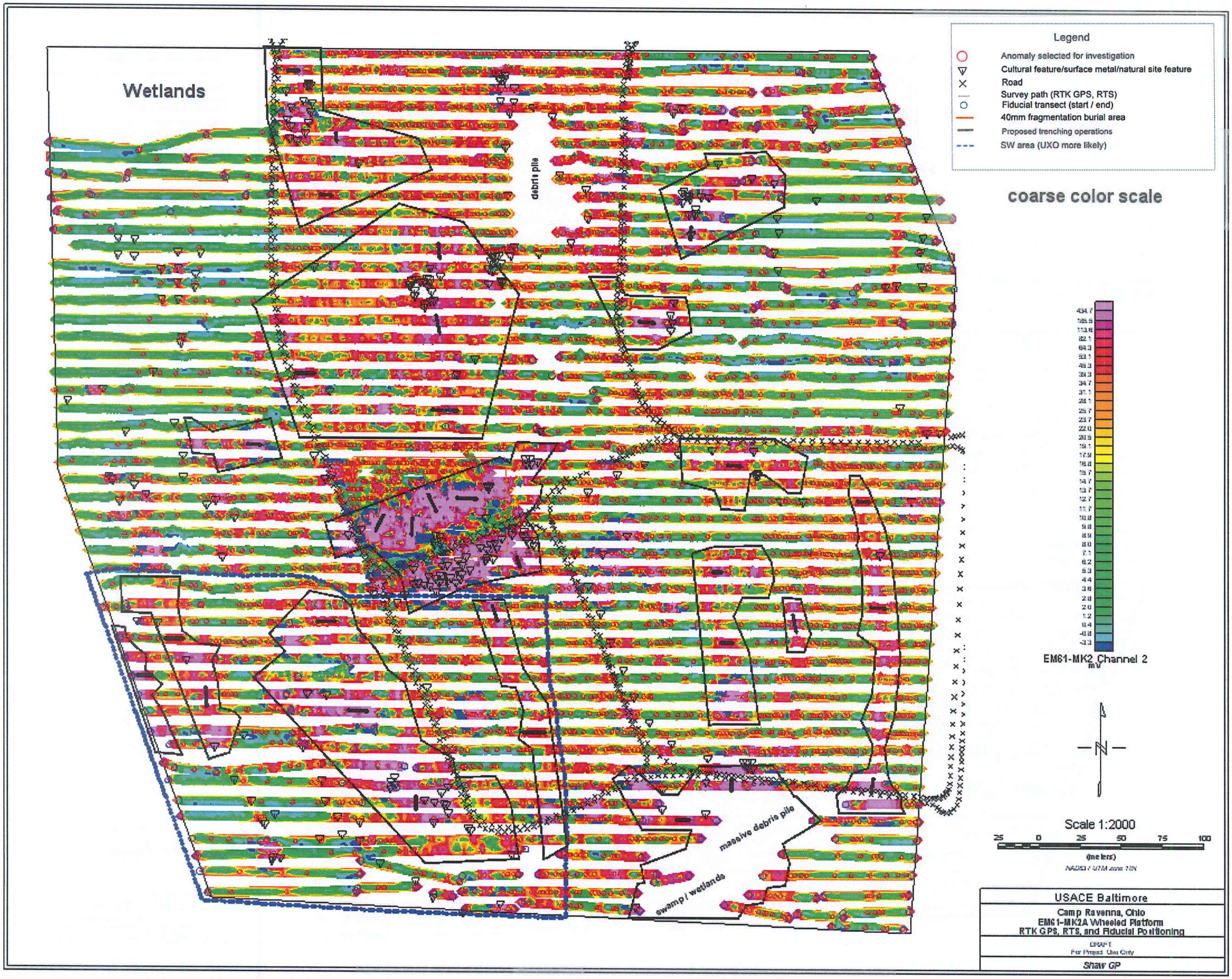

Figure 2. DGM Results, Coarse Color Scale

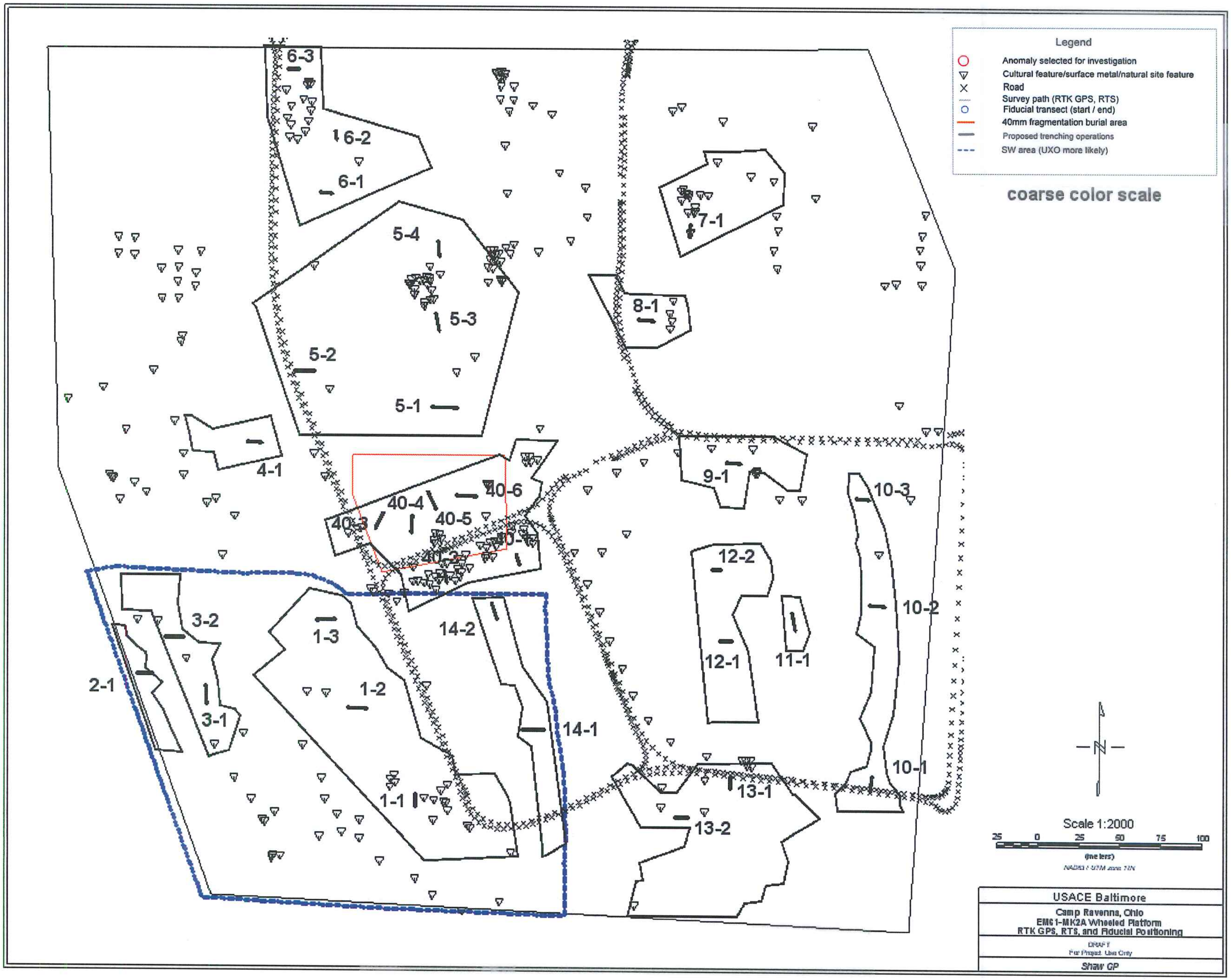

Figure 3. Proposed Trenching Locations

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Enclosure A
DGM Quality Assurance Forms

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From: King, David V NAB02 [David.V.King@usace.army.mil]
Sent: Tuesday, September 06, 2011 1:55 PM
To: Deignan, Timothy
Cc: Crispo, David; Colozza, Thomas S NAB02
Subject: RE: RVAAP (UNCLASSIFIED)

Tim

The Atlas Map is acceptable. When do you think you will start dig on the anomalies?

David

-----Original Message-----
From: Deignan, Timothy [mailto:timothy.deignan@shawgrp.com]
Sent: Wednesday, August 31, 2011 2:36 PM
To: King, David V NAB02
Cc: Crispo, David
Subject: FW: RVAAP (UNCLASSIFIED)

David:

We appreciate your call this afternoon to check in on the status of the RVAAP investigation.

Attached is the map that I sent Tom for approval at Atlas Scrap Yard. As discussed earlier on the phone, Tom generated 13 of the polygons and I added two more and selected 33 locations for trenching operations within the 15 polygons. Outside of the polygons there are 3,000-3,300 anomalies that will be investigated with hand-digging. I did not plot all of the individual target locations on the map in order to have a map with at least some clarity.

Once we receive your approval for Atlas we will finalize the Technical Memorandum and deliver it to the EPA and Travis at your office.

Thanks for your assistance,

Timothy Deignan
Registered Professional Geophysicist
Shaw Environmental & Infrastructure Group
7604 Technology Way, Suite 300
Denver, CO 80237-3000

720-554-8273 (direct)
303-319-1196 (cell)
720-554-8298 (fax)
timothy.deignan@shawgrp.com

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www.shawgrp.com

Please consider the environment before printing this e-mail.

-----Original Message-----
From: Deignan, Timothy
Sent: Monday, August 29, 2011 10:33 AM
To: 'Colozza, Thomas S NAB02'
Subject: RE: RVAAP (UNCLASSIFIED)

Tom:

I added a two small polygons based on your analysis - one on the westernmost edge of the survey area and one that partially surrounds the debris pile near the southeast section of the MRS.

I placed locations for proposed trenches within each polygon area (33 total).

If you agree with the current approach I will finalize the Technical Memorandum for final review by the agencies. In the higher anomaly density areas outside of the polygons I think it may be difficult to "clear the holes" using the approach specified in the WP.

Regards,

Timothy Deignan
Registered Professional Geophysicist
Shaw Environmental & Infrastructure Group
7604 Technology Way, Suite 300
Denver, CO 80237-3000
720-554-8273 (direct)
303-319-1196 (cell)
720-554-8298 (fax)
timothy.deignan@shawgrp.com

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-----Original Message-----
From: Colozza, Thomas S NAB02 [mailto:Thomas.S.Colozza@usace.army.mil]
Sent: Thursday, August 25, 2011 12:45 PM
To: Deignan, Timothy
Subject: FW: RVAAP (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Tim, Attached is the polygon areas. You can maybe group some smaller clusters but I think for the most part this separates out the larger saturated response areas from the single dig responses.

Tom

-----Original Message-----
From: Webster, Cheryl NAB
Sent: Thursday, August 25, 2011 2:39 PM
To: Colozza, Thomas S NAB02
Subject: RVAAP

Revised RVAAP file attached.

Classification: UNCLASSIFIED
Caveats: NONE

Attachment 2
Geophysical Data and Electronic Files

(Note: Data submitted on compact disc.)

Attachment 3
Instrument Verification Strip Technical Memorandum

Instrument Verification Strip Technical Memorandum in support of Digital Geophysical Mapping Activities for Military Munitions Response Program Remedial Investigation Environmental Services
Version 1.0

Ravenna Army Ammunition Plant
Ravenna, Ohio

Contract No. W912DR-09-D-0005
Delivery Order 0002

Prepared for:

US Army Corps
of Engineers®

U.S. Army Corps of Engineers
Baltimore District
10 S. Howard Street, Room 7000
Baltimore, Maryland 21201

Prepared by:

Shaw Environmental & Infrastructure, Inc.
100 Technology Center Drive
Stoughton, Massachusetts 02072

May 19, 2011

1.0 Introduction

Shaw Environmental & Infrastructure Inc. (Shaw) is submitting this *Instrument Verification Strip Technical Memorandum in support of Digital Geophysical Mapping Activities for Military Munitions Response Program Remedial Investigation Environmental Services at Ravenna Army Ammunition Plant* to the United States Army in accordance with the Performance Work Statement included in Multiple Award Military Munitions Services Contract No. W912DR-09-D-005, Delivery Order 002.

Shaw constructed an instrument verification strip (IVS) at Load Line 7 at the Ravenna Army Ammunition Plant (RVAAP) to validate the geophysical equipment and acquisition methodology proposed for the digital geophysical mapping (DGM) activities in support of environmental services for the Military Munitions Response Program (MMRP). The IVS location was chosen because it is considered to be representative of the major types of geologic, soil, and surface terrain conditions present at the RVAAP. The IVS uses industry standard objects (ISOs) to demonstrate sensor performance by comparison of the sensor response to physics-based models. The IVS activities were conducted between 28 April 2011 and 6 May 2011.

The ISOs were used to confirm the sensitivity of the Geonics EM61-MK2 sensor and the positioning capabilities of the Leica 1200 RTK global positioning system (GPS). Shaw also tested the data acquisition parameters (line spacing, sampling frequency, positioning system accuracy and precision, and sensor height above the ground surface) by comparing the sensor responses from the ISOs to standardized, physics-based models of the ISOs created specifically for munitions response projects by the Naval Research Laboratory (NRL).

The sensor responses for the inert munitions will be used as reference information to assist the interpreter(s) in defining the initial anomaly selection criteria for the project. Multiple acquisition lines were collected at offset distances from the center line of the IVS in order to determine the site-specific "noise," which is an important component in determining the anomaly selection criteria.

Prior to DGM activities at the IVS, instrument functional tests were performed and documented in accordance with the project *Work Plan for Military Munitions Response Program Remedial Investigation Environmental Services* (Shaw, 2011), hereafter referred to as the "work plan." The raw, processed, and interpreted digital data for the instrument functional tests and IVS were uploaded to the Ravenna Project Share Point and Shaw FTP site for distribution to members of the project delivery team (PDT).

2.0 IVS Construction

Shaw geophysicists performed a background survey near the existing GPO with the EM61-MK2 and Leica 1200 RTK GPS on 28 April 2011 to determine a suitable site for the IVS. During the initial DGM survey of the area on 28 April 2011, numerous subsurface anomalies were detected and subsequently removed by qualified UXO personnel using the DGM data as a guide to reacquire and excavate the anomalies. On 29 April 2011, a post excavation DGM survey was performed to ensure the IVS area was clear of anomalies that could potentially impact the IVS process.

On 5 March 2011 the following items were buried at the IVS:

Table 1
Items Buried at the IVS

Seed Item	Easting (m)	Northing (m)	Depth to Top (m)	2DCQ (m)	3DCQ (m)	Azimuth (deg*)	Inclination*
105mm projectile	490949.240	4559105.215	0.76	0.0106	0.0205	90	0
Large ISO	490950.613	4559099.496	0.76	0.0085	0.0169	90	0
Medium ISO	490952.004	4559093.477	0.46	0.0081	0.0154	90	-22
Medium ISO	490952.888	4559088.964	0.46	0.0082	0.0157	90	0
40mm proj. nose piece	490953.900	4559084.563	0.10	0.0079	0.0149	90	0
Small ISO	490954.509	4559081.703	0.10	0.0084	0.016	90	0

**stated azimuth is relative to trend of data acquisition line directly over buried items*
**Azimuth and inclination units are degrees*
Coordinate system is UTM Zone 17N, units of meters
CQ = coordinate quality
Easting and Northing coordinates are based on Shaw RTK GPS data
ISO = Industry Standard Object

Pictures of the IVS items are provided in Addendum 2. The ISOs consist of 1-inch by 4-inch (small), 2-inch by-8 inch (medium), and 4-inch by 12-inch (large) pipe nipples threaded at both ends and made from Schedule 40 black carbon steel. The ISOs were obtained from McMaster-Carr in Alabama in order to use the exact same items that were used by the NRL to generate the detection curves for the EM61-MK2. The table below describes the manufacturing details of the small, medium, and large ISOs.

Table 2
Manufacturing Details of the Small, Medium, and Large ISOs

Item	Nominal Pipe Size	Outside Diameter	Length	Part Number
Small Surrogate	1”	1.315” (33.4 mm)	4”	44615K466
Medium Surrogate	2”	2.375” (60.3 mm)	8”	44615K529
Large Surrogate	4”	4.500” (114.3 mm)	12”	44615K137

Source: *EM61-MK2 Response of Standard Munition Items, NRL et al October, 2008*

The inert 105mm projectile was obtained through the assistance of the USACE Explosives Ordnance Safety Specialist (EOSS). The inert 40mm projectile nose piece was unearthed based on the excavation activities that occurred during the background DGM survey of the IVS area. An inert 60mm mortar could not be obtained for the IVS and a medium ISO was substituted with concurrence from Tom Colozza, the USACE Project Geologist. The medium ISO produces a response that is very similar to the 60mm mortar based on the NRL detection curves presented in the document *EM61-MK2 Response of Standard Munition Items (NRL et al October, 2008).*

The small ISO was buried at the southern end of the plot and the 105mm projectile was buried at the north end of the IVS. The resulting layout is a slight trend from southeast to northwest for the IVS center line. The inclination and orientation of the IVS items were selected to represent the minimum signal response for the EM61-MK2 so that the results could be used to assist in the determination of the minimum signal intensity anticipated for anomaly selection.

The relative depth below the ground surface of each item was measured by Shaw geophysicists using a rigid measuring tape, and the x – y coordinates for the center of each item were determined with the Shaw Leica 1200 RTK GPS system. An Ohio registered professional land surveyor (PLS) from Vista also provided x – y coordinates for each IVS item as per the work plan. The general procedures outlined in the USACE document *Geophysical Investigations for Buried Munitions, Operational Procedures and Quality Control Manual (USAESCH, June, 2002)* were adhered to during the construction of the IVS.

Addendum 1 contains the following images related to the construction of the IVS:

- Color-coded images of the DGM data for the initial background and post excavation surveys
- Representative buried metal items removed from the IVS area
- Relative positions for the IVS items
- IVS items in the open hole

3.0 QA Oversight

A USACE Baltimore representative (Cyprian Fonge) performed oversight of the pre-burial and burial activities on 5 May 2011 during the construction of the IVS. These activities included digging of holes at predefined locations; burial of the IVS items at the required depth, azimuth, and orientation; and use of the RTK GPS to locate the coordinates of the center of each item. Additional activities included photographing the IVS items in the open hole and collection of static EM61-MK2 data over the items. As required by the Work Plan, an Ohio registered PLS also determined the coordinates for each IVS item.

4.0 Data Collection

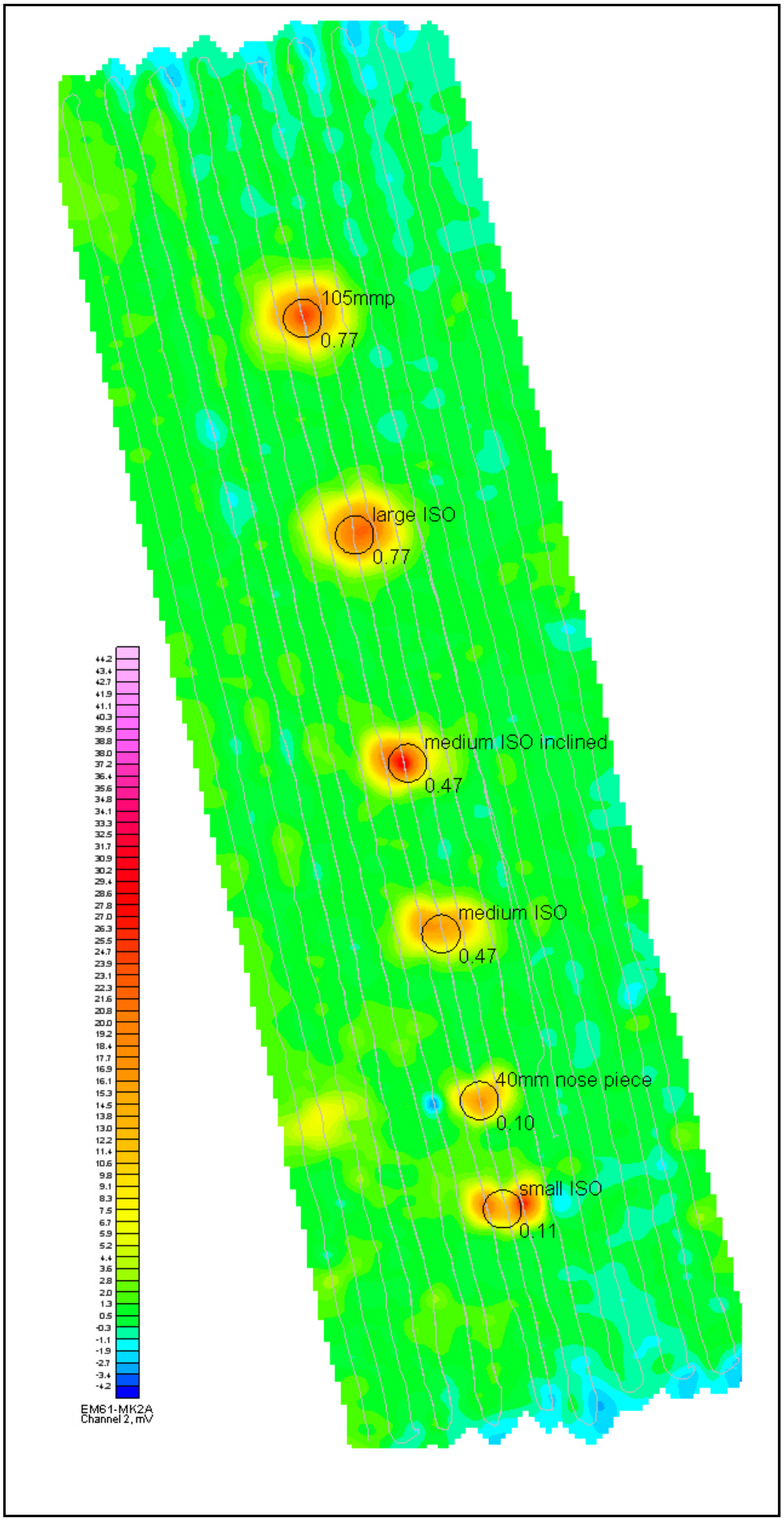
On 6 March 2011, a DGM survey was performed over the IVS by Shaw geophysicists. The equipment and data acquisition platform consisted of a standard EM61-MK2A model on a wheeled platform with the lower coil 42 centimeters (cm) above the ground surface and the RTK GPS antenna centered over the EM61 coils. Four time gates of the EM61-MK2A were acquired at a rate of 15 times per second, and a NMEA (National Marine Electronics Association) position string was output from the Leica 1200 RTK GPS twice per second and integrated with the EM61-MK2A measurements in real time using a ruggedized Juniper Allegro data logger. The data collection platform and recording parameters are consistent with those used for MMRP geophysical investigations for RI projects.

5.0 Results

Seventeen (17) parallel lines (8 on each side of the IVS center line) spaced at ≈0.6 meter intervals were collected to provide a complete, two-dimensional view of the anomaly characteristics for the IVS items (**Figure 1**). The acquisition line at the eastern edge of the data collection area is void of subsurface metal and signatures from the buried items and is considered a “noise” line that is used to assess the background noise at the site in areas void of subsurface metal.

The standard deviation of the measurements is an industry accepted method for determining the natural ambient noise from external EM sources and the noise attributed to the data acquisition process. The standard deviation of the channel 2 measurements on the east side of the IVS ranges from 0.6 to 0.8 millivolts (mV), which is consistent with values presented in the report *EM61-MK2 Response of Standard Munition Items (NRL et al October, 2008).*

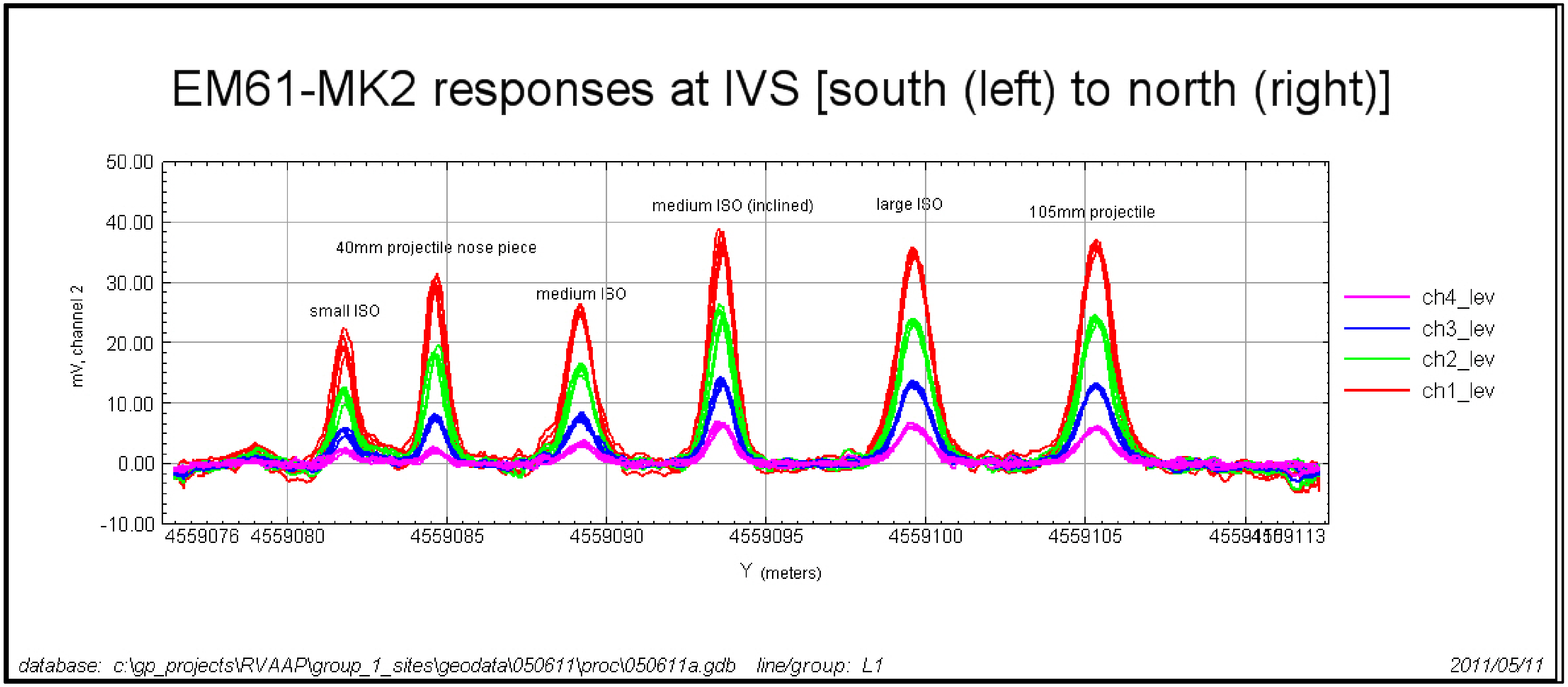
Figure 1
EM61-MK2 Channel 2 IVS Data



Shaw geophysicists also collected data over the IVS center line six times in alternate directions to demonstrate the repeatability of the DGM system and data acquisition methodology (**Figure 2**). The EM61-MK2 responses for the small, medium, and large ISOs and the 105mm projectile have been transcribed onto the NRL detection curves and are provided in **Addendum 2**. The statistics for the background noise at the IVS were used to designate the "noise line" (also known as the signal intensity threshold) on the NRL detection curves for the ISOs and the 105mm projectile. In general, if anomalies are selected near the noise threshold during interpretation there will likely be more false positives (i.e., excavations where no metal is present that is consistent with the geophysical anomaly characteristics).

The specific positions of the sensor responses on the detection curve graphs in **Addendum 2** are consistent with the expected sensor responses for small, medium, and large items buried at minimum response orientation. During one of the six passes across the IVS center line, the response for the small ISO was within 10 percent of the lower detection curve. The inclination and orientation of the IVS items were selected to represent the worst case scenario in terms of the anticipated response of the EM61-MK2 in order to ensure the proposed DGM system can meet the objectives of the investigations. Based on our recent experiences using small ISOs at minimum response orientation, the cause for the relatively lower sensor value for one pass is the result of (1) the normal variations in the attitude and orientation of the sensor platform as it crosses the burial location, and (2) limitations associated with the ability of the system to collect an infinite number of samples (the recording rate for the EM61-MK2 is set at the maximum of 15 samples per second).

Figure 2
EM61-MK2 Channel 1-4 IVS Data over Center Line (six passes)



The UCEPICK module in Oasis Montaj was used to interpret one of the passes over the center line of the IVS using the guidelines presented in the work plan. The table below represents the results of the automated interpretation. The results indicate that the items of interest can be accurately located using the proposed field procedures and data recording parameters for the EM61-MK2 and RTK GPS.

Table 3
Results of Automated Interpretation

Item	X_pick	Y_pick	ch1_lev	ch2_lev	ch3_lev	ch4_lev	ch2_lev_Wid	x_known	y_known	offset_x_m	offset_y_m
Small ISO	490954.60	4559081.76	22.44	12.75	5.96	2.52	1.93	490954.51	4559081.70	-0.09	-0.05
40mm nose piece	490953.93	4559084.58	30.65	18.54	7.65	2.25	2.04	490953.90	4559084.56	-0.03	-0.01
Medium ISO	490952.88	4559089.19	26.38	16.70	8.44	3.72	2.47	490952.89	4559088.96	0.01	-0.23
Medium ISO_inclined	490952.01	4559093.52	38.87	25.26	14.32	7.00	2.42	490952.00	4559093.48	0.00	-0.04
Large ISO	490950.73	4559099.48	35.27	23.91	13.59	6.78	3.09	490950.61	4559099.50	-0.12	0.02
105mm projectile	490949.27	4559105.27	36.84	24.62	13.21	6.02	3.59	490949.24	4559105.21	-0.03	-0.05

Based on the results of the IVS, the proposed DGM system and data acquisition methodology will provide data of sufficient quantity and quality to meet the project objectives. The following interpretation approach is suggested:

- Review MEC items present at each MRS and their likely depth of burial.
- Use IVS results to determine minimum signal intensity for anomaly selection based on smallest item(s) anticipated and/or the item with the minimum response at the depth of interest.
- Use interpretation strategy outlined in project Work Plan to select candidate anomalies for excavation.

6.0 Quality Control

The performance metrics for the project are based on MMRP guidance from the USACE issued in the *Performance Requirements for RI/FS using DGM Methods (USACE, 2008).*

Images of the results of the instrument functional checks performed prior to the DGM survey of the IVS are summarized in **Addendum 3** along with the metrics for platform velocity and spatial sampling (coverage). All performance metrics stated in the work plan were achieved for the IVS survey.

An Excel spreadsheet that tabulates and documents the results of all of the instrument functional tests and the spatial sampling performance metrics, as presented in **Table 4**, is uploaded daily to the Ravenna SharePoint site in the “QC” folder.

Table 4
Instrument Functional Tests and Spatial Sampling Performance Metrics

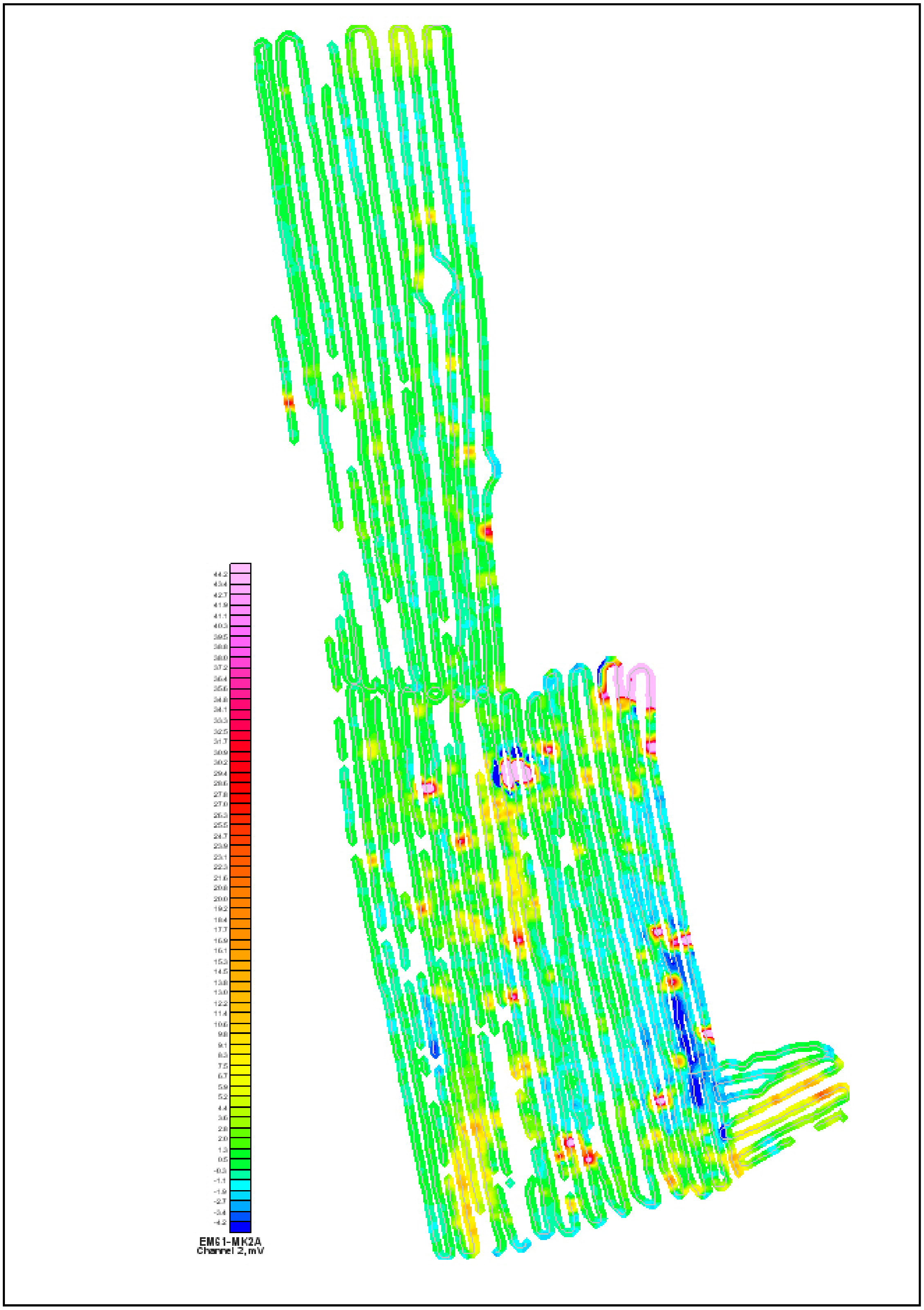
Instrument Functional Check	Performance Metric	Results
Static Test	Static background readings for all EM61-MK2 channels will remain within 2.0 mV of background.	100 % of the measurements for all EM61-MK2 data channels were within 2.0 mV of background.
Static Spike Test	For all EM61-MK2 channels, the static spike test will be +- 10 % calculated as a running average of each data channel for the first week of tests.	All EM61-MK2 data channels were +- 10 % of the average value determined from the first week of tests.
Personnel Test	All channels of the EM61 MK2 will remain within 2 mV of background determined as the standard deviation of the measurements.	All EM61-MK2 data channels were within 2 mV of background
Cable Shake Test	All EM61-MK2 data channels will be free from spikes greater than 3 mV.	All EM61-MK2 data channels were free from spikes greater than 3 mV.
IVS repeatability	The response of all EM61 MK2 data channels to the standard test item (small ISO) located at the midpoint of the IVS line will be ≥ 75 percent of the expected minimum value as determined during the first week of tests.	The EM61-MK2 channel 2 response of the small ISO placed at minimum response orientation along the ground surface produced a response greater than or equal to 75 % of the average value determined during the first week of tests.
Known Position Check	The acceptable difference in location measurement at a grid corner, transect endpoint, or survey monument is less than or equal to 0.15 meters.	The offset at the SE control point at the original GPO plot was 0.009 meters.
Dynamic Noise	Dynamic background readings (standard deviation) for the EM61 MK2 will remain within 2.0 mV of background for all data channels.	The range of the standard deviation for EM61-MK2 channels 1-4 was 1.13, 0.83, 0.53, and 0.41 mV respectively for the IVS noise line on the east side of the IVS.
Sensor Velocity	Ninety-five (95) percent of the EM61 MK2 sensor measurements will be acquired at a speed of less than or equal to 1.5 meters per second (3.4 miles per hour; 5 feet per second).	99.94 % of the measurements were acquired at a speed of less than 1.5 meters per second.
Along Track Sampling	Ninety-eight (98) percent of the EM61 MK2 sensor measurements will be less than or equal to 0.24 meters (0.8 ft).	99.97 % of the measurements were acquired at a spacing of less than 0.24 meters.

Instrument Functional Check	Performance Metric	Results
Across Track Sampling	Ninety (90) percent of the area will be covered at 1.1 meter (3.5 ft) line spacing or less excluding data gaps from trees or other obstacles that preclude the survey platform from providing complete coverage. The not-to-exceed line spacing is 1.2 meters (4.0 ft).	100 % of the IVS area was covered at a line spacing of 1.1 meters (3.5 ft) or less.
Dynamic Position Check	The interpreted location of the grid corner nails will be ≤ 0.76 meters (2.5 ft) for the EM61 MK2 2D full coverage survey at the Firestone Test Facility. For the EM61 MK2 1D transect surveys that use the RTK GPS or RTS to determine position the interpreted location of the nails at the transect endpoints will be ≤ 0.46 meters (1.5 ft) projected perpendicular to the instrument direction). For the 1D transects that use fiducial positioning the interpreted location of the nails at the transect endpoints will be ≤ 0.6 meters (2 ft).	The data were interpreted using the UCEPICK module in Oasis Montaj. The average position offset in the along-track direction for the buried items at the IVS is 0.07 meters. The largest offset was 0.23 meters.
Latency Correction	The EM61 MK2 sensor data will be aligned to one sample increment (approximately 0.15 meters (0.5 ft) so no visible chevron effects are present in the color coded images of the EM61-MK2 data.	No visible chevron effects are present in the EM61-MK2 color coded images.
Data Consistency	Consistent channel naming conventions, processing parameters and methods will be used for all datasets and channels within each dataset by utilizing Oasis Montaj scripts.	Oasis Montaj scripts were used to process the IVS data.

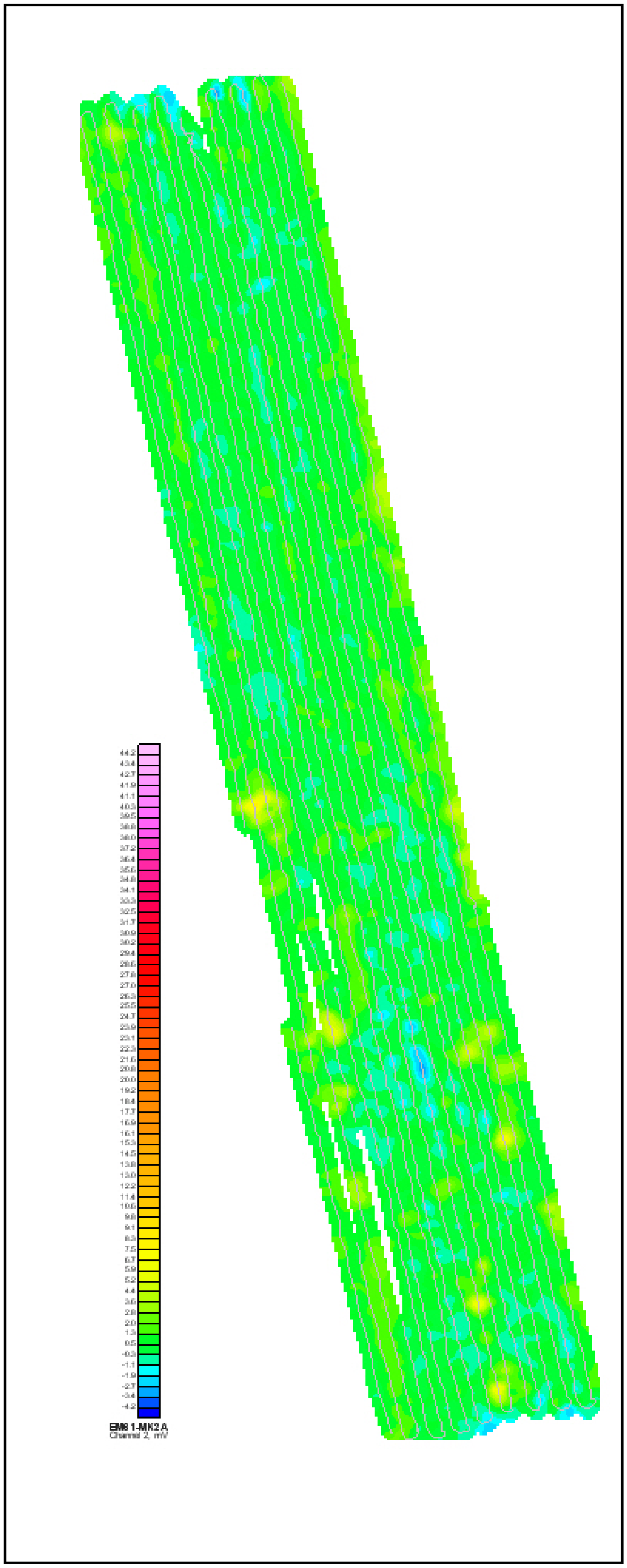
7.0 Conclusions

The results of the IVS indicate that the instrument functional test program and performance metrics proposed in the project work plan will ensure the data collected are of sufficient quantity and quality to meet the project objectives for the RVAAP DGM investigation. There were no critical failures during any of the instrument functional checks. Based on the DGM data collected, processed, and interpreted at the IVS, no modifications to the existing performance metrics or data processing sequence are proposed.

Addendum 1
IVS Images



EM61-MK2 background survey at IVS area on April 28th



EM61-MK2 background survey at northern portion of IVS area on April 29th after excavation of some anomalies

Representative items excavated at IVS area based on background DGM surveys

IVS item azimuth and relative position along IVS center line (southeast [bottom] to northwest [top])

Small ISO in open hole

40mm projectile nose piece in open hole

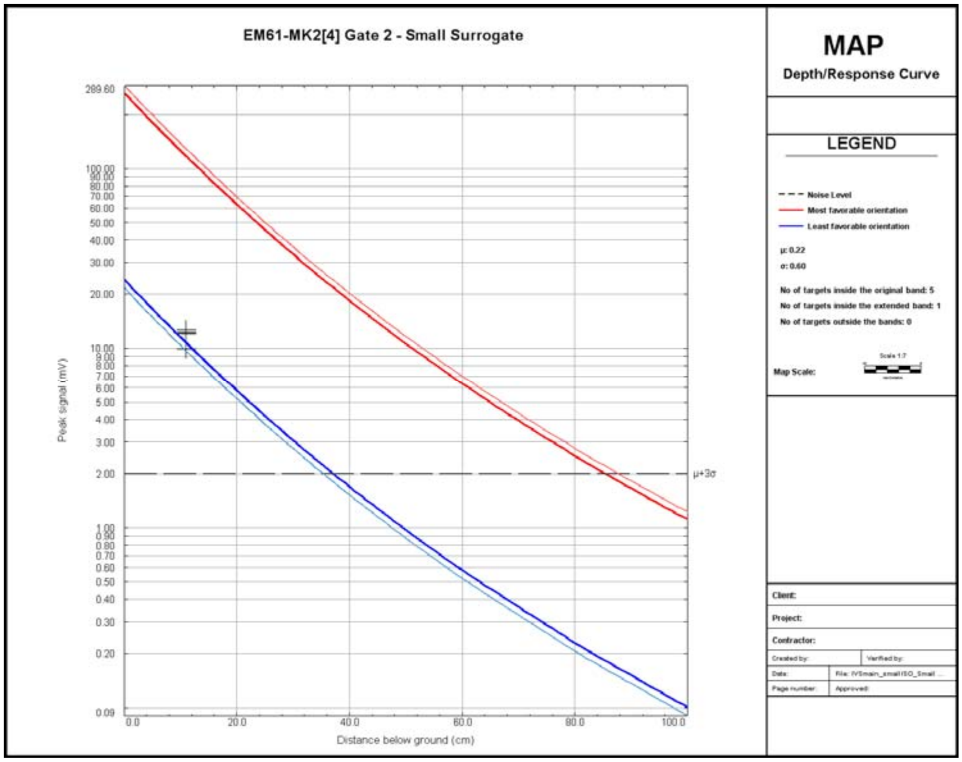
Medium ISO in open hole

Medium ISO (inclined) in open hole

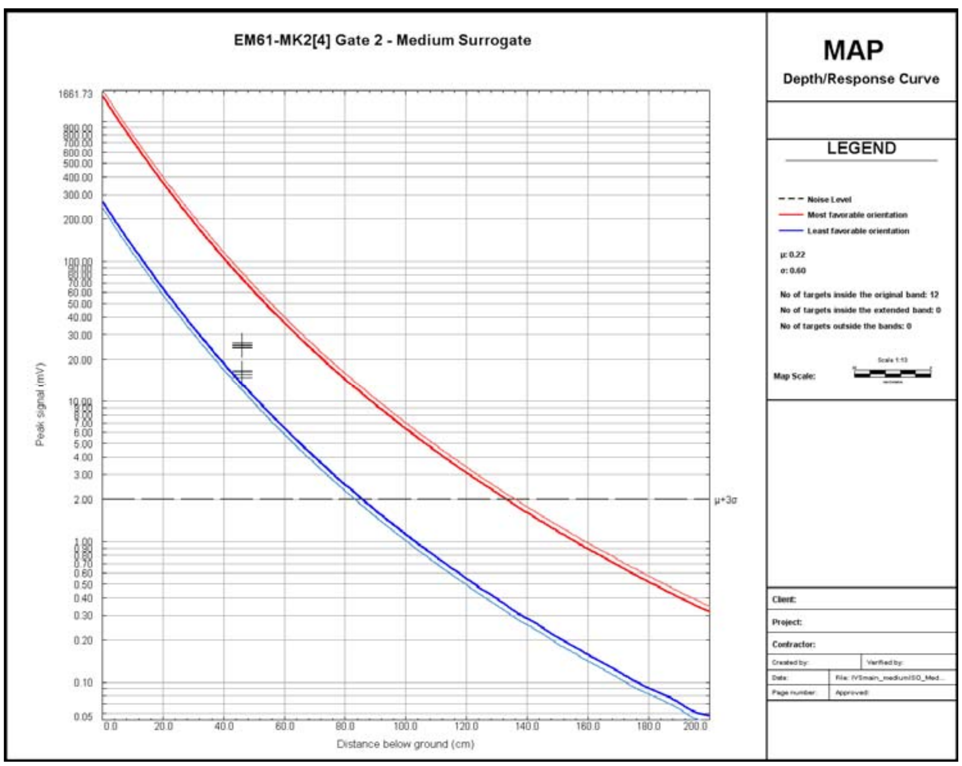
Large ISO in open hole

105 mm projectile (inert) in open hole

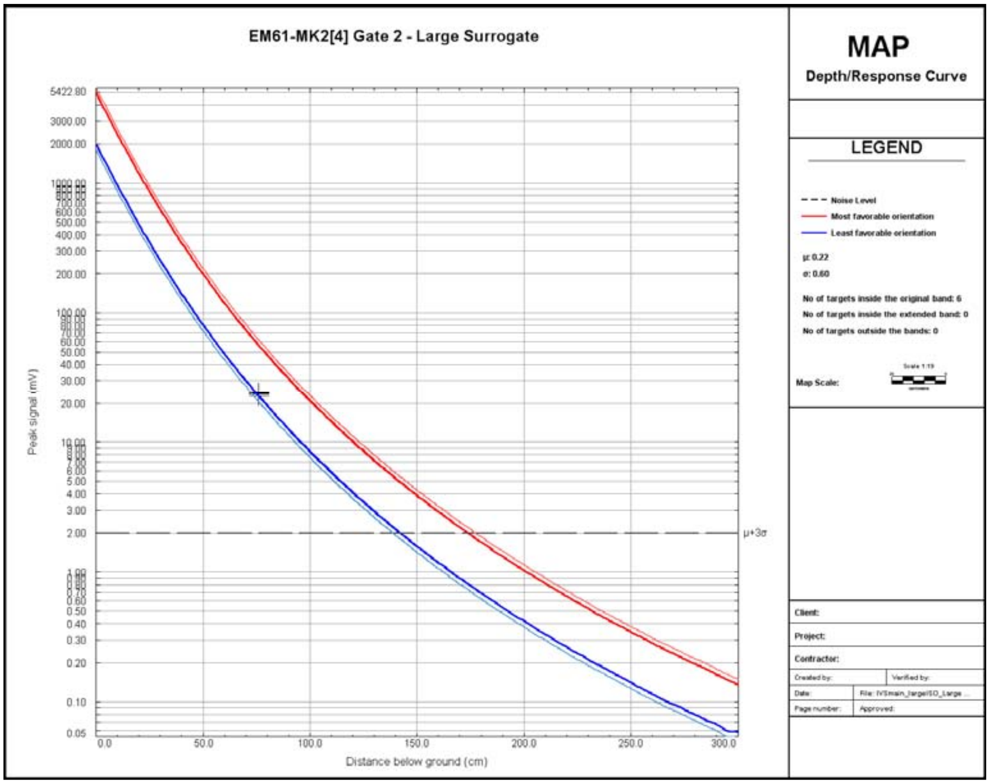
Addendum 2
EM61-MK2 IVS Responses / NRL Detection Curves



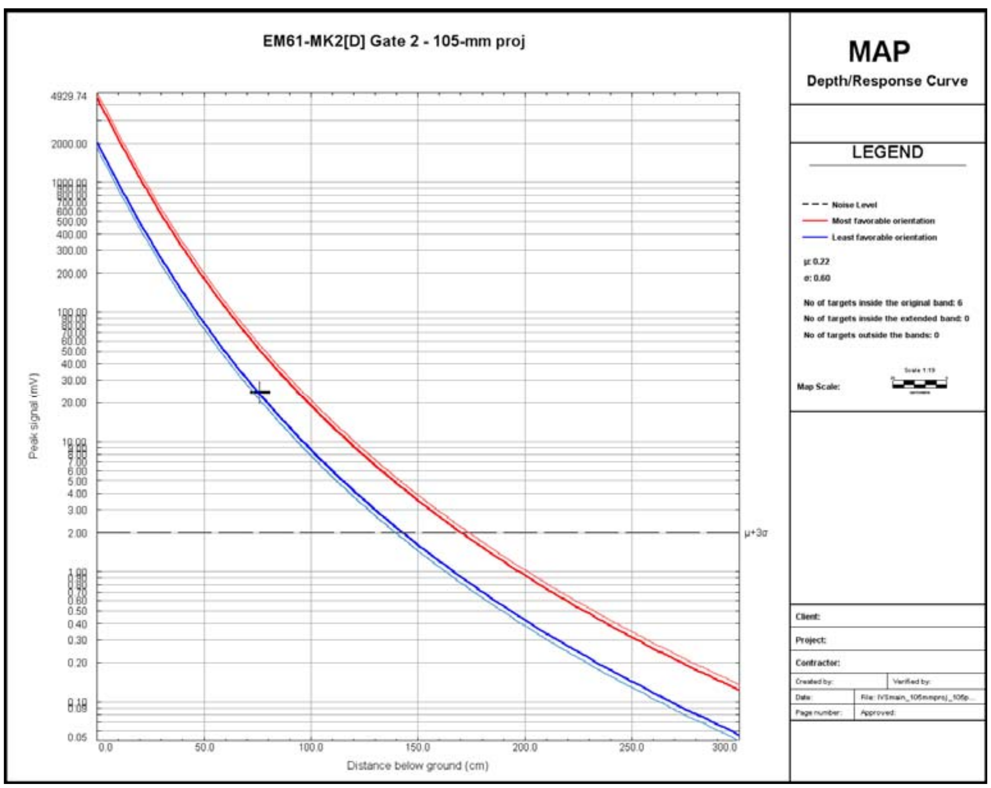
Small ISO



Medium ISO (horizontal and inclined)



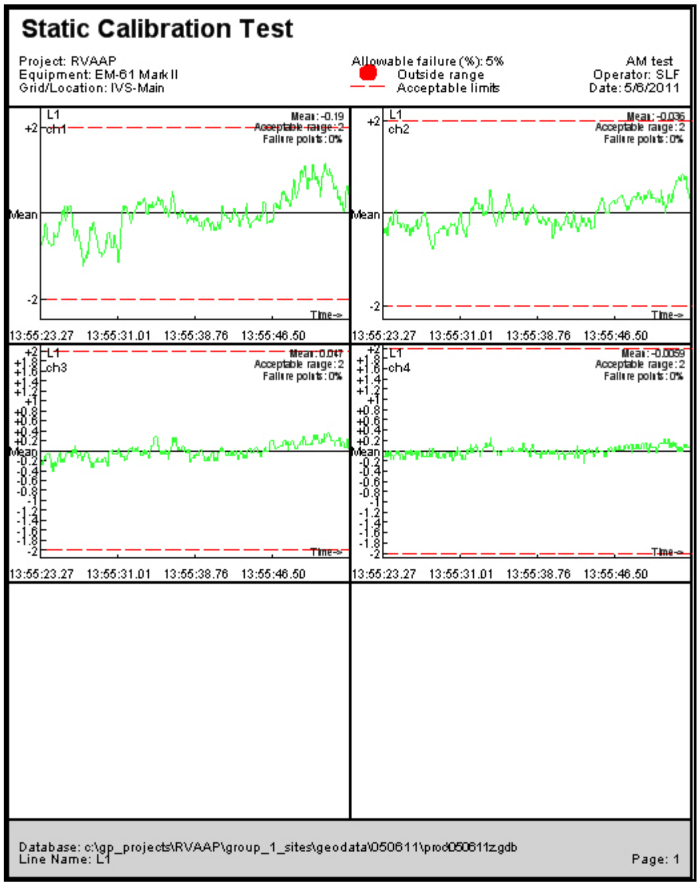
Large ISO



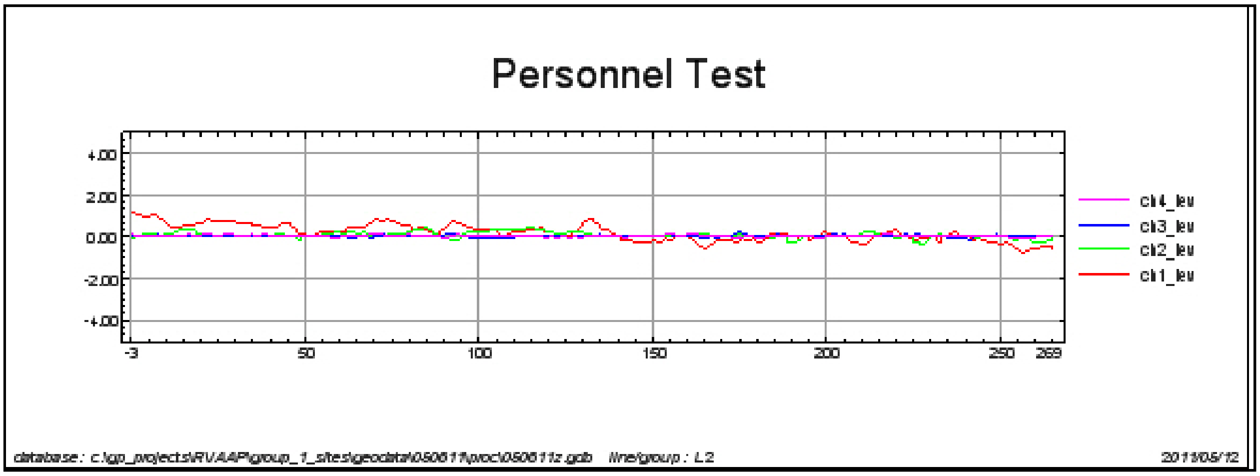
105mm projectile

Addendum 3
Images for Instrument Functional Checks and Spatial Sampling Performance Metrics

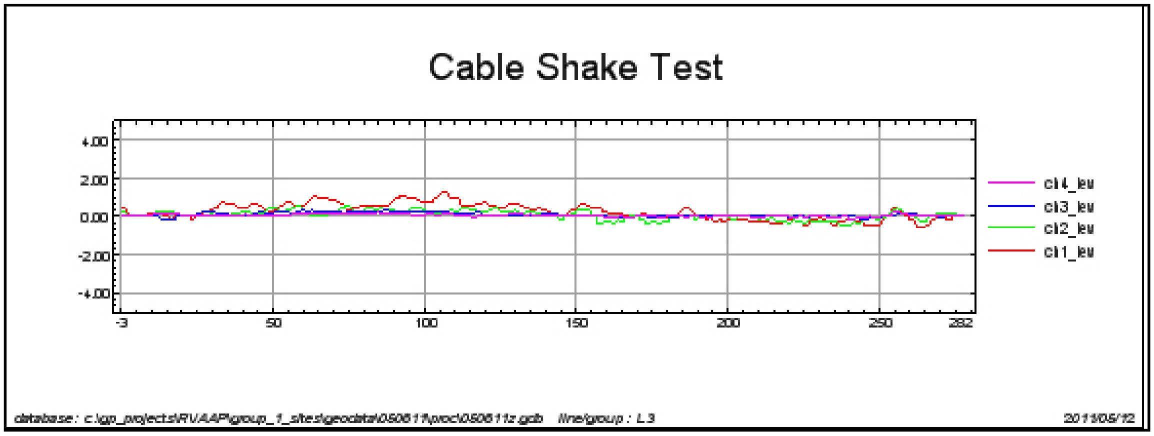
Images for Instrument Functional Checks



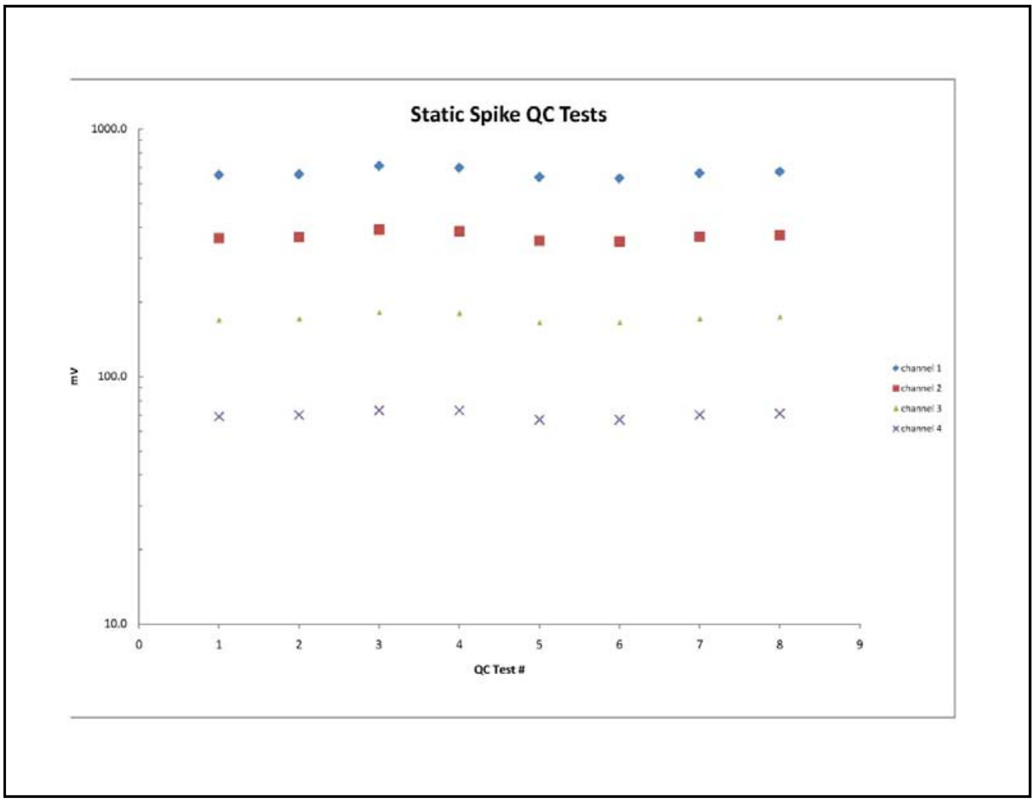
Static Test (metric: +-2 mV for all EM61-MK2 data channels)



Personnel Test (metric: +- 2 mV for all EM61-MK2 data channels)



Cable Shake Test (metric: no data spikes that exceed 3 mV for all EM61-MK2 data channels)



Static Response (Spike) Test (metric: within 10 percent of the average of the first week of tests). Results shown include data from start of project

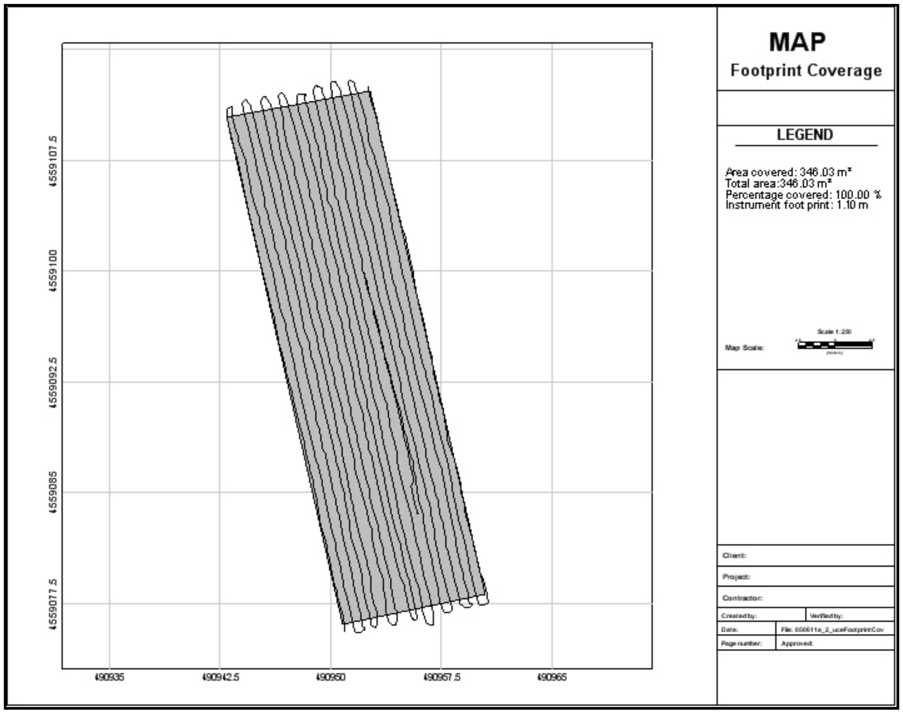
ID	E	N	2DCQ	3DCQ	date	site	sort	notes
CHK RAV11	497217.598	4559443.244	0.0066	0.0144	5/6/2011	Atlas	RTK check	RTK check
GPO SE	491055.636	4558845.717	0.0091	0.0155	5/6/2011	IVS	RTK check	RTK check

Known position check (metric: 0.15 meters). The known position check for the Leica RTK GPS check was within 0.009 meters of the actual location of the control point near the IVS. A second RTK check was performed with the system on 6 May 2011 at a control point near Atlas Scrap Yard and the check was within 0.007 meters of the actual control point location.

Spatial Sampling Performance Metrics

Performance metrics associated with speed of data acquisition platform and the spatial sampling are summarized below.

- **Background dynamic geophysical sensor check**. The standard deviation for dynamic noise (i.e., areas where no metal is present) for the EM61 MK2 will remain within 2.0 mV of background for all data channels. *All EM61-MK2 data channels achieved the metric. The range of the standard deviation for channels 1-4 was 1.13, 0.83, 0.53, and 0.41 mV respectively for the IVS noise line on the east side of the IVS.*
- **Sensor velocity check (Speed)**. Ninety-five (95) percent of the EM61 MK2 sensor measurements will be acquired at a speed of less than or equal to 3.4 miles per hour (1.5 meters per second). *99.94 percent of the measurements were acquired at a speed of less than 1.5 meters per second, which achieves the metric.*
- **Along Track Sampling**. Ninety-eight (98) percent of the EM61 MK2 sensor measurements will be less than or equal to 0.24 meters. *99.97 percent of the measurements were acquired at a spacing of less than 0.24 meters, which achieves the metric.*
- **Across Track Sampling**. The line spacing for the EM61-MK2 full coverage survey methodology is 2.5 to 3 feet. Ninety (90) percent of the area will be covered at a 3.5-foot line spacing or less excluding data gaps from trees or other obstacles that preclude the survey platform from providing complete coverage. The not-to-exceed line spacing is 4.0 feet. Areas that exceed the metric may be identified by the data processor as potential "fill-in" areas at the Firestone Test Facility MRS where full coverage will be performed. Data gaps will be not be specified by the processor where the collection of additional data will not provide useable information (e.g., high density anomaly areas, buildings, adjacent to cultural features). This metric is intended to control data gaps due to inconsistent navigation that are not associated with trees or other obstructions. The UX Process utility "ucefootprintcov.gx" will be used to evaluate this metric. *100 percent of the area was covered at a line spacing of 1.1 meters (3.5 ft) or less, which achieves the metric.*



- **Known Location Dynamic Positioning Check**. The interpreted location of the grid corner nails will be ≤ 2.5 feet for the EM61 MK2 2D full coverage survey at the Firestone Test Facility. For the EM61 MK2 1D transect surveys that use the RTK GPS or RTS to determine position the interpreted location of the nails at the transect endpoints will be ≤ 1.5 feet (projected perpendicular to the instrument direction). For the 1D transects that use fiducial positioning the interpreted location of the nails at the transect endpoints will be ≤ 2.0 feet. *The average offset in the along-track direction for the buried items at the IVS is 0.07 meters, which achieves the metric.*

Appendix B
Ohio EPA Correspondence

Crispo, David

From: Mohr, Eileen [eileen.mohr@epa.state.oh.us]
Sent: Friday, September 09, 2011 2:12 PM
To: Crispo, David; Cobb, Dave; Harrison, Robert; travis.mccoun@usace.army.mil; glen.beckham@usace.army.mil; kathryn.s.tait@us.army.mil; kim.harriz@us.army.mil; christy.esler@us.army.mil; mark.c.patterson@us.army.mil; eric.s.cheng@usace.army.mil
Cc: Fisher, Todd; Mohr, Eileen
Subject: RE: Atlas Scrap Yard Technical Memo

Daves:

Please forward to others I may have missed.

As I mentioned on this afternoon's comment resolution call between Ohio EPA and Shaw (for comments below), Shaw is approved to start the trenching and anomaly investigation activities as proposed in the ASY tech memo. The requested changes and additions to the tech memo will be made concurrently by Shaw and sent to all stakeholders.

Have a great weekend.

Eileen

From: Mohr, Eileen
Sent: Thursday, September 08, 2011 11:57 AM
To: Crispo, David; dave.cobb@shawgrp.com
Cc: Mohr, Eileen; Fisher, Todd
Subject: RE: Atlas Scrap Yard Technical Memo

Hi Daves:

A few quick comments on the ASY tech memo:

1. pg 2... in the summary of DGM results, first para last sentence... needs some clarification. Are some words missing?

2. Same page, 2nd para last line... were maps consulted to see if these were actually former utility lines, or is this just a guess?

3. pg 3, first para: please clarify the last line about adequately clearing the holes in post QC operations. (also appears in the email string)

4. pg 3, table: please clarify the trenches and number of anomalies selected for investigation. Also: the wp discussed (I believe) the 4-5 mV not the 8 mV cut-off (I don't recall that it has been resolved since it was part of the RQL area #1 which has stalled due to asbestos issues.)

5. pg 3, last para and top of pg 4 1st para: discusses the 8 mV cut-off. The wp has 4-5 mV cut-off. Needs further discussion. See comment above. If we agree to this, we will need to go the route of a technical change memo to the wp.

6. pg 4 3rd bullet: 10 ft depth based upon?

7. Pg 4, last para: how is "concentrated area" of MD or MEC/MPPEH defined?

8. Figs 1 and 2: anyway to change any of the colors (or number them) for trenches and dig points? I found most but not all of the trenches.

That is it! Thanks.

Eileen

From: Crispo, David [david.crispo@shawgrp.com]
Sent: Tuesday, September 06, 2011 5:09 PM
To: Mohr, Eileen; Fisher, Todd; McCoun, Travis NAB; Caraballo, Elbert A NAB; Day, John NAB; Esler, Christy L Ms ARMY GUEST USA OSA USA; Tait, Kathryn S Ms CIV NG OHARNG; kim.harriz@us.army.mil; Moore, Gregory F LRL; mark.c.patterson@us.army.mil
Cc: Cobb, Dave; Harrison, Robert; Deignan, Timothy; Hughes, Linda
Subject: Atlas Scrap Yard Technical Memo

Eileen and all:

Attached for your review and approval is the memo with results of the recent DGM and proposed intrusive investigation activities at the Atlas Scrap Yard MRS. Please contact Dave Cobb or myself with any questions. Thanks.

David Crispo, P.E.
Project Engineer
Shaw Environmental & Infrastructure, Inc.
100 Technology Center Drive
Stoughton, MA 02072
617.589.8146 direct
617.589.2160 fax

Crispo, David

From: McCoun, Travis NAB [Travis.Mccoun@usace.army.mil]
Sent: Friday, April 05, 2013 12:06 PM
To: Crispo, David; Cobb, Dave
Subject: FW: Atlas Scrap Yard Pictures (UNCLASSIFIED)
Attachments: IMG_0007.jpg; IMG_0008.jpg; IMG_0009.jpg; IMG_0010.jpg; IMG_0011.jpg; IMG_0012.jpg; IMG_0013.jpg; IMG_0014.jpg; IMG_0015.jpg; IMG_0016.jpg; IMG_0017.jpg; IMG_0018.jpg; IMG_0019.jpg; IMG_0020.jpg; IMG.jpg; IMG_0001.jpg; IMG_0002.jpg; IMG_0003.jpg; IMG_0004.jpg; IMG_0005.jpg; IMG_0006.jpg

Classification: UNCLASSIFIED
Caveats: NONE

FYI

-----Original Message-----
From: Trumble, Jay N LRL
Sent: Monday, March 18, 2013 7:11 AM
To: McCoun, Travis NAB
Cc: Merkel, Brett A CIV NG NGB (US); Beckham, Glen LRL; Tait, Kathryn S NFG NG OHARNG (US)
Subject: FW: Atlas Scrap Yard Pictures (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Travis,

1997 ASY photos, from Ohio EPA

Thank you,
Jay Trumble
Project Engineer, Environmental Engineering Engineering Division, Louisville District
office: 502-315-6349
fax: 502-315-6309
jay.n.trumble@usace.army.mil

-----Original Message-----
From: Tait, Kathryn S NFG NG OHARNG (US) [mailto:kathryn.s.tait.nfg@mail.mil]
Sent: Friday, March 15, 2013 3:14 PM
To: Beckham, Glen LRL; Trumble, Jay N LRL; Crispo, David; Cobb, Dave
Subject: FW: Atlas Scrap Yard Pictures (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

FYI

-----Original Message-----
From: Mohr, Eileen [mailto:eileen.mohr@epa.state.oh.us]
Sent: Friday, March 15, 2013 3:04 PM
To: Patterson, Mark C CIV (US); Wood, Ann M CIV NG NGB ARNG (US); Tait, Kathryn S NFG NG OHARNG (US)
Cc: Fisher, Todd; Mohr, Eileen; Zikmanis, Nancy; Burke, Justin
Subject: Atlas Scrap Yard Pictures

All:

Here are photos taken at the Atlas Scrap Yards in May 1997. We discussed the disposition of these materials during the March 7, 2013 MMRP meeting.

Please pass along as needed in order to find the paper trail.

You may need to rotate these to look at them easily.

I believe that this takes care of the "due-outs" that I had.

Eileen

Eileen T. Mohr

Project Manager

Ohio Environmental Protection Agency

Northeast District Office

Division of Environmental Response and Revitalization

2110 East Aurora Rd

Twinsburg, Ohio 44087

(330) 963-1221

(330) 487-0769 (fax)

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Crispo, David

From: Mohr, Eileen [eileen.mohr@epa.state.oh.us]
Sent: Monday, September 19, 2011 2:59 PM
To: Wilk, Ed
Cc: Cobb, Dave; Crispo, David; Mohr, Eileen; Fisher, Todd
Subject: RE: Wetland Inspections at RVAAP MRSs

Importance: High

Hi Ed

Thanks for the reply!

Daves: I think that if you can set up a call to disscuss the situation with BRACD, USACE, OHARNG, NGB, Ohio EPA etc. given the wetland and asbestos issues that would be great.

I think we need to look at establishing LUCs for both IRP and MMRP issues.

I am in Buffalo. Not sure when I will return. So if you need me, please call my cell.

Thanks.

Eileen

From: Wilk, Ed
Sent: Monday, September 19, 2011 7:29 AM
To: Mohr, Eileen
Subject: RE: Wetland Inspections at RVAAP MRSs

Hi Eileen

Sorry to get back to you so late. It's been a busy field month.

The MRS review to allow movement of geophysical equipment was for temporary clearing in areas that are not category 3 wetlands. Temporary meaning when the exercise is complete, the vegetation will re-establish again. All tree canopy must remain in forested areas.

Soil disturbance was not mentioned on the April 28th meeting. Disturbing the soils in wetland areas will require a permit, including the Ramsdell Quarry wetland area.

The contractor should review the wetland delineation report for the Ramsdell Quarry area to avoid soil disturbance in the wetlands. If the Ramsdell Quarry delineation is more than 5 years old, the report may need revised.

Call me if you have any questions.

Ed Wilk
OEPA-DSW-401
330-963-1172

From: Mohr, Eileen
Sent: Saturday, September 17, 2011 3:15 PM
To: Wilk, Ed
Cc: Mohr, Eileen; Fisher, Todd
Subject: FW: Wetland Inspections at RVAAP MRSs

Hi Ed

Any thoughts?

Thanks!

Eileen

From: Mohr, Eileen
Sent: Friday, September 09, 2011 2:05 PM
To: dave.cobb@shawgrp.com
Subject: FW: Wetland Inspections at RVAAP MRSs

From: Mohr, Eileen
Sent: Friday, September 09, 2011 2:04 PM
To: Wilk, Ed
Cc: david.crispo@shawgrp.com; Fisher, Todd; mark.c.patterson@us.army.mil; christy.esler@us.army.mil; glen.beckham@usace.army.mil; thomas.m.chanda@usace.army.mil; Mohr, Eileen
Subject: RE: Wetland Inspections at RVAAP MRSs

Hi Ed:

Any thoughts on the email below?

Thanks and have a good weekend!

Eileen

From: Mohr, Eileen
Sent: Thursday, August 25, 2011 1:38 PM
To: Wilk, Ed
Cc: david.crispo@shawgrp.com; Mohr, Eileen; Fisher, Todd; mark.c.patterson@us.army.mil; christy.esler@us.army.mil; glen.beckham@usace.army.mil; thomas.m.chanda@usace.army.mil
Subject: FW: Wetland Inspections at RVAAP MRSs

Ed:

Please see email string below with respect (especially) to Ramsdell Quarry Landfill (RQL). The contractor (Shaw) will be needing to get into the quarry area of the landfill relatively quickly in order to dig metallic anomalies (104 of them); and is also proposing to install some trenches (once water is hit they would back off). Theses activities are being conducted as part of the Military Munitions Program (MRP) that follows CERCLA and which is enforced under the Directors Final Findings and Orders (DFFO). Are these activities permissable in the quarry bottom or not? Is the entire quarry bottom considered a wetland area? Or are there areas that these activities could take place in the quarry bottom outside of the wetland areas? If considered a wetland area would/is mitigation required?

If you need to come out and see the site again, please let me or Todd know and we will coordinate.

Thanks for you help on this!

Eileen

From: Crispo, David [david.crispo@shawgrp.com]
Sent: Thursday, August 25, 2011 1:21 PM
To: Mohr, Eileen; Fisher, Todd
Subject: FW: Wetland Inspections at RVAAP MRSs

Eileen

Below is the email that I sent on May 2 following our wetlands walkthrough for the first 7 sites. It doesn't look like I forwarded to Ed Wilk but that was probably because I didn't have his email address. I will contact Tom Chanda to get his input. Hope this helps the cause. Let me know if you have any questions.

Dave

From: Crispo, David
Sent: Monday, May 02, 2011 7:51 PM
To: Eileen Mohr; 'Todd Fisher'; Patterson, Mark C Mr CIV USA OSA; Elbert Caraballo; McCoun, Travis NAB; Trumble, Jay N LRL; Tait, Kathryn S Ms CIV NG OHARNG; christy.esler@us.army.mil
Cc: Cobb, Dave
Subject: Wetland Inspections at RVAAP MRSs

All

As requested by Mark Patterson during the MMRP construction kickoff meeting on April 28, Shaw and Ohio EPA conducted a walkthrough of the MRSs this afternoon in order to evaluate potential impact to wetland areas as a result of Shaw's proposed vegetation clearance activities. The attendees were myself and Landon McKinney (Natural Resources and Wetlands Specialist) for Shaw and Eileen Mohr, Todd Fisher, and Ed Wilk (Environmental Specialist) for Ohio EPA.

We visited each of the individual MRSs where vegetation clearing is expected (Open Demolition Area #2, Atlas Scrap Yard, and Ramsdell Quarry Landfill Area 1 and Area 2). The following clearing process was explained to Ed Wilk of the Ohio EPA:

- Vegetation clearing will consist of removing scrub vegetation (briar patches and small trees less than 3-inches in diameter) and low hanging limbs that prohibit the movement of the geophysical equipment through the MRSs.
- The cleared areas will consist of 4 to 5-foot swaths to allow for the movement of the equipment along a line or transect and the transects will be spaced between 10 and 40 feet apart depending on the MRS. No mass land clearing is proposed.
- No mowing will be performed due to work being conducted during the nesting season between April and August and the vegetation will be removed using hand loppers, industrial weed whackers and chain saws.

Based on the review of existing wetlands and verification for any transitional wetlands at each of the MRS, the following areas were approved for vegetation clearance by the Ohio EPA:

- **Open Demolition Area #2** – The scrub brush in Burial Areas 1 and 2 identified in the Shaw work plan can be removed with the exception of the transitional wetlands vegetation along the Sand Creek. This vegetation is primarily evident in the low lying valley in the vicinity of the former beaver dam and the center of the former 40mm firing range. All upland vegetation can be cleared as needed.
- **Atlas Scrap Yard** – There are several wetland areas at the Atlas Scrap Yard, most notably in the northwest and northeast corners of the MRS. With the exception of the wetland area at the northwest corner, the remaining wetlands at the MRS are considered low quality and can be cleared as needed. According to Ed Wilk, the

vegetation in these low quality wetland areas will grow back. For the wetland area at the northwest corner, Shaw can remove the thick vegetation along the roadways in the MRS to access the wooded areas surrounding the sensitive wetland area.

- **Ramsdell Quarry Landfill Area 1** – This is another low quality wetland area and similar to Atlas Scrap Yard, Shaw can clear the vegetation (which is primarily invasive species) as needed.
- **Ramsdell Quarry Landfill Area 2** – There aren't many wetland concerns at this portion of the MRS and since Shaw is conducting grids instead of transects, we can bias the grid locations away from any wetland areas of concern. All other vegetation can be removed as needed.

We plan on starting our initial clearing activities this week at Atlas Scrap Yard. If you have any questions or concerns, please contact Dave Cobb at 617.589.5561 or I can be reached by cell at 617.834.5230.

David Crispo, P.E.
Project Engineer
Shaw Environmental & Infrastructure, Inc.
100 Technology Center Drive
Stoughton, MA 02072
617.589.8146 direct
617.589.2160 fax

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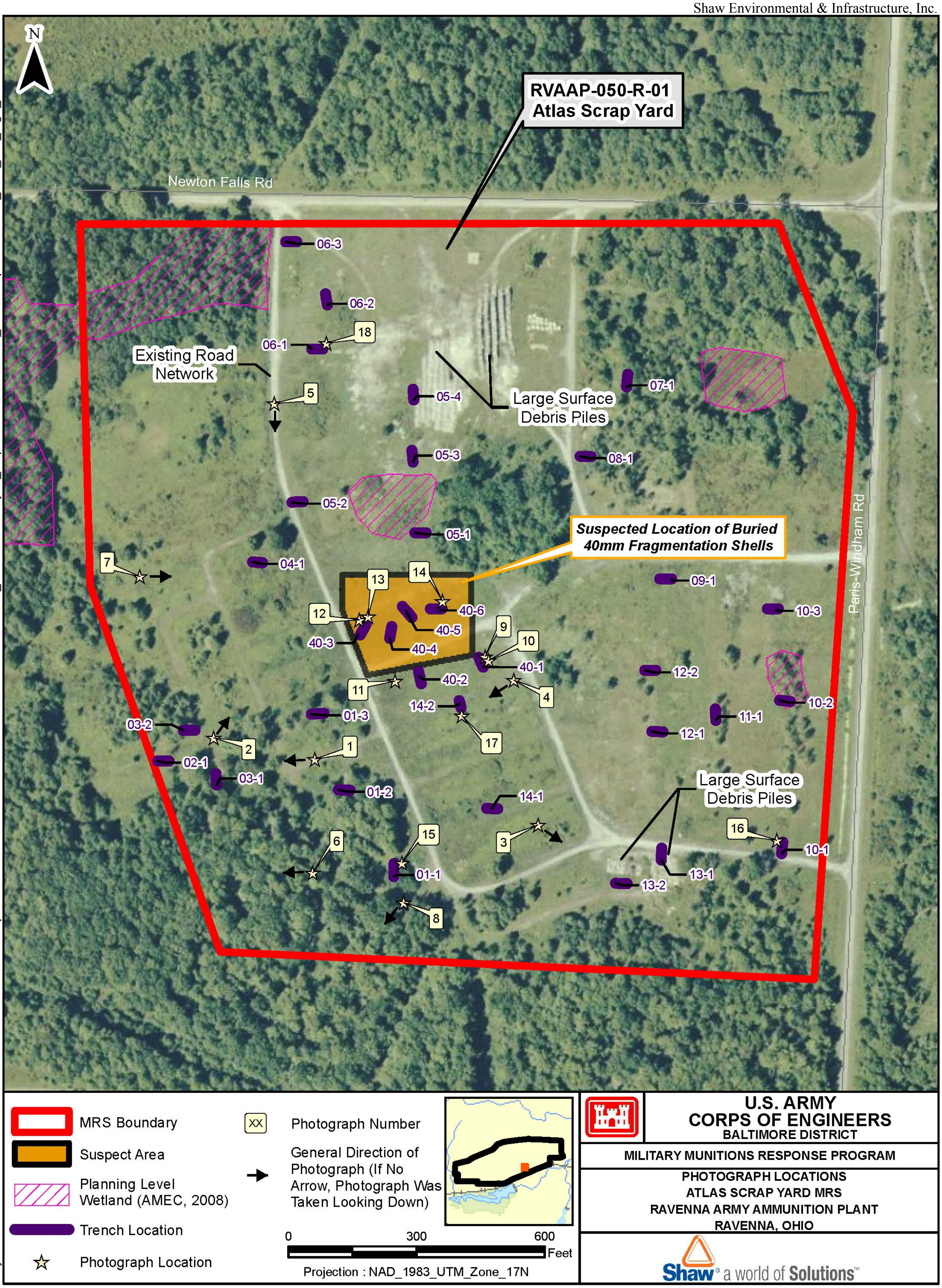
Appendix C
Photograph Documentation Log



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Project Number: 136147

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Photograph 1: Vegetation and brush clearing activities for digital geophysical mapping (DGM) transects at the Atlas Scrap Yard Munitions Response Site (MRS). Photo was taken facing west.

Photograph 2: Vegetation and brush clearing activities for DGM transects at the Atlas Scrap Yard MRS. Photo was taken facing northeast.

Photograph 3: Brush and vegetation clearing activities for DGM transects at the Atlas Scrap Yard MRS. Photo was taken facing southeast.

Photograph 4: Vegetation and brush clearing activities for DGM transects at the Atlas Scrap Yard MRS. Photo was taken facing southwest .

Photograph 5: Photo of the EM61 MK2 instrument and platform used for the DGM survey at the Atlas Scrap Yard MRS.

Photograph 6: View of a cleared transect at the southwest corner of the Atlas Scrap Yard MRS. Photo was taken facing west.

Photograph 7: A view of a DGM transect completed at the central-west portion of the Atlas Scrap Yard MRS. Photo was taken facing east.

Photograph 8: Inundated water area at the southwest corner of the Atlas Scrap Yard MRS. Photo was taken facing southwest.

Photograph 9: Native soils encountered at 48 inches below ground surface (bgs) at the bottom of Trench 40-1 within the suspected 40-millimeter (mm) burial area at the Atlas Scrap Yard MRS.

Photograph 10: Other Debris (OD) removed from Trench 40-1 located just outside of the suspected 40 mm burial area at the Atlas Scrap Yard MRS.

Photograph 11: Surface OD found at Trench 4-2 located just outside of the suspected 40 mm burial area at the Atlas Scrap Yard MRS.

Photograph 12: Native soils encountered at 54 inches bgs in Trench 40-3 at the suspected 40 mm burial area at the Atlas Scrap Yard MRS.

Photograph 13: Subsurface OD encountered at Trench 40-3 in the suspected 40 mm burial area at the Atlas Scrap Yard MRS.

Photograph 14: Ammo can lids identified as OD at Trench 40-6 within the suspected 40 mm burial area at the Atlas Scrap Yard MRS.

Photograph 15: Utility pipe encountered in Trench 1-1 at the southwest portion of the Atlas Scrap Yard MRS.

Photograph 16: Slag and metal OD consisting of posts found in Trench 10-1 at the southeast corner of the Atlas Scrap Yard MRS.

Photograph 17: Utility line encountered in Trench 14-2 at the south-central portion of the Atlas Scrap Yard MRS.

Photograph 18: A 55-gallon drum located on the ground surface at Trench 6-1 at the northeast corner of the Atlas Scrap Yard MRS.

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Appendix D
Intrusive Investigation Results

Table D-1
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
1	21.8	32.9	-0.4101	0.7382	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	2	4	LIP	N		2	2	
2	7.2	6.5	-0.3281	0.0000	Y	N	10/18/2011	3	Y	OD	N	Scrap Metal	3	1	0.5	LIP	N		1	1	
3	6.9	0.6	0.0000	0.0000	N	N											N				
4	5.4	0.9	0.0000	0.0000	N	N											N				
5	19	99.2	0.2461	-0.2461	Y	N	10/18/2011	2	Y	OD	N	Wire	2	10	1	LIP	Y	Y	8	0.1	
6	40.5	50.2	0.6562	0.1640	Y	N	10/18/2011	6	Y	OD	N	Scrap Metal	6	4	10	LIP	N		4	4	
7	18.3	24.1	0.3018	-0.3281	Y	N	10/18/2011	4	Y	OD	N	Nails	4	4	0.1	LIP	N		4	0.1	
8	10.9	22.3	0.0000	0.0000	Y	N	10/18/2011	6	Y	OD	N	Scrap Steel	6	1	1	LIP	N		0.1	9	
9	11.8	19.2	-0.4101	0.8202	Y	N	10/18/2011	1	Y	OD	N	Scrap Steel	1	1	0.1	LIP	N		6	0.75	
10	11	35.9	0.0000	0.0000	Y	N	10/18/2011	6	Y	OD	N	Scrap Steel	6	1	10	LIP	N		14	1	
11	13.8	81.2	-0.4101	0.5348	Y	N	10/18/2011	3	Y	OD	N	Scrap Steel	3	6	1	LIP	N		14	0.5	
12	15.7	31	-0.3018	0.4101	Y	N	10/18/2011	4	Y	OD	N	Nails	4	24	0.5	LIP	N		4	0.1	
13	5.2	49.5	0.3281	-0.9843	Y	N	10/18/2011	4	Y	OD	N	Wire	4	2	0.2	LIP	N		24	0.125	
14	15.9	15.9	0.1640	-0.1903	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	2	4	LIP	N		2	2	
15	7.8	35.6	-0.0558	0.7382	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	3	5	LIP	N		3	2	
16	12.1	20.8	0.0000	-0.8629	Y	N	10/18/2011	6	Y	OD	N	Scrap Metal	6	3	6	LIP	N		6	2	
17	11.8	18.2	0.2461	0.0000	Y	N	10/18/2011	4	Y	OD	N	Nails	4	3	0.1	LIP	N		4	0.1	
18	13.4	91.6	0.2461	-0.9843	Y	N	10/18/2011	6	Y	OD	N	Nails	6	75	1	LIP	N		4	0.1	
19	17.6	59.2	0.0000	-0.9843	Y	N	10/18/2011	4	Y	OD	N	Scrap Steel	4	1	8	LIP	Y	Y	14	4	
20	66.6	248	0.9843	-0.9843	Y	N	10/18/2011	36	Y	OD	N	Pipe	36	1	1	LIP	N		36	2	
21	30.6	123.9	0.0000	-0.9843	Y	N	10/18/2011	4	Y	OD	N	Nails	4	100	2	LIP	N		2	0.1	
22	53.4	81.8	0.0000	0.3281	Y	N	10/18/2011	2	Y	OD	N	Scrap Steel	2	1	2	LIP	N		8	1	
23	21.8	29.8	0.9843	0.0000	Y	N	10/18/2011	4	Y	OD	N	Nails	4	8	0.25	LIP	N		6	0.1	
24	8.4	22.2	0.3281	0.9843	Y	N	10/18/2011	2	Y	OD	N	Scrap Metal	2	2	1	LIP	N		1	1	
25	63.1	153.7	0.3281	-0.9843	Y	N	10/18/2011	4	Y	OD	N	Scrap Steel	4	3	5	LIP	N		10	0.5	
26	55.8	72	0.0000	-0.4101	Y	N	10/18/2011	2	Y	OD	N	Scrap Metal	2	1	3	LIP	Y	Y	3	2	
27	35.5	60.4	0.3281	-0.9843	Y	N	10/18/2011	2	Y	OD	N	Scrap Metal	2	1	3	LIP	N		4	3	
28	16	33.5	-0.1903	-0.9843	Y	N	10/18/2011	4	Y	OD	N	Nails	4	20	0.5	LIP	N		3	0.1	
29	11.6	11.3	0.3281	0.9843	Y	N	10/18/2011	1	Y	OD	N	Nails	1	1	0.1	LIP	Y	Y	3	0.1	
30	13.5	18	0.9843	0.0000	Y	N	10/18/2011	4	Y	OD	N	Nails	4	3	0.5	LIP	N		3	0.1	
31	12.9	46.9	-0.1640	-0.0820	Y	N	10/18/2011	18	Y	OD	N	Scrap Steel	18	4	15	LIP	N		14	1	
32	34.1	46	0.0000	-0.3018	Y	N	10/18/2011	18	Y	OD	N	Scrap Steel	18	4	15	LIP	N		14	1	
33	151.1	171.3	0.9843	0.0000	Y	N	10/18/2011	12	Y	OD	N	Scrap Steel	12	6	10	LIP	N		12	0.5	
34	279.4	1484	0.0000	0.5741	Y	N	10/18/2011	8	Y	OD	N	Rebar	8	3	30	LIP	N		120	0.5	
35	164	2456	0.6562	-0.9843	Y	Y											N				
36	11.5	15.4	0.4101	-0.2461	Y	N	10/18/2011	4	Y	OD	N	Nails	4	6	0.1	LIP	N		4	0.1	
37	132	162.2	0.1378	-0.1640	Y	N	10/18/2011	1	Y	OD	N	Wire	1	8	1	LIP	N		12	0.1	
38	121	446.7	0.2461	-0.9843	Y	N	10/18/2011	6	Y	OD	N	Scrap Steel	6	1	5	LIP	N		30	1	
39	69.4	137.9	-0.1640	-0.5348	Y	N	10/18/2011	4	Y	OD	N	Scrap Steel	4	2	4	LIP	N		12	0.75	
40	145.7	168.4	0.0000	0.0000	Y	N	10/18/2011	48	Y	OD	N	Pipe	48	1	1	LIP	Y	Y	36	2	
41	11.5	113	-0.1640	0.9843	Y	N	10/18/2011	2	Y	OD	N	Can	2	1	0.5	LIP	N		8	5	
42	42.3	91.8	0.4921	-0.1903	Y	N	10/18/2011	4	Y	OD	N	Wire	4	8	3	LIP	Y	Y	24	0.1	
43	37.3	74.4	0.3281	0.2461	Y	N	10/18/2011	2	Y	OD	N	Scrap Steel	2	1	3	LIP	N		3	3	
44	39.2	58	0.5741	0.4364	Y	N	10/18/2011	2	Y	OD	N	Wire	2	1	2	LIP	N		36	0.1	
45	12.8	14	0.0000	0.0000	Y	N	10/18/2011	2	Y	OD	N	Nails	2	1	0.1	LIP	N		4	0.1	
46	56.1	321.8	0.0000	-0.6562	Y	N	10/18/2011	6	Y	OD	N	Pipe	6	2	7	LIP	N		18	1	
47	78.6	91.5	0.0000	-0.2461	Y	N	10/18/2011	3	Y	OD	N	Scrap Metal	3	3	7	LIP	Y	Y	3	3	
48	7.1	6.4	0.0000	0.0000	Y	N	10/18/2011	2	Y	OD	N	Nails	2	1	0.1	LIP	N		3	0.1	
49	13.2	15.6	0.9843	-0.3281	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	1	5	LIP	N		8	3	
50	6.5	0.5	0.0000	0.0000	N	N											N				
51	40.4	44.1	0.0000	-0.3281	Y	N	10/18/2011	48	N								Y	Y			anomaly deeper than 48".
52	590.7	758.9	-0.1640	0.3281	Y	N	10/18/2011	6	Y	OD	N	Scrap Steel	6	1	40	LIP	N		18	8	
53	9.8	18.6	0.0558	0.3018	Y	N	10/18/2011	4	Y	OD	N	Nails	4	6	0.1	LIP	N		4	0.1	
54	50.5	68	0.3281	0.2067	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	1	5	LIP	N		5	4	
55	8.2	12	0.3281	-0.3281	Y	N	10/18/2011	2	Y	OD	N	Scrap Metal	2	1	1	LIP	N		1	1	
56	124.4	361.8	0.7644	0.7382	Y	N	10/18/2011	6	Y	OD	N	Scrap Metal	6	1	15	LIP	N		12	8	
57	25.8	246.5	0.3281	-0.9843	Y	N	10/18/2011	2	Y	OD	N	Fence Post	2	1	3	LIP	N		24	4	
58	34.8	72.1	-0.9022	-0.5741	Y	N	10/18/2011	4	Y	OD	N	Rebar	4	1	10	LIP	N		60	5	
59	17.8	58.3	0.2461	0.1083	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	3	5	LIP	N		2	2	
60	21.4	36.4	0.5184	-0.5348	Y	N	10/18/2011	4	Y	OD	N	Bolt	4	1	2	LIP	N		5	2	
61	31.4	36.4	-0.1640	0.1903	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		8	3	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
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Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
62	45	82.6	-0.1903	0.2461	Y	N	10/18/2011	3	Y	OD	N	Scrap Steel	3	1	1	LIP	N		6	0.75	
63	393.1	727.2	0.3281	0.2461	Y	N	10/18/2011	8	Y	OD	N	Pipe	8	1	15	LIP	N		24	8	
64	10.3	23.9	0.2461	0.9022	Y	N	10/18/2011	6	Y	OD	N	Scrap Metal	6	2	6	LIP	N		3	3	
65	31.2	47.8	0.0000	0.1640	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	3	6	LIP	N		2	2	
66	58.9	74.5	-0.1378	-0.1378	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	3	6	LIP	N		3	2	
67	21.3	58.1	0.0000	0.0000	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	3	5	LIP	N		2	2	
68	21.5	63.2	0.0000	-0.9843	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	1	8	LIP	Y	Y	4	3	
69	136.2	205	0.0000	-0.1640	Y	N	10/18/2011	4	Y	OD	N	Nails	4	50	8	LIP	N		4	0.1	
70	109.4	158.4	0.0000	-0.2461	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	2	8	LIP	N		8	4	
71	49.3	94.2	0.3018	-0.4101	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	Y	Y	36	36	
72	20.5	36.6	0.0000	-0.6562	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
73	11	70.6	-0.7644	0.7644	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
74	8.7	81.2	-0.4101	-0.9843	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
75	23.4	28.3	0.1640	0.1640	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	2	2	LIP	N		1	1	
76	360.4	497.6	0.4101	0.0000	Y	N	10/18/2011	3	Y	OD	N	Scrap Steel	3	1	15	LIP	Y	Y	48	4	
77	12.7	18.1	0.3839	0.1903	Y	N	10/18/2011	4	Y	OD	N	Bolt	4	1	0.5	LIP	N		6	0.25	
78	52.2	90.8	0.3281	-0.1378	Y	N	10/18/2011	2	Y	OD	N	Cable	2	1	3	LIP	N		36	0.25	
79	5.4	4.6	0.9843	0.4921	Y	N	10/18/2011	2	Y	OD	N	Nails	2	1	0.1	LIP	N		3	0.1	
80	12.2	25.4	0.1903	0.3281	Y	N	10/18/2011	4	Y	OD	N	Nails	4	6	1	LIP	N		5	0.1	
81	16.4	18.3	0.0000	0.0000	Y	N	10/18/2011	2	Y	OD	N	Bolt	2	1	1	LIP	N		4	0.35	
82	85.9	109.2	0.8202	0.0000	Y	N	10/18/2011	1	Y	OD	N	Can	1	1	1	LIP	N		8	6	
83	7.8	42.9	0.0820	0.6562	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	1	10	LIP	N		10	5	
84	43.4	42.7	0.8202	-0.2461	Y	N	10/18/2011	36	Y	OD	N	Pipe	36	1	1	LIP	N		36	8	
85	1039.2	7349	0.6562	0.0000	Y	N	10/18/2011	1	Y	OD	N	Pipe	1	1	1	LIP	N		36	8	
86	39.7	96.5	0.5741	-0.6299	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
87	45.4	170.2	0.5741	0.6562	Y	N	10/18/2011	6	Y	OD	N	Scrap Metal	6	1	15	LIP	N		10	10	
88	37	48.4	0.0558	0.3281	Y	N	10/18/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	4	
89	52.2	68.4	0.4101	-0.5348	Y	N	10/18/2011	3	Y	OD	N	Scrap Steel	3	1	3	LIP	N		10	0.25	
90	23.8	98	0.3281	-0.9843	Y	N	10/18/2011	2	Y	OD	N	Scrap Steel	2	3	0.5	LIP	N		10	0.25	
91	14.4	43.6	0.0000	-0.9843	Y	N	10/18/2011	4	Y	OD	N	Nails	4	12	2	LIP	N		6	0.1	
92	18.9	26.2	0.0820	-0.2067	Y	N	10/18/2011	2	Y	OD	N	Nails	2	12	2	LIP	N		3	0.1	
93	12.1	12	0.0000	-0.2461	Y	N	10/18/2011	3	Y	OD	N	Bolt	3	1	0.2	LIP	N		8	0.2	
94	23.3	32.9	0.1903	0.1903	Y	N	10/18/2011	3	Y	OD	N	Nails	3	5	0.5	LIP	Y	Y	9	0.125	
95	31.9	82.4	0.0000	-0.9022	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
96	31.9	40.9	0.0000	-0.5348	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	3	4	LIP	N		2	2	
97	42.8	58	0.1903	-0.1378	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
98	5.9	0.5	0.0000	0.0000	N	N											Y	Y			
99	29.4	57.8	0.1903	-0.1378	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
100	14.6	30.1	0.0000	0.6299	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
101	14.9	35.5	0.0820	0.5348	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
102	5.6	0.9	0.0000	0.0000	N	N											N				
103	7.7	44.2	-0.3281	-0.9843	Y	N	10/18/2011	6	Y	OD	N	Scrap Metal	6	3	4	LIP	N		2	1	
104	67.6	122.3	0.1640	-0.2461	Y	N	10/18/2011	6	Y	OD	N	Scrap Metal	6	1	5	LIP	N		36	36	
105	40.1	46.2	-0.3281	0.0000	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
106	32.2	72.6	0.1640	-0.4364	Y	N	10/18/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		36	36	
107	68.8	74.1	0.4921	-0.4101	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	8	6	LIP	N		36	36	
108	74.8	97.3	0.3281	-0.9843	Y	N	10/18/2011	12	Y	OD	N	Can	12	1	3	LIP	N		12	8	
109	302.7	2185.8	0.0000	-0.9843	Y	N	10/18/2011	12	Y	OD	N	Other	12	1	100	LIP	N		36	36	
110	14.2	30.9	0.3281	0.3281	Y	N	10/18/2011	2	Y	OD	N	Wire	2	1	1	LIP	Y	Y	12	0.1	
111	3705.8	4295	0.1903	-0.1903	Y	N	10/18/2011	12	Y	OD	N	Other	12	1	1	LIP	N		36	36	
112	7.2	0.5	0.0000	0.0000	N	N											N				
113	47.6	53.6	-0.9843	0.0000	Y	N	10/18/2011	48	N								Y	Y			anomaly deeper than 48. suspect it is a fire main due to the vicinity of 2 fire hydrants
114	90.3	873	-0.1640	0.9843	Y	N	10/18/2011	36	Y	OD	N	Pipe	36	1	50	LIP	N		36	18	
115	14.3	158.9	0.5741	-0.9843	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	1	15	LIP	N		10	8	
116	9.8	17.6	0.0000	-0.4101	Y	N	10/18/2011	6	Y	OD	N	Scrap Metal	6	1	4	LIP	N		2	2	
117	15.1	283	0.9843	0.9843	Y	N	10/18/2011	1	Y	OD	N	Rebar	1	1	3	LIP	N		30	0.5	
118	20.8	20.2	0.0000	0.4921	Y	N	10/18/2011	3	Y	OD	N	Nails	3	3	0.1	LIP	Y	Y	3	0.1	
119	7.8	28	0.8202	0.6299	Y	N	10/18/2011	1	Y	OD	N	Wire	1	1	1	LIP	N		8	0.1	

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120	5.3	1.4	0.0000	0.0000	N	N											N				
121	64.4	2181	-0.1640	0.9843	Y	N	10/17/2011	22	Y	OD	N	Scrap Steel	22	1	200	LIP	N		33	24	
122	52.7	68.9	-0.1640	-0.2461	Y	N	10/17/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	N		5	2	
123	5.2	5.2	0.2067	0.0000	Y	N	10/17/2011	1	Y	OD	N	Nails	1	1	0.1	LIP	N		2	0.1	
124	263.7	335.1	-0.1640	0.2461	Y	N	10/17/2011	3	Y	OD	N	Scrap Metal	3	1	15	LIP	N		8	7	
125	95.1	124.2	-0.0820	-0.1640	Y	N	10/17/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		5	4	
126	25.8	95.1	-0.1640	0.7382	Y	N	10/17/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		5	4	
127	71.3	141.6	-0.0820	-0.8465	Y	N	10/17/2011	4	Y	OD	N	Scrap Metal	4	1	7	LIP	N		6	6	
128	16.3	22.6	-0.2461	0.0000	Y	N	10/17/2011	3	Y	OD	N	Scrap Metal	3	1	0.5	LIP	N		2	2	
129	42.7	55.8	-0.2461	-0.5184	Y	N	10/17/2011	5	Y	OD	N	Scrap Metal	5	2	1	LIP	N		3	3	
130	38.3	45	-0.3839	-0.3839	Y	N	10/17/2011	3	Y	OD	N	Scrap Metal	3	1	1	LIP	Y	Y	4	3	
131	64.6	82.1	-0.2461	-0.1640	Y	N	10/17/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	N		7	3	
132	23.1	34.9	-0.4921	-0.4921	Y	N	10/17/2011	5	Y	OD	N	Scrap Metal	5	1	2	LIP	N		3	3	
133	21.9	67.8	-0.9843	0.3281	Y	N	10/17/2011	9	Y	OD	N	Scrap Metal	9	1	4	LIP	N		6	5	
134	33.8	52.2	-0.9843	-0.2461	Y	N	10/17/2011	48	Y	OD	N	Pipe	48	1	55	LIP	Y	Y	57	3	
135	18.2	46.4	0.0000	0.3281	Y	N	10/17/2011	3	Y	OD	N	Scrap Metal	3	2	1	LIP	N		3	3	
136	180.5	355	0.0000	0.5741	Y	N	10/17/2011	4	Y	OD	N	Pipe	4	1	6	LIP	N		34	1.5	
137	9.7	9.5	0.0000	0.1640	Y	N	10/17/2011	5	Y	OD	N	Wire	5	1	0.15	LIP	N		9	0.1	
138	54.8	77.8	0.1640	0.2723	Y	N	10/17/2011	8	Y	OD	N	Nails	8	34	2	LIP	N		4	0.01	
139	52.9	75.2	-0.3281	0.0000	Y	N	10/17/2011	4	Y	OD	N	Bolt	4	1	3	LIP	N		8	1	
140	41.8	76.5	-0.3839	-0.1640	Y	N	10/17/2011	5	Y	OD	N	Bolt	5	1	3	LIP	N		8	1	
141	38.7	48	-0.4921	0.0000	Y	N	10/17/2011	2	Y	OD	N	Nails	2	2	0.5	LIP	N		4	0.01	
142	40.2	56.6	-0.9022	0.0000	Y	N	10/17/2011	1	Y	OD	N	Nails	1	2	0.5	LIP	N		4	0.01	
143	32.4	72.3	-0.4659	0.7644	Y	N	10/17/2011	4	Y	OD	N	Scrap Metal	4	4	3	LIP	Y	Y	2	2	
144	5.4	0.4	0.0000	0.0000	N	N											Y	Y			
145	16.3	161	0.9843	0.3281	Y	N	10/18/2011	0	N								N				unable to dig. item 24 inches underwater
146	7.7	0.2	0.0000	0.0000	N	N											N				
147	13.5	112.2	0.4921	0.9843	Y	N	10/18/2011	0	Y	OD	N	Wire	0	1	0.25	LIP	N		48	0.1	
148	90.8	332	0.9843	0.9843	Y	Y											N				
149	186.4	8518	0.9843	0.9843	Y	Y											N				
150	291.1	1828.5	-0.5741	-0.9843	Y	N	10/18/2011	0	Y	OD	N	Can	0	13	1	LIP	Y	Y	12	12	
151	81.3	95.1	-0.9843	0.0000	Y	N	10/19/2011	3	Y	OD	N	Nails	3	24	0.5	LIP	N		4	0.1	
152	1366.6	4762	-0.6562	-0.9843	Y	Y											N				
153	9.4	23.9	-0.6562	0.0000	Y	N	10/18/2011	2	Y	OD	N	Bolt	2	1	0.25	LIP	N		8	0.25	
154	27.4	61	0.3281	-0.9843	Y	N	10/18/2011	6	Y	OD	N	Rebar	6	1	2	LIP	N		13	0.5	
155	79.4	92.5	-0.0820	0.8202	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	1	5	LIP	N		4	3	
156	82.2	163.7	-0.9022	0.3281	Y	N	10/18/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
157	5.2	0.9	0.0000	0.0000	N	N											N				
158	89.2	274.6	0.7382	-0.4101	Y	N	10/18/2011	3	Y	OD	N	Rebar	3	1	75	LIP	N		240	1	
159	241.8	333	0.1640	0.2461	Y	N	10/19/2011	12	Y	OD	N	Scrap Metal	12	10	15	LIP	Y	Y	3	3	
160	166	379	-0.2461	0.9843	Y	N	10/18/2011	2	Y	OD	N	Rebar	2	1	70	LIP	N		240	0.5	
161	6.3	1.1	0.0000	0.0000	N	N											N				
162	6	1.1	0.0000	0.0000	N	N											Y	Y			
163	32.8	67.6	0.0000	0.0000	Y	N	10/17/2011	3	Y	OD	N	Scrap Metal	3	1	2	LIP	N		5	4	
164	44.9	90.3	0.9022	-0.1640	Y	N	10/17/2011	4	Y	OD	N	Scrap Metal	4	2	3	LIP	N		5	4	
165	20.3	30.8	0.4101	0.2461	Y	N	10/17/2011	5	Y	OD	N	Scrap Metal	5	1	1	LIP	N		3	11	
166	16.8	40.1	-0.1903	0.6562	Y	N	10/17/2011	5	Y	OD	N	Bolt	5	1	1	LIP	N		6	0.75	
167	144.7	240.3	0.4101	-0.7382	Y	N	10/17/2011	48	N	OD	N	Scrap Metal	8	3	4	LIP	Y	Y	6	4	
168	13	1240	-0.9843	0.9843	Y	N	10/17/2011	6	Y	OD	N	Pipe	6	1	10	LIP	N		48	1	
169	64.3	138.7	-0.0558	0.3839	Y	N	10/17/2011	3	Y	OD	N	Scrap Metal	3	3	6	LIP	N		7	5	
170	76.2	242.3	-0.5741	0.5184	Y	N	10/17/2011	7	Y	OD	N	Nails	7	75	5	LIP	N		4	0.01	
171	79.4	120.5	0.1903	0.1640	Y	N	10/17/2011	4	Y	OD	N	Scrap Steel	4	1	4	LIP	N		8	1	
172	290.9	347.8	0.4921	-0.2067	Y	N	10/17/2011	3	Y	OD	N	Scrap Steel	3	1	4	LIP	N		42	1	
173	131.4	303.2	0.0000	0.1378	Y	N	10/17/2011	3	Y	OD	N	Scrap Steel	3	3	12	LIP	N		8	3	
174	20.4	37	-0.6562	0.0000	Y	N	10/17/2011	2	Y	OD	N	Scrap Metal	2	1	1	LIP	N		3	1	
175	20.3	30.4	0.0558	0.4101	Y	N	10/17/2011	3	Y	OD	N	Scrap Metal	3	1	2	LIP	N		2	1	
176	26.2	100.8	0.0820	0.5741	Y	N	10/17/2011	2	Y	OD	N	Scrap Metal	2	2	6	LIP	N		8	3	
177	24.2	88	0.0000	0.2461	Y	N	10/17/2011	4	Y	OD	N	Scrap Metal	4	2	3	LIP	N		6	1	
178	35.1	79.2	0.1903	-0.1903	Y	N	10/17/2011	6	Y	OD	N	Scrap Metal	6	3	2	LIP	N		5	3	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
179	9	24.6	0.0000	0.9843	Y	N	10/17/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	Y	Y	3	1	
180	10.5	12.4	-0.1378	-0.1640	Y	N	10/17/2011	3	Y	OD	N	Scrap Metal	3	1	0.5	LIP	N		1	1	
181	12.6	22.9	0.4921	-0.9843	Y	N	10/17/2011	7	Y	OD	N	Wire	7	2	1	LIP	Y	Y	7	0.1	
182	32.9	94.1	0.6562	0.6562	Y	N	10/17/2011	3	Y	OD	N	Scrap Metal	3	1	8	LIP	N		7	5	
183	23.8	50.1	0.1903	0.5184	Y	N	10/17/2011	5	Y	OD	N	Scrap Metal	5	2	3	LIP	N		5	2	
184	8	9.4	0.0000	-0.3839	Y	N	10/17/2011	4	Y	OD	N	Nails	4	2	0.25	LIP	N		3	0.1	
185	25.2	34.6	-0.2067	0.1640	Y	N	10/17/2011	7	Y	OD	N	Scrap Metal	7	1	2	LIP	N		3	3	
186	14.1	14.2	0.0000	0.4921	Y	N	10/17/2011	3	Y	OD	N	Wire	3	1	1	LIP	Y	Y	5	0.2	
187	14.2	69.2	0.0000	0.9843	Y	N	10/17/2011	6	Y	OD	N	Pipe	6	1	3	LIP	N		8	1.5	
188	16.6	56	0.9022	0.1640	Y	N	10/17/2011	8	Y	OD	N	Scrap Metal	8	1	2	LIP	N		5	5	
189	46.2	63.5	-0.9022	0.0558	Y	N	10/17/2011	7	Y	OD	N	Scrap Metal	7	1	3	LIP	N		6	5	
190	23.3	169.9	0.2067	0.6299	Y	N	10/17/2011	7	Y	OD	N	Scrap Metal	7	2	5	LIP	N		7	6	
191	36.4	124.4	-0.3839	-0.7644	Y	N	10/17/2011	2	Y	OD	N	Scrap Metal	2	1	3	LIP	N		4	4	
192	16.2	56	-0.5741	-0.3281	Y	N	10/17/2011	4	Y	OD	N	Scrap Metal	4	1	5	LIP	Y	Y	8	4	
193	11.7	12	-0.4921	-0.4921	Y	N	10/17/2011	1	Y	OD	N	Nails	1	2	0.5	LIP	N		4	0.01	
194	37.6	72.6	-0.3839	0.0000	Y	N	10/17/2011	6	Y	OD	N	Scrap Metal	6	2	5	LIP	N		3	3	
195	18.1	32.4	-0.1640	0.4101	Y	N	10/17/2011	7	Y	OD	N	Scrap Metal	7	1	2	LIP	N		3	3	
196	26.7	31.5	-0.0558	-0.4101	Y	N	10/17/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		4	1	
197	29.2	54.3	0.1640	0.0000	Y	N	10/17/2011	9	Y	OD	N	Scrap Metal	9	2	2	LIP	N		5	4	
198	16.2	715.2	-0.1903	0.7382	Y	N	10/17/2011	14	Y	OD	N	Pipe	14	1	40	LIP	N		36	3	
199	95.5	165	-0.3839	0.0820	Y	N	10/17/2011	1	Y	OD	N	Scrap Steel	1	4	6	LIP	Y	Y	5	5	
200	71.6	112.9	-0.5741	-0.1378	Y	N	10/17/2011	4	Y	OD	N	Rebar	4	1	2	LIP	N		16	0.75	
201	45.1	78.2	-0.4921	0.0000	Y	N	10/17/2011	3	Y	OD	N	Scrap Steel	3	1	2	LIP	N		8	2	
202	48.8	2530	-0.0820	-0.3839	Y	N	10/17/2011	1	Y	OD	N	Rebar	1	1	5	LIP	N		42	0.38	
203	26.9	89	-0.2461	-0.1903	Y	N	10/17/2011	7	Y	OD	N	Scrap Metal	7	2	6	LIP	N		5	5	
204	39.3	139.2	-0.1378	-0.3018	Y	N	10/17/2011	6	Y	OD	N	Scrap Metal	6	1	5	LIP	N		7	5	
205	61.3	72.8	-0.3281	-0.6299	Y	N	10/17/2011	5	Y	OD	N	Scrap Metal	5	3	3	LIP	N		4	3	
206	40.8	66.5	0.3281	-0.1378	Y	N	10/17/2011	5	Y	OD	N	Scrap Metal	5	5	4	LIP	N		3	1	
207	33.1	66.3	-0.1640	-0.2461	Y	N	10/17/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		6	3	
208	122.2	136	0.5741	0.3281	Y	N	10/17/2011	2	Y	OD	N	Nails	2	27	3	LIP	N		4	0.01	
209	120	734.5	0.1640	-0.9843	Y	N	10/17/2011	2	Y	OD	N	Pipe	2	1	10	LIP	N		24	2	
210	11.9	13.1	0.4921	0.3839	Y	N	10/17/2011	3	Y	OD	N	Nails	3	2	0.5	LIP	Y	Y	2	0.01	
211	109.1	186	0.1640	-0.3281	Y	Y											N				
212	16	11.8	0.2461	0.0000	Y	N	10/17/2011	2	Y	OD	N	Nails	2	2	5	LIP	Y	Y	2	0.01	
213	17.3	30.9	-0.8202	0.1640	Y	N	10/17/2011	1	Y	OD	N	Pipe	1	1	1	LIP	N		4	0.75	
214	39	55	0.2461	0.0000	Y	N	10/17/2011	6	Y	OD	N	Bolt	6	1	1	LIP	N		6	1	
215	39.7	524.1	0.0000	-0.9843	Y	N	10/17/2011	8	Y	OD	N	Pipe	8	1	18	LIP	N		96	1.25	
216	32.6	68.5	0.8202	0.8202	Y	N	10/17/2011	4	Y	OD	N	Scrap Metal	4	2	2	LIP	N		3	2	
217	29.5	40.4	0.1903	0.3543	Y	N	10/17/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		3	1	
218	69.7	109	0.2067	-0.9843	Y	N	10/17/2011	5	Y	OD	N	Scrap Metal	5	3	7	LIP	N		5	4	
219	20.5	64	0.7119	-0.6562	Y	N	10/17/2011	2	Y	OD	N	Scrap Metal	2	3	2	LIP	N		5	2	
220	18.6	27	0.4921	-0.0820	Y	N	10/17/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		2	1	
221	13.5	15.7	-0.4364	0.8202	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
222	13.2	10.5	-0.6299	0.0000	Y	N	10/4/2011	4	Y	OD	N	Scrap Steel	4	3	1	LIP	N		0.1	8	
223	41.8	57	-0.1640	-0.3281	Y	N	10/19/2011	4	Y	OD	N	Scrap Metal	4	3	6	LIP	N		2	2	
224	69.6	89.2	0.0000	0.0000	Y	N	10/19/2011	4	Y	OD	N	Scrap Metal	4	3	1	LIP	N		120	0.1	
225	56.4	93.5	0.1640	-0.1640	Y	N	10/19/2011	8	Y	OD	N	Scrap Metal	8	5	10	LIP	N		2	2	
226	43.5	51	0.0000	0.0000	Y	N	10/19/2011	4	Y	OD	N	Scrap Metal	4	4	8	LIP	N		2	2	
227	27.7	31.5	0.0000	-0.6562	Y	N	10/19/2011	4	Y	OD	N	Bolt	4	1	1.5	LIP	N		8	0.25	
228	40.2	135.3	0.0000	0.8202	Y	N	10/19/2011	6	Y	OD	N	Cable	6	1	2	LIP	N		36	0.25	
229	96.7	1166.9	-0.0820	0.6562	Y	N	10/19/2011	6	Y	OD	N	Scrap Steel	6	1	1	LIP	Y	Y	0.2	18	
230	115.9	198.4	-0.2461	-0.2461	Y	N	10/19/2011	6	Y	OD	N	Scrap Steel	4	1	0.5	LIP	Y	Y	12	8	
230	115.9	198.4	-0.2461	-0.2461	Y	N	10/19/2011	6	Y	OD		Scrap Steel	6	1	3	LIP	Y	Y	12	0.5	
231	64.4	66.5	0.3281	0.0000	Y	N	10/19/2011	0	N								N				anomaly located under 6 inches of water
232	19.4	36.4	-0.0820	-0.2461	Y	N	10/19/2011	1	Y	OD	N	Scrap Metal	1	1	1	LIP	N		2	1	
233	23.6	25.6	-0.1640	0.0000	Y	N	10/19/2011	3	Y	OD	N	Scrap Metal	3	1	2	LIP	N		3	2	
234	56.3	54	0.0000	0.1640	Y	N	10/19/2011	48	N								Y	Y			anomaly deeper than 48" . suspect a fire main due to vicinity of fire hydrant

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
235	13.3	229	-0.6562	0.9843	Y	N	10/19/2011	6	Y	OD	N	Scrap Metal	6	3	8	LIP	Y	Y	8	6	
236	30.6	38.5	0.3281	-0.0820	Y	N	10/19/2011	4	Y	OD	N	Scrap Metal	4	2	5	LIP	N		3	2	
237	62.7	116.2	0.1378	0.3018	Y	N	10/19/2011	4	Y	OD	N	Scrap Metal	4	6	8	LIP	N		2	2	
238	61.7	382	0.2461	-0.3281	Y	N	10/19/2011	2	Y	OD	N	Scrap Steel	2	1	3	LIP	N		18	1	
239	11.8	21.7	0.1640	0.6562	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	4	8	LIP	N		3	2	
240	80.4	100.4	0.4921	-0.4659	Y	N	10/4/2011	24	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	8	
240	80.4	100.4	0.4921	-0.4659	Y	N	10/4/2011	24	Y	OD	N	Pipe	24	1	15	LIP	N		240	0.75	
241	64.7	95.6	0.1640	-0.1640	Y	N	10/19/2011	2	Y	OD	N	Pipe	2	1	1	LIP	N		6	1	
242	41.3	68	0.1640	0.4364	Y	N	10/4/2011	2	Y	OD	N	Scrap Steel	2	1	1.5	LIP	Y	Y	4	3	
243	21.5	299.4	0.0000	-0.5348	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	10	LIP	N		8	6	
244	59.1	71.4	0.2723	0.6004	Y	N	10/4/2011	6	Y	OD	N	Scrap Metal	6	10	40	LIP	N		3	3	
245	28.5	46	0.2723	0.0000	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
246	29.6	42	0.2461	0.6562	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
247	20.1	16.4	0.3281	0.2723	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	Y	Y	36	36	
248	39.8	54.2	0.0000	0.0000	Y	N	10/17/2011	2	Y	OD	N	Scrap Metal	2	1	2	LIP	N		5	1	
249	4958.7	6085	-0.8629	-0.3839	Y	N	10/17/2011	9	Y	OD	N	Scrap Steel	9	1	400	LIP	N		72	36	
250	22.1	30.6	-0.1083	0.2461	Y	N	10/17/2011	3	Y	OD	N	Scrap Metal	3	2	2	LIP	N		2	2	
251	11.9	16.9	0.3281	0.4921	Y	N	10/17/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	N		3	1	
252	9.9	44.3	0.3018	0.7644	Y	N	10/17/2011	6	Y	OD	N	Scrap Metal	6	2	3	LIP	N		5	2	
253	36.4	69.9	0.0820	-0.4101	Y	N	10/17/2011	3	Y	OD	N	Scrap Metal	3	2	7	LIP	N		9	2	
254	5.9	1	0.0000	0.0000	N	N											N				
255	6.7	1.1	0.0000	0.0000	N	N											N				
256	65.7	114.5	0.4921	-0.1903	Y	N	10/17/2011	6	Y	OD	N	Scrap Metal	6	1	12	LIP	N		8	8	
257	46.3	81.6	0.2461	-0.1083	Y	N	10/17/2011	6	Y	OD	N	Scrap Metal	6	2	3	LIP	N		6	5	
258	4.2	26.9	0.3281	0.0558	Y	N	10/17/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		2	2	
259	28	46	0.0000	0.0000	Y	N	10/4/2011	4	Y	OD	N	Pipe	4	1	2	LIP	N		8	0.5	
260	17.7	24.5	0.0000	0.0000	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
261	24.8	59.3	-0.1640	-0.3675	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
262	10.9	31.4	0.0000	0.6562	Y	N	10/4/2011	4	Y	OD	N	Scrap Steel	4	2	0.4	LIP	Y	Y	0.1	8	
263	33.4	47.5	0.0000	0.0000	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
264	72.1	119	0.1903	0.1640	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
265	9.3	15.3	-0.2461	0.0000	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		2	2	
266	9.9	31.7	0.0000	0.1640	Y	N	10/4/2011	4	Y	OD	N	Other	4	1	1	LIP	N		36	36	
267	67.8	80	-0.4364	0.1903	Y	N	10/4/2011	4	Y	OD	N	Scrap Steel	4	1	6	LIP	N		8	8	
268	8.2	34	0.4364	0.0000	Y	N	10/4/2011	4	Y	OD	N	Other	4	1	1	LIP	N		36	36	
269	5.9	45	0.2461	-0.3675	Y	N	10/4/2011	6	Y	OD	N	Other	6	1	1	LIP	N		36	24	
270	30.2	56.2	0.1640	0.1083	Y	N	10/4/2011	4	Y	OD	N	Other	4	1	1	LIP	N		36	36	
271	16.3	36.4	0.0000	0.0000	Y	N	10/4/2011	3	Y	OD	N	Scrap Metal	3	1	1	LIP	N		36	36	
272	15.8	46.4	0.0000	0.0000	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
273	13.5	76	0.1640	0.4921	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	Y	Y	36	36	
274	17	49.5	0.2461	0.3281	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
275	11.1	58.2	0.0000	0.0000	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
276	37.3	82.9	0.0000	0.0000	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
277	9.3	42.9	0.0000	-0.3281	Y	N	10/4/2011	4	Y	OD	N	Other	4	1	1	LIP	N		36	36	
278	127	189	0.0000	0.0000	Y	N	10/4/2011	2	Y	OD	N	Rebar	2	1	3	LIP	N		48	0.5	
279	47.4	82.4	0.0820	0.2133	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
280	11.1	39	0.0000	0.2461	Y	N	10/4/2011	4	Y	OD	N	Other	4	1	1	LIP	N		36	36	
281	190.8	2809	0.1640	-0.7382	Y	N	10/4/2011	12	Y	OD	N	Scrap Steel	12	1	15	LIP	N		24	12	
282	19.4	44.6	0.2723	0.0000	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
283	7	11115	-0.6562	0.9843	Y	N	10/4/2011	3	Y	OD		Scrap Steel	3	1	75	LIP	Y	Y	48	48	
284	8.2	30.1	0.0000	-0.4364	Y	N	10/4/2011	4	Y	OD	N	Scrap Steel	4	2	0.4	LIP	N		0.1	8	
285	107.5	224.2	0.1640	-0.4364	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
286	11	44.4	0.3281	0.0000	Y	N	10/4/2011	4	Y	OD	N	Scrap Steel	4	1	1	LIP	N		0.1	8	
287	61.9	218.5	0.7382	-0.9843	Y	N	10/4/2011	4	Y	OD	N	Nails	4	12	0.5	LIP	N		3	0.1	
288	33.8	76	0.3281	0.9843	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
289	10.1	58.7	0.0000	0.2461	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
290	51	82.3	0.0000	0.0000	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
291	23	58	0.0000	0.0000	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
292	20.4	54	0.0394	-0.4101	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
293	13.4	68.9	0.1640	-0.3281	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
294	18.8	64.2	-0.1378	-0.9843	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
295	33.3	71.2	-0.1903	-0.1083	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
296	37.7	91	-0.1083	0.1903	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
297	17.8	41.4	0.2067	-0.3675	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
298	15.1	45.7	-0.3018	-0.5348	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
299	6.1	30.4	-0.3018	-0.3281	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	Y	Y	36	36	
300	76.2	92	-0.7382	0.0000	Y	N	10/19/2011	4	Y	OD	N	Bolt	4	1	2	LIP	Y	Y	8	0.5	
301	154.4	82.1	0.5741	0.1640	Y	N	10/19/2011	4	Y	OD	N	Scrap Steel	4	1	5	LIP	N		8	1	
302	37.7	60.6	-0.6562	0.9843	Y	N	10/19/2011	6	Y	OD	N	Scrap Metal	6	4	10	LIP	N		6	4	
303	82.2	84.8	-0.9843	-0.1640	Y	N	10/19/2011	2	Y	OD	N	Other	2	1	15	LIP	N		8	8	
304	58.9	125.3	0.1640	0.3281	Y	N	10/19/2011	4	Y	OD	N	Scrap Metal	4	1	8	LIP	N		6	6	
305	198.4	290.3	-0.9843	0.3281	Y	N	10/19/2011	4	Y	OD	N	Other	4	1	75	LIP	N		36	12	
306	22.9	26.8	0.2461	0.7382	Y	N	10/19/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	Y	Y	2	2	
307	48.6	54	-0.9843	0.1640	Y	N	10/19/2011	12	Y	OD	N	Pipe	12	1	3	LIP	N		8	2	
308	6.3	0.6	0.0000	0.0000	N	N											N				
309	5.6	0.2	0.0000	0.0000	N	N											N				
310	51.8	51.9	-0.9843	-0.2461	Y	N	10/19/2011	48	N								Y	Y			anomaly deeper than 48" . suspect a fire main due to vicinity of fire hydrant.
311	53	62.4	0.9843	0.4921	Y	N	10/19/2011	3	Y	OD	N	Scrap Metal	3	1	5	LIP	N		6	5	
312	34.2	68	0.9843	-0.1640	Y	N	10/19/2011	4	Y	OD	N	Bolt	4	1	0.75	LIP	N		8	0.25	
313	81.2	105.9	0.9843	0.0000	Y	N	10/19/2011	3	Y	OD	N	Cable	3	1	2	LIP	N		24	0.5	
314	10.8	14.6	-0.9843	-0.3281	Y	N	10/19/2011	6	Y	OD	N	Pipe	6	1	0.5	LIP	N		3	1	
315	96.4	458	0.6562	0.4921	Y	N	10/19/2011	8	Y	OD	N	Scrap Steel	8	1	20	LIP	N		12	12	
316	5.8	38	0.1903	0.1706	Y	N	10/4/2011	5	Y	OD	N	Wire	5	1	0.5	LIP	N		18	0.5	
317	133.8	1316	0.3281	-0.8202	Y	N	10/19/2011	12	Y	OD	N	Pipe	12	1	20	LIP	N		8	12	
318	46.8	197	-0.4364	0.5184	Y	N	10/4/2011	11	Y	OD	N	Nails	11	500	4	LIP	N		4	0.1	
319	10.6	37	-0.3281	-0.3281	Y	N	10/4/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		2	4	
320	193.9	266	0.0000	-0.3281	Y	N	10/19/2011	2	Y	OD	N	Wire	2	3	4	LIP	N		18	18	
321	23.2	45.9	-0.3018	0.5184	Y	N	10/4/2011	7	Y	OD	N	Scrap Metal	7	2	1	LIP	N		3	5	
322	41.2	57.4	-0.3543	0.0000	Y	N	10/4/2011	9	Y	OD	N	Scrap Metal	9	4	3	LIP	N		5	9	
323	42.3	58.6	0.3281	-0.1640	Y	N	10/19/2011	4	Y	OD	N	Pipe	4	1	2	LIP	N		1	6	
324	42.2	182	0.0000	0.4921	Y	N	10/19/2011	18	Y	OD	N	Pipe	18	1	10	LIP	N		24	6	
325	84.4	608	-0.3281	0.7644	Y	N	10/4/2011	14	Y	OD	N	Scrap Metal	14	7	8	LIP	Y	Y	9	7	
325	84.4	608	-0.3281	0.7644	Y	N	10/4/2011	14	Y	OD		Scrap Steel	6	2	10	LIP	Y	Y	10	3	
326	15.8	40.1	0.0000	-0.2067	Y	N	10/4/2011	8	Y	OD	N	Scrap Metal	8	3	2	LIP	N		4	5	
327	14.5	27.4	0.0000	0.0000	Y	N	10/4/2011	7	Y	OD	N	Scrap Metal	7	1	1	LIP	N		3	5	
328	10.6	21.3	-0.1903	-0.0394	Y	N	10/4/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		3	2	
329	26.8	66.2	0.0000	-0.1903	Y	N	10/4/2011	6	Y	OD	N	Scrap Steel	6	2	1	LIP	N		2	2	
330	8	50.1	-0.5184	0.9843	Y	N	10/4/2011	3	Y	OD	N	Scrap Metal	3	2	2	LIP	N		4	9	
331	13.8	13.2	0.0000	0.0000	Y	N	10/4/2011	6	Y	OD	N	Scrap Metal	6	1	0.5	LIP	N		2.5	5.5	
332	16	46.8	-0.1903	-0.3543	Y	N	10/4/2011	7	Y	OD	N	Scrap Metal	7	1	2	LIP	N		6	4	
333	20	36.7	0.3543	0.0000	Y	N	10/4/2011	5	Y	OD	N	Scrap Metal	5	1	2	LIP	N		3	4	
334	30.5	100.2	0.0000	0.0000	Y	N	10/4/2011	8	Y	OD	N	Scrap Steel	8	1	1	LIP	N		5	0.75	
335	80.2	114.6	0.0000	0.1640	Y	N	10/4/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		36	0.5	
336	20.5	40.2	-0.4659	-0.0262	Y	N	10/4/2011	8	Y	OD	N	Scrap Metal	8	1	2	LIP	N		5	3	
337	19.8	116.7	0.3281	0.3675	Y	N	10/4/2011	7	Y	OD	N	Scrap Steel	7	1	1	LIP	N		3	3	
338	6	198.5	0.4921	0.9843	Y	N	10/4/2011	7	Y	OD	N	Scrap Metal	7	1	2	LIP	N		7	3	
339	12	21	0.1083	0.1083	Y	N	10/4/2011	7	Y	OD	N	Wire	7	2	1	LIP	N		24	0.1	
340	5.1	7.8	-0.2723	-0.0394	Y	N	10/4/2011	3	Y	OD	N	Wire	3	1	0.1	LIP	N		30	0.1	
341	45.4	88.9	0.4921	0.2723	Y	N	10/4/2011	7	Y	OD	N	Scrap Steel	7	1	2	LIP	N		12	1	
342	140.8	277.9	-0.1903	-0.1640	Y	N	10/4/2011	6	Y	OD	N	Scrap Steel	6	2	2	LIP	N		14	0.5	
343	107.2	231.1	-0.2723	0.2067	Y	N	10/4/2011	9	Y	OD	N	Scrap Metal	9	2	2	LIP	N		7	4	
344	46	56	0.0000	0.0000	Y	N	10/4/2011	5	Y	OD	N	Scrap Steel	5	1	1	LIP	N		14	1	
345	967.1	1642	-0.2723	0.1083	Y	N	10/4/2011	3	Y	OD	N	Fence Post	3	2	10	LIP	N		72	1	
346	33.1	166.5	-0.4364	-0.5184	Y	N	10/4/2011	9	Y	OD	N	Scrap Metal	9	5	8	LIP	N		7	13	
347	141	408	0.2461	0.4101	Y	N	10/19/2011	3	Y	OD	N	Pipe	3	1	10	LIP	N		30	3	
348	95.6	234.3	-0.3543	0.1903	Y	N	10/4/2011	6	Y	OD	N	Scrap Metal	6	2	1.5	LIP	N		5	3	
349	44.5	71.2	-0.4364	0.3543	Y	N	10/4/2011	7	Y	OD	N	Scrap Steel	7	2	2	LIP	N		96	1	
350	7.5	19.2	0.0262	-0.4364	Y	N	10/4/2011	4	Y	OD	N	Scrap Steel	4	1	1	LIP	N		46	1	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
351	5.9	21.1	-0.7382	0.7382	Y	N	10/4/2011	4	Y	OD	N	Wire	4	1	0.5	LIP	N		36	0.1	
352	30.5	45.4	0.0000	0.0000	Y	N	10/4/2011	6	Y	OD	N	Nails	6	1	0.5	LIP	N		4	0.1	
353	5	12.5	-0.4921	-0.4921	Y	N	10/4/2011	4	Y	OD	N	Nails	4	1	0.2	LIP	N		3	0.1	
354	38.4	84.6	0.0000	0.4101	Y	N	10/4/2011	6	Y	OD	N	Scrap Steel	6	1	2	LIP	N		38	0.5	
355	8.3	19.4	-0.2461	0.1903	Y	N	10/4/2011	4	Y	OD	N	Scrap Steel	4	1	0.5	LIP	N		48	1	
356	50.5	98.1	0.0820	0.2461	Y	N	10/4/2011	6	Y	OD	N	Scrap Steel	6	4	2	LIP	N		48	1	
357	16.1	16	-0.4921	0.1640	Y	N	10/4/2011	3	Y	OD	N	Wire	3	1	0.25	LIP	N		4	0.1	
358	18.5	57.2	-0.2723	0.2461	Y	N	10/4/2011	6	Y	OD	N	Wire	6	1	0.5	LIP	N		8	0.1	
359	61.2	114.6	-0.2723	0.2067	Y	N	10/4/2011	6	Y	OD	N	Scrap Steel	6	2	3	LIP	N		36	0.5	
360	43.3	121.6	-0.1640	0.5741	Y	N	10/4/2011	5	Y	OD	N	Wire	5	1	0.5	LIP	N		24	0.1	
361	7	15.7	-0.2067	0.0000	Y	N	10/4/2011	3	Y	OD	N	Nails	3	5	0.1	LIP	N		3	0.1	
362	13.1	21.5	-0.2723	-0.1083	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	3	5	LIP	N		2	2	
363	10.2	11.6	-0.1640	0.0000	Y	N	10/4/2011	4	Y	OD	N	Scrap Steel	4	3	0.5	LIP	N		0.1	8	
364	9.5	15.1	0.0820	0.5741	Y	N	10/4/2011	3	Y	OD	N	Scrap Steel	3	2	0.4	LIP	N		0.1	8	
365	31.3	96.9	-0.2723	-0.3675	Y	N	10/4/2011	1	Y	OD	N	Scrap Steel	1	1	0.5	LIP	N		3.5	12	
366	11.9	73	0.5741	0.9843	Y	N	10/4/2011	6	Y	OD	N	Wire	6	1	0.1	LIP	N		36	0.1	
367	15.9	34.4	-0.4101	0.0820	Y	N	10/4/2011	9	Y	OD	N	Scrap Metal	9	4	5	LIP	N		9	12	
368	26.7	38	0.0000	0.0000	Y	N	10/4/2011	4	Y	OD	N	Nails	4	12	0.5	LIP	Y	Y	3	0.1	
369	19.7	17	-0.7382	-0.0820	Y	N	10/4/2011	7	Y	OD	N	Scrap Metal	7	2	1	LIP	N		3	6	
370	7.7	23.8	-0.4364	-0.2067	Y	N	10/4/2011	6	Y	OD	N	Scrap Steel	6	1	1	LIP	N		84	1	
371	27.1	45.3	-0.3675	0.1640	Y	N	10/4/2011	0	Y	OD	N	Scrap Steel	0	2	0.5	LIP	Y	Y	4.5	12	
372	5.5	18.4	0.0000	0.9843	Y	N	10/4/2011	1	Y	OD	N	Scrap Steel	1	1	1	LIP	N		3.5	12	
373	15.4	21.6	-0.4101	-0.4921	Y	N	10/19/2011	6	Y	OD	N	Wire	6	3	1	LIP	N		8	0.1	
374	14.3	27.9	0.0000	0.0000	Y	N	10/4/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	8	
375	30.9	76.1	-0.4921	-0.1378	Y	N	10/4/2011	7	Y	OD	N	Scrap Steel	7	3	2	LIP	N		3.5	12	
376	34.9	94.5	0.0000	0.1903	Y	N	10/4/2011	9	Y	OD	N	Scrap Steel	9	6	3	LIP	N		21	0.1	
377	6.7	16.5	-0.6824	0.6004	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	2	6	LIP	N		3	2	
378	5.5	14	-0.5184	0.3281	Y	N	10/4/2011	4	Y	OD	N	Scrap Steel	4	1	1	LIP	Y	Y	96	1	
379	95.8	137.6	0.0000	0.0000	Y	N	10/19/2011	48	Y	OD	N	Pipe	48	1	10	LIP	Y	Y	36	8	
380	7.2	23.6	-0.3018	-0.1640	Y	N	10/19/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		6	6	
381	58.7	133	0.0000	0.3675	Y	N	10/3/2011	4	Y	OD	N	Rebar	4	1	2	LIP	N		24	0.5	
382	50.6	196.8	0.0000	0.2461	Y	N	10/3/2011	4	Y	OD	N	Wire	4	1	2	LIP	Y	Y	36	0.1	
383	46.9	178	0.0000	-0.8629	Y	N	10/3/2011	3	Y	OD	N	Scrap Steel	3	1	1	LIP	N		12	8	
384	39.1	135	0.0000	0.0000	Y	N	10/3/2011	4	Y	OD	N	Wire	4	1	2	LIP	N		48	0.1	
385	87	189	0.0000	0.0000	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	3	0.5	LIP	Y	Y	96	0.5	
385	87	189	0.0000	0.0000	Y	N	10/3/2011	4	Y	OD	N	Other	4	1	500	LIP	Y	Y	36	8	
386	7.1	34	-0.7940	-0.6955	Y	N	10/3/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		0.1	8	
387	23.9	22.4	0.3543	-0.4364	Y	N	10/3/2011	1	Y	OD	N	Scrap Steel	1	1	0.2	LIP	N		0.1	8	
388	15.2	264.2	-0.1640	0.1083	Y	N	10/3/2011	0	Y	OD	N	Rebar	0	1	2	LIP	N		36	0.3	
389	7.4	42.7	-0.0394	0.8202	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
390	486.7	509	0.0000	0.0000	Y	N	10/3/2011	2	Y	OD	N	Other	2	1	300	LIP	N		72	24	
391	357.8	1376	-0.4921	-0.2723	Y	Y											Y	Y			
392	483.7	428	0.0000	0.0000	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	3	5	LIP	N		2	2	
393	29.9	43.9	0.0000	0.0000	Y	N	10/3/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		0.1	3	
394	26.8	66.1	-0.4659	-0.3543	Y	N	10/3/2011	2	Y	OD	N	Wire	2	1	0.1	LIP	N		36	0.1	
395	141.6	205.5	0.0000	0.0000	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
396	5.2	10.5	0.0000	0.7382	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
397	10	58	-0.2461	-0.6562	Y	N	10/3/2011	4	Y	OD	N	Wire	4	1	0.2	LIP	N		36	0.1	
398	47.6	123	0.3281	0.7644	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		6	4	
399	448	3542	0.0000	-0.3281	Y	Y											Y	Y			
400	13.1	15.6	-0.1640	0.1640	Y	N	10/3/2011	3	Y	OD	N	Scrap Metal	3	1	1	LIP	Y	Y	36	36	
401	978.9	1665	0.1640	0.3281	Y	Y											N				
402	40.7	61.7	-0.0820	0.2461	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	8	LIP	N		9	5	
403	10.1	20.7	-0.1083	0.5348	N	Y											Y	Y			
404	17.1	33.5	0.0000	0.0000	Y	N	10/3/2011	2	Y	OD	N	Wire	2	1	0.1	LIP	N		24	0.1	
405	786.8	975	-0.0394	-0.2461	Y	N	10/3/2011	4	Y	OD	N	Other	4	1	65	LIP	N		24	24	
406	90	145	0.0000	0.0000	Y	Y											N				
407	21.9	41.1	0.0000	-0.2461	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	1	0.5	LIP	N		24	0.25	
408	8.6	13.1	0.0000	0.0000	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	3	5	LIP	N		2	2	
409	44.8	88.9	-0.2067	0.0000	Y	N	10/3/2011	2	Y	OD	N	Scrap Metal	2	1	2	LIP	N		2	2	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
410	12.3	21.4	0.0000	-0.6562	Y	N	10/3/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		0.1	8	
411	49.2	100.5	0.3281	0.1903	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	1	0.5	LIP	N		12	8	
412	15.7	259.8	0.3281	-0.4364	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	3	6	LIP	N		2	2	
413	1043.6	2316	-0.2461	0.0000	Y	Y											Y	Y			
414	17.7	29.3	0.0000	0.0000	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	1	0.3	LIP	N		24	0.25	
415	16.4	18.1	0.0262	-0.3018	Y	N	10/3/2011	4	Y	OD	N	Nails	4	6	0.2	LIP	N		3	0.1	
416	422.4	533	0.1083	-0.2067	Y	N	10/3/2011	4	Y	OD	N	Other	4	1	65	LIP	N		24	24	
417	10.2	140.5	0.4101	-0.8629	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	1	5	LIP	N		12	2	
418	18.9	53.9	0.2067	0.2723	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	1	0.3	LIP	N		24	0.25	
419	13.2	116.8	0.1083	-0.4364	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	1	1	LIP	N		12	6	
420	41.6	74.2	-0.1083	0.1640	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	3	5	LIP	N		3	2	
421	12.4	18.4	-0.0394	0.2461	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	1	0.1	LIP	N		1.5	1.5	
422	159.7	573.5	0.0000	-0.2723	Y	N	10/3/2011	3	Y	OD	N	Fence Post	3	1	5	LIP	N		36	4	
423	17	35.6	0.1083	-0.3018	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	1	0.5	LIP	N		96	0.25	
424	10.3	15.3	0.1903	0.3543	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	4	5	LIP	N		2	2	
425	23.7	41	0.1640	0.3543	Y	N	10/3/2011	1	Y	OD	N	Scrap Steel	1	1	0.5	LIP	Y	Y	96	0.25	
426	22.8	44.9	-0.1903	0.1903	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	6	5	LIP	N		2	2	
427	15	19.6	0.1378	-0.2461	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	3	
428	174	309	0.2461	0.0820	Y	N	10/3/2011	4	Y	OD	N	Wire	4	1	0.2	LIP	N		24	0.1	
429	17.3	170.9	-0.0820	-0.3675	Y	N	10/3/2011	3	Y	OD	N	Scrap Metal	3	1	2	LIP	Y	Y	3	4	
430	13	33.4	-0.1640	-0.5184	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	1	0.5	LIP	N		96	0.25	
431	21.3	66.5	0.0000	0.0000	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	36	
432	19.9	22.4	0.4101	0.3018	Y	N	10/20/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
433	5.1	12.2	0.0000	0.0000	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
434	23.7	135	-0.0820	0.6824	Y	N	10/3/2011	3	Y	OD	N	Scrap Steel	3	10	2.5	LIP	Y	Y	0.1	36	
435	33.2	52	0.1640	-0.0820	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
436	152.1	319	0.0000	0.0000	Y	N	10/3/2011	4	Y	OD	N	Pipe	4	1	5	LIP	N		8	6	
437	10.1	29	0.1378	0.6562	Y	N	10/3/2011	4	Y	OD	N	Wire	4	1	1	LIP	N		12	0.1	
438	6.3	21.3	0.2723	0.0000	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	3	0.2	LIP	N		24	0.25	
439	5.2	16	0.0000	0.0000	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
440	17.5	41	-0.0820	0.1640	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	3	4	LIP	N		2	2	
441	7.7	10.1	-0.3281	-0.5348	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
442	42.5	64.4	0.0000	0.0000	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
443	9.5	32.4	0.0000	0.3543	Y	N	10/3/2011	3	Y	OD	N	Scrap Steel	3	1	0.3	LIP	N		18	0.5	
444	13.8	31.8	0.0000	0.1640	Y	N	10/3/2011	1	Y	OD	N	Wire	1	1	1	LIP	N		18	0.1	
445	11.9	36.6	0.1640	0.0000	Y	N	10/3/2011	3	Y	OD	N	Wire	3	2	0.2	LIP	N		36	0.1	
446	28.5	35	0.6562	0.2067	Y	N	10/3/2011	4	Y	OD	N	Nails	4	4	0.1	LIP	N		2	0.1	
447	17.2	35	-0.2723	-0.4921	Y	N	10/3/2011	3	Y	OD	N	Wire	3	1	0.1	LIP	N		24	0.1	
448	18.1	189.4	-0.2461	0.8202	Y	N	10/3/2011	6	Y	OD	N	Pipe	6	1	5	LIP	N		8	6	
449	29.6	58	0.2461	-0.1903	Y	N	10/3/2011	3	Y	OD	N	Nails	3	4	0.1	LIP	N		2	0.1	
450	33.6	64.6	0.2723	0.0000	Y	N	10/3/2011	8	Y	OD	N	Scrap Steel	8	1	10	LIP	Y	Y	10	4	
450	33.6	64.6	0.2723	0.0000	Y	N	10/3/2011	8	Y	OD		Scrap Steel	4	1	10	LIP	Y	Y	24	1	
451	7.5	10	0.0000	0.0000	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
452	29.2	57	0.0000	0.0000	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	8	
453	5.9	22.7	0.1378	0.5348	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	3	5	LIP	N		2	2	
454	14.3	37.1	-0.3543	0.3281	Y	N	10/3/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		0.1	8	
455	13.2	28.2	0.0000	0.0000	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		4	3	
456	5.6	14	0.2723	-0.0394	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	5	LIP	Y	Y	4	4	
457	6	22.8	0.0000	0.0000	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	4	
458	11	30.8	-0.1083	-0.3281	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	7	LIP	N		6	4	
459	16.3	88.5	-0.1640	0.3281	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		3	3	
460	6.9	21.9	-0.2461	0.5184	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	4	
461	15.7	46.8	0.2461	0.0820	Y	N	10/3/2011	8	Y	OD	N	Other	8	1	1	LIP	N		36	36	
462	22.1	38.2	0.0000	0.0000	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		4	3	
463	7.5	26	-0.4659	0.0000	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	1	0.1	LIP	N		0.1	4	
464	180.4	10100	-0.8202	-0.9843	Y	Y											N				
465	19.2	41.6	0.0000	0.6562	Y	N	10/20/2011	6	Y	OD	N	Scrap Metal	6	5	10	LIP	N		3	2	
466	20.2	483.9	0.0000	-0.9843	Y	N	10/20/2011	4	Y	OD	N	Nails	4	500	3	LIP	Y	Y	5	0.1	
467	26	59	-0.6562	-0.9843	Y	N	10/20/2011	4	Y	OD	N	Nails	4	100	5	LIP	N		5	0.1	
468	63.3	212.8	0.0000	-0.9843	Y	N	10/20/2011	4	Y	OD	N	Scrap Metal	4	500	10	LIP	N		5	0.1	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
469	11.7	19.4	-0.9843	-0.6299	Y	N	10/20/2011	2	Y	OD	N	Scrap Metal	2	1	2	LIP	N		2	2	
470	6.6	8.4	0.0000	0.2461	Y	N	10/20/2011	2	Y	OD	N	Nails	2	2	0.1	LIP	N		3	0.1	
471	7.2	12.2	0.9843	0.3281	Y	N	10/20/2011	2	Y	OD	N	Scrap Metal	2	1	1	LIP	N		3	2	
472	7.4	12.4	0.9843	0.1640	Y	N	10/20/2011	2	Y	OD	N	Scrap Metal	2	2	1	LIP	N		1	1	
473	11.2	109.8	-0.0558	0.9843	Y	N	10/20/2011	12	Y	OD	N	Scrap Steel	12	1	2	LIP	Y	Y	3	10	
474	6	5	0.3839	0.5741	Y	N	10/20/2011	2	Y	OD	N	Nails	2	3	0.1	LIP	N		3	0.1	
475	89	101.2	0.4101	-0.4921	Y	N	10/20/2011	48	Y	OD	N	Pipe	48	1	1	LIP	Y	Y	36	8	
476	19.7	129.4	-0.6562	-0.5741	Y	N	10/21/2011	4	Y	OD	N	Scrap Steel	4	1	10	LIP	N		8	3	
477	9.2	12.6	-0.6562	-0.9843	Y	N	10/21/2011	2	Y	OD	N	Scrap Metal	2	1	2	LIP	N		3	3	
478	33.3	135	0.4921	-0.6824	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	1	1	LIP	Y	Y	48	0.25	
479	9.9	39.9	-0.1903	-0.5741	Y	N	10/21/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		8	4	
480	9.6	13.4	-0.0820	-0.0820	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	3	6	LIP	N		3	2	
481	22.7	30.1	0.0000	0.0000	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	N		2	2	
482	62.3	90	-0.0558	-0.3839	Y	N	10/21/2011	6	Y	OD	N	Scrap Metal	6	1	15	LIP	N		10	6	
483	6.3	7.8	0.0000	0.3281	Y	N	10/21/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
484	42.8	45.7	-0.7119	0.0000	Y	N	10/21/2011	36	Y	OD	N	Pipe	36	1	1	LIP	N		36	3	
485	17.3	23	-0.2461	0.3281	Y	N	10/21/2011	6	Y	OD	N	Scrap Metal	6	1	15	LIP	N		10	6	
486	5.7	23.4	0.1903	0.1903	Y	N	10/21/2011	2	Y	OD	N	Nails	2	1	1	LIP	N		2	0.1	
487	31.4	50.4	-0.2461	0.0000	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	N		2	2	
488	12.6	19.2	0.1640	0.0000	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
489	6.7	11.2	-0.0820	-0.0820	Y	N	10/3/2011	4	Y	OD	N	Wire	4	1	0.1	LIP	N		36	0.1	
490	12.6	18.9	0.0000	0.3675	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	2	4	LIP	N		2	2	
491	7.2	11.7	-0.0820	-0.4101	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	Y	Y	2	2	
492	42.8	85.4	0.1640	0.3018	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	12	15	LIP	N		2	2	
493	22.8	38.4	-0.3675	0.0820	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
494	34.4	140.2	0.2461	0.9843	Y	N	10/3/2011	4	Y	OD	N	Pipe	4	1	2	LIP	N		4	2	
495	45.5	74.8	-0.1083	0.0394	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	2	4	LIP	N		2	2	
496	21.3	29.9	0.0000	0.0000	Y	N	10/3/2011	3	Y	OD	N	Scrap Steel	3	1	0.25	LIP	N		36	0.25	
497	19.1	38.8	0.2067	-0.4101	Y	N	10/3/2011	3	Y	OD	N	Wire	3	1	0.1	LIP	N		36	0.1	
498	9.8	18	0.0000	0.0000	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
499	31.8	73.4	-0.1378	-0.1903	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	12	20	LIP	N		3	3	
500	13.6	88.4	-0.5741	-0.6562	Y	N	10/3/2011	4	Y	OD	N	Other	4	1	200	LIP	N		36	36	
501	9.4	16	0.2723	-0.9843	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		4	3	
502	13.1	38	-0.2067	-0.2067	Y	N	10/3/2011	2	Y	OD	N	Other	2	1	1	LIP	N		36	36	
503	26.9	59.1	0.0000	0.0000	Y	N	10/3/2011	6	Y	OD	N	Other	6	1	1	LIP	N		36	36	
504	17.9	38.6	-0.6824	0.6824	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	1	1	LIP	N		48	0.2	
505	18.9	32.8	-0.1903	-0.0394	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		3	2	
506	27.8	48	-0.2067	0.1378	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	3	0.5	LIP	N		48	0.25	
507	11.2	46.3	0.1378	0.9285	Y	N	10/3/2011	4	Y	OD	N	Wire	4	1	0.2	LIP	N		36	0.1	
508	11.2	18.7	-0.3281	-0.6955	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	3	
509	7	59.6	-0.3675	0.9843	Y	N	10/3/2011	3	Y	OD	N	Wire	3	1	0.1	LIP	N		36	0.1	
510	36.4	70	-0.1640	0.4659	Y	N	10/3/2011	6	Y	OD	N	Wire	6	10	4	LIP	N		2	2	
511	11.6	42.3	-0.5741	-0.4364	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	2	2	LIP	N		2	2	
512	13.6	32.6	0.1903	0.9843	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
513	6.1	78.2	0.9285	0.9843	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	1	3	LIP	Y	Y	96	0.25	
514	10.2	24.3	-0.2067	0.6562	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	1	0.4	LIP	N		24	0.25	
515	51.2	122.6	-0.2461	-0.1903	Y	N	10/3/2011	4	Y	OD	N	Rebar	4	1	3	LIP	N		48	0.3	
516	8	5556	0.3281	0.9843	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	1	10	LIP	N		24	12	
517	21	46.6	-0.3281	0.0820	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		3	2	
518	7.3	29.6	0.0000	0.9843	Y	N	10/3/2011	1	Y	OD	N	Scrap Steel	1	1	0.2	LIP	N		0.1	8	
519	16.7	33	0.0000	0.0000	Y	N	10/3/2011	0	Y	OD	N	Scrap Steel	0	1	0.2	LIP	N		0.1	8	
520	6	17.6	-0.3281	0.9843	Y	N	10/3/2011	2	Y	OD	N	Scrap Steel	2	1	0.1	LIP	N		1.5	1.5	
521	30.2	91.9	0.0820	-0.5348	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	7	5	LIP	N		2	2	
522	28.3	90	-0.4921	0.1083	Y	N	10/3/2011	0	Y	OD	N	Scrap Steel	0	3	0.6	LIP	N		0.1	8	
523	9.7	21.9	-0.3675	-0.1083	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	N		2	2	
524	12	20	0.0000	0.0000	Y	N	10/3/2011	1	Y	OD	N	Scrap Steel	1	1	0.2	LIP	N		0.1	8	
525	12.6	147	-0.8202	-0.9843	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		48	0.25	
526	18.1	176.2	-0.2723	0.9843	Y	N	10/3/2011	2	Y	OD	N	Scrap Steel	2	1	2	LIP	N		36	0.3	
527	9.1	22.4	0.1640	0.8629	Y	N	10/3/2011	6	Y	OD	N	Scrap Metal	6	2	4	LIP	N		3	3	
528	24	37.2	-0.1378	-0.2461	Y	N	10/3/2011	1	Y	OD	N	Scrap Steel	1	2	0.2	LIP	N		1.5	1.5	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
529	10.3	16.4	0.0000	0.0000	Y	N	10/3/2011	4	Y	OD	N	Nails	4	6	0.25	LIP	N		3	0.2	
530	31.5	95.6	-0.3281	0.2461	Y	N	10/3/2011	6	Y	OD	N	Nails	6	30	25	LIP	N		24	24	
531	11.5	16.4	-0.2461	-0.1083	Y	N	10/3/2011	4	Y	OD	N	Wire	4	1	0.1	LIP	N		8	0.1	
532	7.9	78.9	-0.3281	0.9843	Y	N	10/3/2011	2	Y	OD	N	Rebar	2	1	2	LIP	N		24	0.3	
533	8.6	26.6	0.1378	-0.1083	Y	N	10/3/2011	2	Y	OD	N	Wire	2	2	0.1	LIP	N		4	0.1	
534	55	92.9	0.0000	0.0000	Y	N	10/3/2011	4	Y	OD	N	Rebar	4	1	2	LIP	N		24	0.3	
535	22.4	764	0.1640	-0.7382	Y	N	10/3/2011	0	Y	OD	N	Other	0	1	2000	LIP	N		36	24	
536	8.1	4.1	0.0000	0.0000	N	N	10/3/2011	1	Y	OD	N	Nails	1	1	0.1	LIP	Y	Y	2	0.1	
537	35.8	50.4	-0.2723	0.2067	Y	N	10/3/2011	4	Y	OD	N	Nails	4	6	4	LIP	N		2	2	
538	18.9	70.7	-0.4101	0.1903	Y	N	10/3/2011	3	Y	OD	N	Nails	3	12	0.5	LIP	N		3	0.1	
539	7.6	26	-0.3281	-0.2067	Y	N	10/3/2011	2	Y	OD	N	Scrap Steel	2	2	4	LIP	N		0.1	8	
540	153.7	210	0.0000	0.0000	Y	N	10/3/2011	1	Y	OD	N	Scrap Steel	1	1	1	LIP	N		48	0.25	
541	74.3	53	0.1378	0.6299	Y	N	10/3/2011	4	Y	OD	N	Rebar	4	1	1	LIP	N		12	0.2	
542	35.1	67.4	-0.3543	0.1903	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		2	2	
543	16.4	30.9	-0.1378	0.0000	Y	N	10/3/2011	2	Y	OD	N	Wire	2	3	0.1	LIP	N		18	0.1	
544	11.5	27	0.0820	-0.6824	Y	N	10/3/2011	4	Y	OD	N	Rebar	4	1	2	LIP	N		24	0.3	
545	13.1	70.2	-0.1640	-0.7382	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	5	LIP	N		3	2	
546	26.5	31.5	-0.2461	0.9843	Y	N	10/3/2011	4	Y	OD	N	Wire	4	1	0.2	LIP	N		36	0.1	
547	28.9	433	0.0000	0.9843	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	1	0.5	LIP	Y	Y	48	0.25	
547	28.9	433	0.0000	0.9843	Y	N	10/3/2011	4	Y	OD	N	Other	3	1	25	LIP	Y	Y	24	2	
548	27.1	44.7	0.0000	0.0000	Y	N	10/3/2011	4	Y	OD	N	Wire	4	1	0.1	LIP	N		36	0.1	
549	12.2	148	0.0000	0.5741	Y	Y		0	Y								Y	Y			
550	14.1	21.2	-0.4101	0.0000	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		18	0.25	
551	49.8	101.5	-0.2067	0.1378	Y	N	10/3/2011	3	Y	OD	N	Scrap Steel	3	1	2	LIP	Y	Y	48	0.25	
552	25.4	55.1	0.0820	0.1640	Y	N	10/3/2011	4	Y	OD	N	Wire	4	1	4	LIP	N		2	2	
553	17.2	36.2	-0.1903	-0.0262	Y	N	10/3/2011	3	Y	OD	N	Scrap Steel	3	1	0.5	LIP	Y	Y	36	0.5	
554	14.8	42.9	0.0000	0.0000	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	3	
555	15.2	30.7	0.0820	-0.1903	Y	N	10/3/2011	4	Y	OD	N	Scrap Metal	4	1	0.5	LIP	N		1	1	
556	95.1	175	0.0000	0.0000	Y	N	10/3/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	1	
557	99.4	186.2	-0.2067	0.3018	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	1	1	LIP	Y	Y	48	0.25	
558	37	46.8	0.4364	-0.3018	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	1	0.1	LIP	N		4	1	
559	199.9	319	-0.4659	-0.5348	Y	N	9/30/2011	4	Y	OD	N	Cable	4	1	4	LIP	N		72	0.25	
560	10961.2	11628	0.0000	0.0000	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	2	1	3	LIP	Y	Y	96	0.5	
560	10961.2	11628	0.0000	0.0000	Y	N	9/30/2011	4	Y	OD		Fence Post	4	1	3	LIP	Y	Y	60	2	
561	9	46	-0.1083	0.1378	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	8	
562	21.6	207	-0.6562	-0.9843	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	1	1	LIP	N		48	0.25	
563	51.3	139.7	0.4364	0.4921	Y	N	9/30/2011	0	Y	OD	N	Scrap Steel	0	1	0.2	LIP	N		0.1	8	
564	46.9	103	0.0000	0.0000	Y	N	9/30/2011	1	Y	OD	N	Scrap Metal	1	1	0.2	LIP	N		0.1	8	
565	21.8	48.2	0.4659	0.1378	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		3	3	
566	25.9	137.3	-0.2723	0.5184	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	1	1	LIP	N		96	0.5	
567	27.5	54.3	0.2067	-0.2067	Y	N	9/30/2011	4	Y	OD	N	Nails	4	1	0.1	LIP	N		2	0.1	
568	9.4	41.2	0.2723	-0.9843	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	Y	Y	4	3	
569	26.9	1383	0.7644	0.9022	Y	Y											Y	Y			
570	8.6	32	0.1640	0.6299	Y	N	9/30/2011	4	Y	OD	N	Nails	4	6	0.2	LIP	N		2	0.1	
571	58.5	63	0.0000	0.0000	Y	N	10/21/2011	2	Y	OD	N	Scrap Metal	2	3	4	LIP	N		2	2	
572	5.1	8.4	0.0000	-0.4659	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	2	4	LIP	N		2	2	
573	63.3	65.5	0.3281	-0.9843	Y	N	10/21/2011	1	Y	OD	N	Scrap Metal	1	1	1	LIP	Y	Y	36	3	
574	6.2	25.9	0.0000	-0.3675	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	2	4	LIP	N		0.1	8	
575	10.8	47.4	0.0820	-0.5348	Y	N	9/30/2011	4	Y	OD	N	Nails	4	12	0.5	LIP	N		2	0.1	
576	16.1	25.9	0.1378	0.1903	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	2	5	LIP	N		2	2	
577	17.8	41.5	0.4921	-0.3675	Y	N	9/30/2011	4	Y	OD	N	Wire	4	1	0.2	LIP	N		36	0.1	
578	10.5	17.4	0.0000	0.0000	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	3	5	LIP	Y	Y	2	2	
579	42.8	114	0.0262	-0.6824	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		4	4	
580	12	65.2	-0.0394	0.8465	Y	N	9/30/2011	4	Y	OD	N	Wire	4	1	0.2	LIP	N		8	0.1	
581	164.6	422.2	0.6004	-0.3675	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	2	4	LIP	N		2	2	
582	14.2	66.9	0.0000	0.3281	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	3	6	LIP	N		2	2	
583	11.2	20.3	0.1640	0.1640	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	1	8	LIP	N		24	4	
584	27.2	119.6	0.6562	-0.9843	Y	N	9/30/2011	4	Y	OD	N	Pipe	4	1	1	LIP	N		8	0.5	
585	32.6	60.8	0.2723	0.0000	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		24	0.25	
586	30.1	91.3	0.3543	0.1378	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		2	2	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
587	9.4	21.9	0.3018	0.0820	Y	N	9/30/2011	4	Y	OD	N	Wire	4	1	0.2	LIP	N		2	0.1	
588	25.1	56.2	0.4101	-0.5741	Y	N	9/30/2011	4	Y	OD	N	Wire	4	1	0.2	LIP	N		36	0.1	
589	32.2	104.2	0.2067	-0.5348	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		24	0.25	
590	9.2	47.1	0.0820	0.4659	Y	N	9/30/2011	4	Y	OD	N	Nails	4	12	0.5	LIP	N		2	0.1	
591	239.6	440	0.0000	0.0000	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	6	1.5	LIP	N		48	0.25	
592	29.5	73.6	0.0000	-0.3281	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		3	2	
593	25.8	47.1	0.1640	-0.4101	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	6	2	LIP	N		2	2	
594	28.5	57.9	0.3675	-0.4659	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		24	0.25	
595	55.1	108	0.4101	-0.1640	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	2	1.3	LIP	N		96	0.25	
596	12.3	14.1	-0.1903	0.1640	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	1	0.3	LIP	N		24	0.25	
597	8.9	15.3	-0.4101	0.0000	Y	N	9/30/2011	2	Y	OD	N	Wire	2	1	0.1	LIP	N		24	0.1	
598	27.4	43.5	0.1640	0.1640	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
599	10.5	12.6	-0.2461	-0.6299	Y	N	10/21/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
600	16.4	23.9	0.1640	0.1903	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	1	0.25	LIP	N		36	0.25	
601	33.2	101.9	0.2067	-0.1378	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	4	0.5	LIP	N		0.1	8	
602	43.5	66.4	0.0000	0.0000	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
603	10	36.2	0.2067	-0.3018	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	Y	Y	36	36	
604	15.9	41	0.0820	0.3281	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
605	66.6	118.6	-0.0820	0.0820	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	2	4	LIP	N		2	2	
606	12.7	29.1	0.0394	-0.3281	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
607	90.9	312.3	0.0000	-0.2461	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	1	0.5	LIP	N		72	0.25	
608	23.4	51.2	0.4659	0.2461	Y	N	9/30/2011	0	Y	OD	N	Scrap Steel	0	1	0.1	LIP	N		1.5	1.5	
609	11.7	69.6	-0.4921	0.2723	Y	N	9/30/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		24	0.25	
610	38.7	81.4	0.5249	0.0394	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	4	8	LIP	N		2	2	
611	11.2	28.9	0.0000	-0.3281	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	3	
612	64.1	356.3	0.2461	-0.9843	Y	N	10/21/2011	4	Y	OD	N	Other	4	1	100	LIP	N		36	36	
613	544.4	692	0.0000	-0.2461	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
614	24.8	57.3	0.4659	-0.3543	Y	N	9/30/2011	4	Y	OD	N	Nails	4	6	0.2	LIP	N		3	0.1	
615	47.7	409	-0.3281	-0.9843	Y	N	10/21/2011	1	Y	OD	N	Rebar	1	1	13	LIP	N		24	0.5	
616	23	40.5	0.1640	-0.1903	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	1	0.3	LIP	N		0.1	3	
617	33	50.2	-0.1640	-0.3281	Y	N	10/21/2011	4	Y	OD	N	Other	4	1	50	LIP	N		36	36	
618	20.3	38.2	0.0000	-0.5184	Y	N	9/30/2011	4	Y	OD	N	Other	4	1	200	LIP	N		24	24	
619	47.6	26.5	-0.1903	0.0000	Y	N	10/21/2011	3	Y	OD	N	Scrap Steel	3	1	1	LIP	N		8	1	
620	42.2	101.5	-0.4101	-0.3839	Y	N	10/21/2011	6	Y	OD	N	Fence Material	6	1	5	LIP	N		8	2	
621	40.1	118.6	-0.1378	0.1640	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	4	8	LIP	N		2	2	
622	14	20.3	0.3839	-0.3839	Y	N	10/21/2011	2	Y	OD	N	Nails	2	3	1	LIP	N		4	0.1	
623	9.8	30	-0.1903	-0.3281	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	8	
624	12	15.7	0.1640	0.9843	Y	N	10/21/2011	2	Y	OD	N	Scrap Metal	2	1	2	LIP	N		2	2	
625	12.4	31.8	0.0820	-0.2461	Y	N	10/21/2011	2	Y	OD	N	Scrap Metal	2	1	2	LIP	N		2	2	
626	15.5	27.8	0.8202	0.6299	Y	N	10/21/2011	2	Y	OD	N	Nails	2	2	1	LIP	N		4	0.1	
627	61.5	80	0.5741	-0.1640	Y	N	10/21/2011	8	Y	OD	N	Scrap Steel	8	1	3	LIP	N		24	1	
628	120	261.9	0.5184	0.0820	Y	N	10/21/2011	8	Y	OD	N	Pipe	8	1	25	LIP	N		18	3	
629	7	7.2	0.2067	0.1378	Y	N	9/30/2011	4	Y	OD	N	Nails	4	1	0.1	LIP	N		3	0.1	
630	14.2	22.3	0.0000	-0.9022	Y	N	10/21/2011	4	Y	OD	N	Scrap Steel	4	1	10	LIP	N		72	0.5	
631	13.9	29	0.2461	-0.1903	Y	N	10/21/2011	1	Y	OD	N	Scrap Steel	1	1	1	LIP	N		3	3	
632	36.7	74.4	0.2461	0.3018	Y	N	9/30/2011	4	Y	OD	N	Nails	4	12	0.4	LIP	N		3	0.1	
633	17.1	22.1	0.0000	0.0000	Y	N	10/21/2011	2	Y	OD	N	Other	2	1	1	LIP	N		36	36	
634	9	24.4	-0.1903	-0.6562	Y	N	9/30/2011	1	Y	OD	N	Nails	1	4	0.1	LIP	N		2	0.1	
635	18.2	47	0.3839	0.1083	Y	Y											N				
636	5.9	7.8	0.0000	0.0000	Y	N	9/30/2011	4	Y	OD	N	Wire	4	1	0.1	LIP	N		8	0.1	
637	5.3	10.4	0.5348	0.1903	Y	N	9/30/2011	1	Y	OD	N	Scrap Steel	1	1	0.2	LIP	N		0.1	8	
638	38.3	156.2	0.4101	-0.7644	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	1	0.5	LIP	N		96	0.5	
639	17.1	78	-0.0558	-0.9843	Y	N	9/30/2011	4	Y	OD	N	Nails	4	6	2	LIP	Y	Y	2	0.1	
640	17.2	27.8	0.1640	-0.6299	Y	N	10/20/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
641	21.4	30.9	0.0000	0.2461	Y	N	10/20/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
642	21.6	21.2	0.0000	0.0000	Y	N	10/21/2011	2	Y	OD	N	Scrap Metal	2	1	2	LIP	N		2	2	
643	34.1	44.8	0.1903	-0.0820	Y	N	10/21/2011	2	Y	OD	N	Other	2	1	1	LIP	N		36	36	
644	33.7	34	0.0000	0.0000	Y	N	10/20/2011	4	Y	OD	N	Scrap Steel	4	1	1	LIP	N		8	0.5	
645	20.9	19.1	0.0000	0.0000	Y	N	10/21/2011	3	Y	OD	N	Scrap Metal	3	1	2	LIP	N		3	2	
646	69.2	97	0.0000	0.0000	Y	N	10/20/2011	6	Y	OD	N	Scrap Metal	6	8	15	LIP	N		3	2	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
647	9.2	18.4	0.4364	0.0000	Y	N	9/30/2011	2	Y	OD	N	Wire	2	1	0.1	LIP	N		36	0.1	
648	59.3	144	0.1378	-0.5184	Y	N	9/30/2011	4	Y	OD	N	Nails	4	2	2	LIP	N		2	0.1	
649	11.7	24.8	-0.1640	0.2067	Y	N	10/21/2011	3	Y	OD	N	Scrap Metal	3	1	2	LIP	N		3	2	
650	67.6	118.2	0.0000	0.9022	Y	N	10/20/2011	6	Y	OD	N	Scrap Metal	6	6	12	LIP	N		3	2	
651	9.7	18.4	0.0558	0.0000	Y	N	9/30/2011	2	Y	OD	N	Scrap Metal	2	1	2	LIP	N		2	2	
652	6.8	9.9	0.1903	0.3018	Y	N	9/30/2011	4	Y	OD	N	Nails	4	1	0.1	LIP	N		3	0.1	
653	135.5	644	0.0000	0.6004	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	80	20	LIP	Y	Y	2	0.1	
654	9.3	14.2	0.0000	0.3839	Y	N	10/21/2011	1	Y	OD	N	Nails	1	2	1	LIP	N		8	0.1	
655	6.6	28.5	0.0000	0.9843	Y	N	9/30/2011	4	Y	OD	N	Wire	4	1	0.1	LIP	N		36	0.1	
656	6.7	9.2	0.0000	0.0000	Y	N	9/30/2011	4	Y	OD	N	Nails	4	4	0.2	LIP	N		2	0.1	
657	56	73.2	0.0000	0.0000	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
658	11.5	60.8	0.0000	-0.9843	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
659	8.1	15	0.3281	-0.4364	Y	N	9/30/2011	1	Y	OD	N	Scrap Steel	1	1	0.2	LIP	N		0.1	3	
660	6.9	32.8	-0.2198	0.2723	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
661	34.7	100.6	0.8465	-0.9022	Y	N	9/30/2011	4	Y	OD	N	Pipe	4	1	1	LIP	N		6	0.35	
662	177	52.1	0.0000	0.0000	Y	N	9/30/2011	3	Y	OD	N	Nails	3	6	0.2	LIP	N		2	0.1	
663	35	71	0.0558	0.7119	Y	N	9/30/2011	4	Y	OD	N	Nails	4	33	0.5	LIP	Y	Y	3	0.1	
664	12.4	35	0.1640	0.1903	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	1	0.5	LIP	N		96	0.5	
665	10.8	14.8	0.1378	0.3281	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	1	0.3	LIP	N		0.1	3	
666	8.5	25.8	0.0000	0.9843	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		2	2	
667	5.6	5.5	0.0000	0.9843	Y	N	9/30/2011	1	Y	OD	N	Scrap Steel	1	1	0.1	LIP	N		0.1	8	
668	12.8	19.2	0.2067	-0.3675	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	1	0.5	LIP	N		96	0.5	
669	39.5	111.8	0.2198	0.1378	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		2	1	
670	193.5	592.6	0.1083	0.3281	Y	N	9/30/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		36	0.25	
671	11.3	15.8	0.3281	0.1378	Y	N	9/30/2011	4	Y	OD	N	Nails	4	6	0.2	LIP	Y	Y	2	0.1	
672	5.1	12.6	0.3773	-0.7382	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	3	
673	12	12.1	0.2723	-0.1378	Y	N	9/30/2011	3	Y	OD	N	Scrap Steel	3	1	0.1	LIP	N		1.5	1.5	
674	8.9	40.2	0.0000	0.9843	Y	N	9/30/2011	4	Y	OD	N	Nails	4	6	0.2	LIP	N		2	0.1	
675	72.1	81.2	0.0000	0.0000	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	1	0.5	LIP	N		96	0.5	
676	34.2	80.7	0.0000	0.0000	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	3	3	LIP	N		2	2	
677	206.5	464.1	-0.0558	0.3839	Y	N	9/30/2011	4	Y	OD	N	Nails	4	100	2	LIP	N		3	1	
678	5.4	27.4	-0.9580	-0.9843	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	1	0.5	LIP	N		96	0.5	
679	210.9	506.8	0.0000	0.0000	Y	N	9/30/2011	4	Y	OD	N	Nails	4	100	2	LIP	N		2	0.1	
680	19.4	65.9	0.2723	0.0000	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		1.5	1.5	
681	15.1	35	0.3281	0.3281	Y	N	9/30/2011	4	Y	OD	N	Wire	4	1	0.1	LIP	N		36	0.1	
682	14.5	23.1	0.0820	0.0558	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		3	3	
683	20.6	78.1	-0.1378	0.8629	Y	N	9/30/2011	6	Y	OD	N	Scrap Metal	6	5	7	LIP	N		2	2	
684	15.8	30.9	-0.1903	-0.1903	Y	N	9/30/2011	3	Y	OD	N	Scrap Steel	3	2	0.4	LIP	N		0.1	8	
685	11	40	-0.8268	0.0000	Y	N	9/30/2011	3	Y	OD	N	Scrap Steel	3	1	0.2	LIP	N		0.1	8	
686	13.1	19	0.0000	0.0000	Y	N	9/30/2011	4	Y	OD	N	Nails	4	6	0.2	LIP	N		2	0.1	
687	20.8	36.6	0.0000	0.8202	Y	N	9/30/2011	4	Y	OD	N	Nails	4	12	2	LIP	N		2	0.1	
688	15.3	30.6	0.0000	0.0000	Y	N	9/30/2011	4	Y	OD	N	Wire	4	1	0.1	LIP	Y	Y	36	0.1	
689	21.6	54.1	0.0000	-0.9843	Y	N	9/30/2011	2	Y	OD	N	Scrap Steel	2	2	1	LIP	N		96	0.5	
690	19.1	28.6	0.1378	0.0000	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		4	3	
691	46.7	78.5	0.0558	0.1903	Y	N	9/30/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		3	3	
692	7.2	18	0.0000	0.0000	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	8	
693	13.1	20.3	0.1083	0.0000	Y	N	9/30/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	8	
694	6.7	14.2	0.0000	0.9843	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	3	
695	11.3	17.8	0.0000	0.0000	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	8	
696	8.9	24.2	-0.0558	-0.7644	Y	N	9/29/2011	4	Y	OD	N	Nails	4	10	0.25	LIP	N		3	0.1	
697	106.8	408	0.1640	0.3281	Y	N	9/29/2011	12	Y	OD	N	Scrap Steel	8	1	4	LIP	Y	Y	36	0.5	
697	106.8	408	0.1640	0.3281	Y	N	9/29/2011	12	Y	OD		Other	12	1	1	LIP	Y	Y	36	36	
698	5.5	20.3	0.0000	0.4921	Y	N	9/29/2011	4	Y	OD	N	Nails	4	1	1	LIP	N		2	0.1	
699	32.9	54.4	-0.2887	-0.3018	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		3	3	
700	20.3	28.4	0.0000	0.0000	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
701	146	198	0.0000	0.4921	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
702	13.7	24	0.0000	0.1083	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	3	
703	9.3	14	-0.1083	0.0000	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
704	11.9	9.9	-0.3281	-0.1083	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	8	
705	12.6	20.4	-0.2723	-0.3018	Y	N	9/29/2011	4	Y	OD	N	Wire	4	1	0.2	LIP	N		36	0.1	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12,168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
706	16.5	17	0.1903	0.1903	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	Y	Y	2	2	
707	89.9	155.4	0.4921	0.0000	Y	N	9/29/2011	6	Y	OD	N	Nails	6	100	5	LIP	N		3	0.1	
708	11.6	14.6	0.0000	0.0558	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	8	
709	12.9	77.5	0.0000	0.7644	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	7	1	LIP	N		0.1	6	
710	41.2	76	-0.1640	-0.0558	Y	N	9/29/2011	4	Y	OD	N	Pipe	4	1	2	LIP	N		8	0.5	
711	36	71.6	0.0000	0.6562	Y	N	9/29/2011	4	Y	OD	N	Nails	4	30	3	LIP	Y	Y	3	0.1	
712	15.3	54.3	0.0000	0.7644	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	3	2	0.5	LIP	Y	Y	48	0.5	
712	15.3	54.3	0.0000	0.7644	Y	N	9/29/2011	4	Y	OD		Nails	4	6	0.1	LIP	Y	Y	4	0.1	
713	11.7	21.5	0.0000	-0.1378	Y	N	9/29/2011	3	Y	OD	N	Scrap Steel	3	1	0.2	LIP	N		0.1	8	
714	32.6	41	0.0558	0.3281	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	1	8	LIP	N		18	0.5	
715	40.5	70.5	-0.4921	-0.0558	Y	N	9/29/2011	3	Y	OD	N	Scrap Steel	3	1	0.2	LIP	N		0.1	8	
716	41.6	74.3	-0.1640	0.3281	Y	N	9/29/2011	4	Y	OD	N	Wire	4	1	0.2	LIP	N		36	0.1	
717	29	226.7	0.0000	-0.9843	Y	N	9/29/2011	1	Y	OD	N	Scrap Steel	1	6	4	LIP	Y	Y	0.1	8	
718	5.6	14	0.0000	0.0000	Y	N	10/20/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
719	5.6	6.8	0.4921	0.0000	Y	N	10/21/2011	2	Y	OD	N	Nails	2	1	0.1	LIP	N		4	0.1	
720	36.3	45.6	0.5741	-0.2461	Y	N	10/21/2011	4	Y	OD	N	Scrap Metal	4	1	5	LIP	Y	Y	7	4	
720	36.3	45.6	0.5741	-0.2461	Y	N	10/21/2011	4	Y	OD		Pipe	3	1	2	LIP	Y	Y	8	1.5	
721	11.1	25.2	0.3281	-0.4921	Y	N	10/21/2011	2	Y	OD	N	Bolt	2	1	1	LIP	N		4	0.25	
722	15.2	19.3	0.0000	0.1083	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	3	
723	18.5	20.2	0.0000	0.3839	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
724	163.6	315.8	0.4101	-0.2461	Y	N	10/21/2011	4	Y	OD	N	Scrap Steel	4	1	10	LIP	N		10	1	
725	40.2	62.5	0.1378	-0.1903	Y	N	10/21/2011	4	Y	OD	N	Scrap Metal	4	3	7	LIP	N		5	4	
726	86.5	112.9	0.0000	0.4101	Y	N	10/20/2011	6	Y	OD	N	Bolt	6	1	2	LIP	N		5	1	
727	8.5	17.4	0.4364	0.4921	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		3	3	
728	15.1	37.7	-0.2723	-0.1378	Y	N	9/29/2011	4	Y	OD	N	Wire	4	1	0.2	LIP	N		24	0.1	
729	13.2	100	0.0000	-0.9843	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	2	1	LIP	N		48	0.25	
730	10.5	10	0.6562	0.3281	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	Y	Y	0.1	3	
731	75.4	90.4	-0.4101	0.4101	Y	N	10/20/2011	6	Y	OD	N	Pipe	6	1	2	LIP	N		5	1	
732	84	185.4	-0.5741	-0.4659	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		3	3	
733	117.9	149	0.0000	0.0000	Y	N	9/29/2011	0	Y	Other	N	Other	0	1	0.3	LIP	Y	Y	10	0.125	
734	6.6	11	0.0000	0.4364	Y	N	9/29/2011	4	Y	OD	N	Wire	4	1	0.2	LIP	N		10	0.1	
735	6.8	11	0.0000	0.6562	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	1	0.1	LIP	N		1.5	1.5	
736	10.6	16.9	0.0000	0.6562	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		2	2	
737	40.6	84.3	0.0000	0.2723	Y	N	9/29/2011	4	Y	OD	N	Nails	4	10	0.3	LIP	N		2	0.1	
738	9.5	44	0.0558	0.5741	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		2	2	
739	9.2	24.9	0.0000	0.3281	Y	N	9/29/2011	4	Y	OD	N	Wire	4	1	0.2	LIP	N		36	0.1	
740	22.4	76.3	0.0000	0.2461	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	1	0.4	LIP	N		72	0.25	
741	6.5	22.3	-0.1640	-0.1378	Y	N	9/29/2011	4	Y	OD	N	Nails	4	4	0.2	LIP	N		3	0.1	
742	10.2	15.4	0.3281	0.1378	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	Y	Y	0.1	3	
743	7.9	31.7	0.0000	0.3839	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		2	2	
744	48.2	187.8	-0.3281	0.9285	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	2	8	LIP	N		4	3	
745	33	71.8	-0.6562	0.0000	Y	N	9/29/2011	3	Y	OD	N	Scrap Steel	3	1	0.2	LIP	N		0.1	3	
746	8	33.2	0.0000	0.3281	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		3	3	
747	6	42.1	0.3281	0.6562	Y	N	9/29/2011	2	Y	OD	N	Nails	2	1	0.1	LIP	N		2	0.1	
748	52.6	85.9	-0.6562	-0.6562	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	1	0.25	LIP	N		8	0.2	
749	15.5	20.1	0.0000	0.0000	Y	N	9/29/2011	6	Y	OD	N	Scrap Metal	6	1	4	LIP	N		3	3	
750	33.7	44.5	0.1083	0.1378	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	4	8	LIP	N		3	2	
751	56.2	1492	0.0000	0.9843	Y	N	9/29/2011	0	Y	OD	N	Other	0	1	100	LIP	N		36	36	
752	248.8	1651	0.0000	0.9843	Y	N	9/29/2011	0	Y	OD	N	Other	0	1	100	LIP	N		36	36	
753	36.7	70	0.0820	0.1083	Y	N	9/29/2011	3	Y	OD	N	Scrap Metal	3	1	10	LIP	N		6	4	
754	30.3	51.3	0.1083	0.3839	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		2	2	
755	730.8	1086	-0.7382	0.0000	Y	N	10/21/2011	2	Y	OD	N	Pipe	2	1	5	LIP	N		36	1	
756	6.8	54.5	0.0000	0.4364	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		3	3	
757	5.1	7.2	-0.9022	0.1903	Y	N	10/21/2011	2	Y	OD	N	Nails	2	1	0.1	LIP	N		8	0.1	
758	142	397.9	0.0000	0.6562	Y	N	9/29/2011	3	Y	OD	N	Nails	2	1	0.1	LIP	Y	Y	2	0.1	
758	142	397.9	0.0000	0.6562	Y	N	9/29/2011	3	Y	OD	N	Other	3	20	50	LIP	Y	Y	36	36	
759	56.9	498	0.0000	-0.6004	Y	N	9/29/2011	24	Y	OD	N	Scrap Metal	24	15	15	LIP	Y	Y	3	3	
760	55.1	137.8	0.0000	0.0000	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		12	0.25	
761	75.5	155.5	0.3281	0.0000	Y	N	10/21/2011	2	Y	OD	N	Pipe	2	1	2	LIP	N		7	1	
762	23.6	24.5	0.9843	-0.0820	Y	N	10/21/2011	4	Y	OD	N	Nails	4	3	0.1	LIP	N		4	0.1	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
763	22.5	26.9	0.3839	0.5741	Y	N	10/21/2011	4	Y	OD	N	Nails	4	3	0.1	LIP	N		4	0.1	
764	54.5	304	0.0558	0.6004	Y	N	9/29/2011	2	Y	OD	N	Scrap Metal	2	1	10	LIP	N		8	3	
765	83	384	0.1083	0.6562	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		1	1	
766	24.2	268.9	-0.1640	-0.6562	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		1	1	
767	7.2	12.7	0.0000	-0.2067	Y	N	10/21/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		3	3	
768	14.8	22.8	-0.8629	-0.6562	Y	N	10/21/2011	3	Y	OD	N	Scrap Metal	3	1	2	LIP	N		3	3	
769	73.2	195.4	0.0558	0.6562	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	50	10	LIP	Y	Y	0.1	3	
770	19	102.9	0.0000	0.6562	Y	N	9/29/2011	3	Y	OD	N	Scrap Steel	3	1	0.2	LIP	N		6	4	
771	45.5	60.2	-0.3281	-0.3281	Y	N	10/21/2011	4	Y	OD	N	Scrap Metal	4	5	10	LIP	N		3	2	
772	95.5	268	0.3281	0.7119	Y	N	9/29/2011	0	Y	OD	N	Scrap Steel	0	1	1	LIP	N		36	0.5	
773	35.9	154	0.3281	0.1640	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		1	1	
774	32.9	385	0.6562	0.6562	Y	N	9/29/2011	2	Y	OD	N	Wire	2	1	0.1	LIP	N		36	0.1	
775	6.1	6	0.0000	0.0000	Y	N	9/29/2011	0	N								Y	Y			
776	12.5	32.4	-0.1083	0.2723	Y	N	9/29/2011	2	Y	OD	N	Nails	2	1	0.1	LIP	N		2	0.1	
777	12.5	32	-0.6562	-0.6562	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		24	0.25	
778	9	15	0.0000	0.3281	Y	N	9/29/2011	2	Y	OD	N	Nails	2	1	0.1	LIP	N		3	0.1	
779	72.2	211.5	0.0000	0.8202	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	8	
780	7	22.3	0.0000	0.6562	Y	N	9/29/2011	2	Y	OD	N	Scrap Steel	2	1	0.1	LIP	Y	Y	6	0.25	
781	7.9	14	0.1640	0.0000	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
782	71.8	168.2	-0.3281	-0.6562	Y	N	9/29/2011	12	Y	OD	N	Scrap Steel	4	2	0.4	LIP	N		0.1	8	
782	71.8	168.2	-0.3281	-0.6562	Y	N	9/29/2011	12	Y	OD	N	Scrap Steel	12	1	5	LIP	N		14	1	
783	37.6	60	-0.3281	-0.7119	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	6	1	LIP	Y	Y	5	8	
784	71.5	121.2	0.0558	0.1640	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	3	0.6	LIP	N		0.1	8	
785	18.8	37.2	-0.6562	-0.1640	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		3	3	
786	27	42.4	0.2723	0.0000	Y	N	9/29/2011	2	Y	OD	N	Nails	2	1	0.1	LIP	N		3	0.1	
787	464.2	2425	0.0000	0.9843	Y	N	9/29/2011	18	Y	OD	N	Trash Pit	18	1	20	LIP	N		12	2	
788	15.4	36.8	0.3281	0.0558	Y	N	9/29/2011	1	Y	OD	N	Scrap Steel	1	2	0.4	LIP	N		0.1	8	
789	7.3	25.2	-0.3773	-0.4921	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	8	
790	17.6	32.7	0.1083	0.3281	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	3	1	LIP	N		1	1	
791	24.3	40.9	0.0000	0.3281	Y	N	9/29/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		0.1	8	
792	12.5	24.6	0.0000	0.0000	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		3	3	
793	48.2	168.5	0.3018	0.9285	Y	N	9/29/2011	6	Y	OD	N	Scrap Metal	6	1	8	LIP	N		8	6	
794	7.1	12.6	0.0000	0.2198	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		2	2	
795	14.5	80.9	0.0000	0.3839	Y	N	9/29/2011	2	Y	OD	N	Nails	2	1	0.1	LIP	N		2	0.1	
796	10.9	22.2	0.3018	0.0000	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		3	3	
797	226.2	333.2	0.2461	0.1640	Y	N	9/29/2011	4	Y	OD	N	Rebar	4	10	10	LIP	N		8	0.25	
798	13.6	21.2	0.1378	0.4101	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	2	0.4	LIP	N		0.1	8	
799	42.9	86.3	0.3281	0.4364	Y	N	9/29/2011	3	Y	OD	N	Scrap Metal	3	1	1	LIP	N		96	0.5	
800	22	44.9	0.3839	0.1083	Y	N	9/29/2011	1	Y	OD	N	Wire	1	1	0.1	LIP	N		3	0.1	
801	5.8	20.9	0.0000	0.9843	Y	N	9/29/2011	3	Y	OD	N	Scrap Metal	3	1	0.2	LIP	N		0.1	3	
802	8.2	17	0.6299	0.0000	Y	N	9/29/2011	3	Y	OD	N	Wire	3	1	0.2	LIP	Y	Y	36	0.1	
802	8.2	17	0.6299	0.0000	Y	N	9/29/2011	3	Y	OD		Nails	3	5	0.2	LIP	Y	Y	4	0.1	
803	65.5	142	0.0000	-0.1083	Y	N	9/29/2011	3	Y	OD	N	Scrap Metal	3	1	1	LIP	N		1	1	
804	8.4	12.1	-0.0820	0.3609	Y	N	9/29/2011	3	Y	OD	N	Wire	3	1	0.1	LIP	Y	Y	18	0.1	
805	60.3	83.6	0.1083	0.0000	Y	N	9/29/2011	3	Y	OD	N	Scrap Metal	3	1	1	LIP	N		18	0.5	
806	8.5	129.7	-0.6562	0.9843	Y	N	9/29/2011	3	Y	OD	N	Scrap Steel	3	1	1	LIP	N		48	0.25	
807	10.6	15.1	-0.1083	0.2461	Y	N	9/29/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	Y	Y	0.1	3	
808	7.2	29.6	0.0000	0.3839	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		18	0.25	
809	5.6	4.8	0.2461	0.4921	Y	N	9/29/2011	4	Y	OD	N	Wire	4	1	0.1	LIP	N		36	0.1	
810	17.6	45.8	0.0000	0.3839	Y	N	9/29/2011	0	Y	OD	N	Wire	0	1	0.1	LIP	Y	Y	36	0.1	
811	18	64.9	0.1083	0.3281	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		1	1	
812	14.8	26.2	0.0000	0.8202	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		1	1	
813	309	537.9	-0.0820	0.1903	Y	N	9/29/2011	3	Y	OD	N	Fence Post	3	1	4	LIP	N		36	3	
814	10.5	56.9	-0.4364	0.4921	Y	N	10/21/2011	4	Y	OD	N	Scrap Metal	4	2	2	LIP	N		2	2	
815	5.4	6.3	0.0000	0.6562	Y	N	9/29/2011	3	Y	OD	N	Scrap Steel	3	1	2	LIP	Y	Y	0.1	8	
816	10.3	34.8	-0.3281	-0.6562	Y	N	9/29/2011	0	Y	OD	N	Scrap Steel	0	1	0.2	LIP	N		0.1	8	
817	12.1	27	0.0000	0.2723	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	3	
818	9.6	24	0.0000	-0.4364	Y	N	9/29/2011	3	Y	OD	N	Scrap Metal	3	1	4	LIP	N		3	3	
819	13.2	26	0.0000	0.0000	Y	N	9/29/2011	2	Y	OD	N	Wire	2	1	3	LIP	Y	Y	36	0.1	
820	26.6	72.4	0.0000	0.9843	Y	N	10/21/2011	4	Y	OD	N	Scrap Metal	4	2	4	LIP	N		4	4	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
821	17.4	61.7	0.1083	0.0820	Y	N	9/29/2011	3	Y	OD	N	Scrap Metal	3	3	1	LIP	N		2	1	
822	35.5	644.8	-0.2067	0.9022	Y	N	10/21/2011	0	Y	OD	N	Scrap Steel	0	1	50	LIP	Y	Y	7	7	
823	7.9	36.2	-0.0558	0.6562	Y	N	9/29/2011	3	Y	OD	N	Nails	3	1	0.1	LIP	N		3	0.1	
824	11.5	28.4	0.0000	0.7874	Y	N	9/29/2011	3	Y	OD	N	Scrap Steel	3	2	0.4	LIP	N		0.1	8	
825	88.4	4486	-0.9843	-0.8202	Y	Y											N				
826	11.2	34.5	0.2723	0.4364	Y	N	9/29/2011	1	Y	OD	N	Scrap Steel	1	1	0.1	LIP	N		1.5	1.5	
827	8.9	19.4	0.0000	0.0000	Y	N	9/29/2011	2	Y	OD	N	Wire	2	1	0.1	LIP	N		6	0.1	
828	7.9	36	0.0000	-0.7382	Y	N	10/20/2011	6	Y	OD	N	Scrap Metal	6	1	4	LIP	N		3	2	
829	5.3	175	0.0000	0.9843	Y	N	9/29/2011	3	Y	OD	N	Scrap Steel	3	10	4	LIP	Y	Y	0.1	8	
830	55.4	77.2	0.0000	0.0000	Y	N	10/20/2011	6	Y	OD	N	Scrap Metal	6	3	3	LIP	N		2	1	
831	35.5	49.6	0.0000	0.0000	Y	N	9/29/2011	3	Y	OD	N	Pipe	3	1	0.5	LIP	N		3	2	
832	17.7	32.4	0.0820	0.2723	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	5	LIP	N		3	3	
833	91.5	5611	0.0000	0.9843	Y	Y											N				
834	7.9	18.1	0.1640	-0.5741	Y	N	10/21/2011	4	Y	OD	N	Scrap Metal	4	1	6	LIP	N		4	3	
835	16.4	22.4	0.9843	0.3281	Y	N	10/21/2011	2	Y	OD	N	Nails	2	2	1	LIP	N		8	0.1	
836	9.6	22.3	-0.4101	0.1640	N	Y											Y	Y			
837	10.8	25.4	0.9843	0.4921	Y	N	10/21/2011	2	Y	OD	N	Nails	2	3	0.1	LIP	N		8	0.1	
838	9.5	41	-0.3018	-0.2461	Y	N	10/21/2011	4	Y	OD	N	Bolt	4	1	1	LIP	N		5	0.25	
839	36.9	36.3	-0.3281	0.0000	Y	N	10/21/2011	4	Y	OD	N	Scrap Metal	4	10	7	LIP	N		3	2	
840	20.8	16.5	0.4921	-0.4921	Y	N	10/21/2011	4	Y	OD	N	Nails	4	6	1	LIP	N		6	0.1	
841	23	33	0.0000	0.0000	Y	N	10/21/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	N		2	2	
842	21.8	158.5	0.9843	0.6562	Y	N	10/21/2011	4	Y	OD	N	Scrap Metal	4	1	7	LIP	Y	Y	8	5	
843	30.9	632	0.0000	-0.9843	Y	N	10/21/2011	6	Y	OD	N	Pipe	6	1	10	LIP	N		12	3	
844	18	26.6	-0.2067	0.0000	Y	N	10/21/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	Y	Y	2	2	
845	6.5	13.2	-0.4101	-0.9449	Y	N	9/28/2011	2	Y	OD		Scrap Steel	2	1	0.2	LIP	Y	Y	0.2	3	
845	6.5	13.2	-0.4101	-0.9449	Y	N	9/28/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	Y	Y	0.1	3	
846	10.1	29.7	0.0000	0.9022	Y	N	9/28/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		2	1	
847	18.4	65	0.0000	0.6004	Y	N	9/29/2011	3	Y	OD	N	Nails	3	1	0.1	LIP	Y	Y	3	0.1	
848	8.3	82.3	0.0000	0.9843	Y	N	9/28/2011	10	Y	OD	N	Scrap Metal	10	2	4	LIP	N		2	2	
849	16.3	19.6	0.0558	0.1083	Y	N	9/28/2011	2	Y	OD	N	Wire	2	1	0.1	LIP	N		7	0.1	
850	11.9	10.2	0.0000	0.5741	Y	N	10/21/2011	2	Y	OD	N	Nails	2	2	0.1	LIP	N		4	0.1	
851	13.9	54.5	-0.6562	-0.6562	Y	N	9/29/2011	6	Y	OD	N	Scrap Metal	6	1	4	LIP	N		3	3	
852	25.8	50.5	0.0000	0.0000	Y	N	9/28/2011	6	Y	OD	N	Scrap Metal	6	2	2	LIP	N		2	1	
853	8.9	9.4	0.3281	0.3281	Y	N	9/29/2011	3	Y	OD		Scrap Metal	3	2	1	LIP	Y	Y	1	1	
853	8.9	9.4	0.3281	0.3281	Y	N	9/29/2011	3	Y	OD	N	Scrap Metal	3	2	2	LIP	Y	Y	36	36	
854	10.5	24.6	0.0000	0.1083	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		3	3	
855	12.5	21.3	0.0000	0.3281	Y	N	9/28/2011	6	Y	OD	N	Scrap Steel	6	1	1	LIP	Y	Y	36	36	
856	17.5	51.8	0.1411	0.5741	Y	N	9/28/2011	5	Y	OD	N	Scrap Steel	5	5	0.5	LIP	N		0.1	3	
857	15.5	32.7	0.0000	0.3281	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		3	3	
858	19.2	42	0.0000	0.6562	Y	N	9/28/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		1	1	
859	27	38.2	0.0000	0.2231	Y	N	9/29/2011	6	Y	OD	N	Scrap Metal	6	2	8	LIP	N		3	3	
860	228.2	945	0.9022	0.2461	Y	N	10/21/2011	2	Y	OD	N	Rebar	2	4	10	LIP	N		36	0.5	
861	84.9	119.1	0.0000	0.1083	Y	N	9/29/2011	6	Y	OD	N	Scrap Metal	6	3	8	LIP	N		4	4	
862	260.8	11286	0.9843	-0.9843	Y	N	10/21/2011	2	Y	OD	N	Scrap Steel	2	1	75	LIP	N		18	18	
863	8.8	21.4	0.4364	0.3281	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	1	0.5	LIP	N		72	0.25	
864	12	61	0.0000	0.9022	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	2	3	LIP	N		2	2	
865	53.9	64.9	0.2231	0.1083	Y	N	9/28/2011	6	Y	OD	N	Scrap Metal	6	3	4	LIP	N		2	1	
866	13.4	34.4	0.0000	0.3281	Y	N	9/29/2011	2	Y	OD	N	Scrap Steel	2	1	0.5	LIP	N		36	0.5	
867	12.5	43.5	0.0558	0.4921	Y	N	9/29/2011	3	Y	OD	N	Scrap Steel	3	1	5	LIP	N		12	3	
868	5.4	11.9	0.3281	0.4364	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	Y	Y	2	2	
869	8.6	18.8	0.0000	0.0000	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		3	3	
870	11.8	21.8	0.0000	0.1083	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		3	3	
871	183.4	300.8	0.0000	0.6562	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	6	1	LIP	N		8	0.5	
872	15.6	29.5	0.3839	0.1640	Y	N	9/29/2011	1	Y	OD	N	Scrap Steel	1	1	0.5	LIP	N		36	0.5	
873	176.6	279	0.1640	0.1640	Y	N	9/29/2011	6	Y	OD	N	Scrap Steel	6	1	1	LIP	N		48	0.25	
874	11.6	20.3	0.0000	-0.7119	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	4	8	LIP	N		3	3	
875	8	17.1	0.0000	0.1640	Y	N	9/29/2011	3	Y	OD	N	Nails	3	1	0.1	LIP	N		2	0.1	
876	28.1	40.5	0.0000	0.2461	Y	N	9/29/2011	2	Y	OD	N	Scrap Steel	2	1	0.5	LIP	Y	Y	36	0.5	
877	11.2	25.2	0.1640	0.9022	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	3	
878	13.3	25	0.1640	0.3281	Y	N	9/29/2011	6	Y	OD	N	Scrap Metal	6	1	5	LIP	N		6	4	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
879	9.9	45.6	0.0000	0.8202	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	3	2	LIP	N		1	1	
880	8.1	8.4	0.1903	0.7644	Y	N	9/29/2011	5	Y	OD	N	Nails	5	1	0.1	LIP	N		3	0.1	
881	12.9	55	0.3281	0.6562	Y	N	9/29/2011	3	Y	OD	N	Scrap Steel	3	3	0.75	LIP	N		36	0.5	
882	50.2	70.4	-0.3281	0.3281	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	2	0.5	LIP	N		0.1	8	
883	18.2	49.2	0.0000	0.5741	Y	N	9/29/2011	4	Y	OD	N	Nails	4	4	0.2	LIP	N		3	0.1	
884	68.5	111	0.0000	0.0000	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	1	0.3	LIP	N		12	0.25	
885	11.4	20.2	-0.1640	0.0000	Y	N	9/29/2011	2	Y	OD	N	Scrap Metal	2	1	0.5	LIP	Y	Y	1.5	1	
886	31	54	-0.4921	0.2723	Y	N	9/29/2011	4	Y	OD		Wire	4	1	0.1	LIP	Y	Y	8	0.1	
886	31	54	-0.4921	0.2723	Y	N	9/29/2011	4	Y	OD		Scrap Steel	2	1	0.25	LIP	Y	Y	3	3	
887	10.1	48	-0.1083	-0.6562	Y	N	9/29/2011	2	Y	OD	N	Scrap Steel	2	1	0.4	LIP	N		36	0.25	
888	84.5	123.6	0.1640	0.3839	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	1	1	LIP	Y	Y	48	0.25	
889	9.8	19.8	0.0000	0.0000	Y	N	9/29/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	Y	Y	0.1	3	
890	11.4	52.4	0.0000	0.6562	Y	N	9/29/2011	4	Y	OD	N	Nails	4	4	0.2	LIP	N		3	0.1	
891	48.4	130.2	0.0000	0.3281	Y	N	9/29/2011	2	Y	OD	N	Scrap Steel	2	2	0.2	LIP	Y	Y	6	4	
892	44.5	84.8	-0.4364	0.6562	Y	N	9/29/2011	2	Y	OD	N	Scrap Steel	2	1	0.1	LIP	N		1.5	1.5	
893	7.9	29.2	0.6562	0.1640	Y	N	9/29/2011	4	Y	OD	N	Nails	4	8	0.1	LIP	N		3	0.1	
894	7.4	9.6	0.4364	0.2461	Y	N	9/29/2011	2	Y	OD	N	Scrap Steel	2	1	1	LIP	N		108	0.5	
895	19.7	25.8	0.4921	0.0000	Y	N	9/29/2011	3	Y	OD	N	Scrap Steel	3	1	0.2	LIP	N		0.1	8	
896	13.7	37.4	0.0000	0.0000	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	1	0.5	LIP	Y	Y	1	1	
897	8.8	24.4	0.0000	0.0000	Y	N	9/29/2011	2	Y	OD	N	Scrap Steel	2	2	0.4	LIP	N		0.1	8	
898	18.7	55.4	0.0000	0.6562	Y	N	9/29/2011	4	Y	OD	N	Scrap Metal	4	4	8	LIP	N		3	2	
899	57.7	114.5	0.0000	0.0000	Y	N	9/29/2011	3	Y	OD	N	Scrap Steel	3	4	1	LIP	Y	Y	0.1	8	
900	35.9	143.9	0.9843	0.6562	Y	N	10/20/2011	4	Y	OD	N	Scrap Metal	4	2	1	LIP	Y	Y	1	1	
901	10.1	22.2	-0.1378	0.3018	Y	N	10/20/2011	2	Y	OD	N	Nails	2	2	1	LIP	N		3	0.1	
902	49	57	0.0820	0.1903	Y	N	10/20/2011	4	Y	OD	N	Scrap Metal	4	4	7	LIP	N		2	1	
903	11.3	47.4	0.0000	-0.3281	Y	N	10/20/2011	2	N								Y	Y			anomaly buried in a tree. unable to access it without a chainsaw
904	10.5	13.2	0.0000	0.5741	Y	N	10/20/2011	2	Y	OD	N	Nails	2	2	1	LIP	N		3	0.1	
905	11.9	58.6	0.8202	-0.3281	Y	N	10/20/2011	2	Y	OD	N	Pipe	2	1	1	LIP	N		7	0.75	
906	13.7	22	0.0000	0.9843	Y	N	10/20/2011	2	Y	OD	N	Nails	2	2	1	LIP	N		4	0.1	
907	25.6	34.2	0.6299	0.0000	Y	N	10/20/2011	6	Y	OD	N	Scrap Metal	6	5	8	LIP	N		2	2	
908	8.5	61.4	-0.3281	0.4921	Y	N	10/20/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		14	1	
909	8.1	12.6	0.0820	0.9580	Y	N	10/20/2011	2	Y	OD	N	Nails	2	3	0.1	LIP	N		3	0.1	
910	16.4	271	0.0000	0.0000	Y	N	10/20/2011	4	Y	OD	N	Rebar	4	1	8	LIP	N		24	0.5	
911	8.6	48	0.0000	0.9843	Y	N	9/28/2011	3	Y	OD	N	Scrap Metal	3	1	6	LIP	N		8	4	
912	7	9.5	0.0000	0.0000	Y	N	9/28/2011	6	Y	OD	N	Scrap Metal	6	3	5	LIP	N		2	2	
913	5.6	9.4	0.0000	0.6562	Y	N	9/28/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		36	0.25	
914	11.5	16.8	0.0558	0.1640	Y	N	9/28/2011	4	Y	OD	N	Scrap Steel	4	4	0.5	LIP	N		18	0.25	
915	23.5	37.1	0.0000	0.0000	Y	N	9/28/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	3	
916	34.3	88.4	0.4101	0.6562	Y	N	9/28/2011	8	Y	OD	N	Scrap Steel	8	1	2	LIP	N		18	0.3	
917	6.2	9	0.3281	0.6562	Y	N	9/28/2011	3	Y	OD	N	Scrap Metal	3	1	1	LIP	N		1	1	
918	16	22.1	0.0820	0.1640	Y	N	9/28/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	Y	Y	3	2	
919	14.9	34.5	-0.0558	0.6562	Y	N	9/28/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		3	2	
920	22.7	58.3	0.6562	0.9022	Y	N	9/28/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	Y	Y	0.1	8	
921	13	21	0.3281	0.1083	Y	N	9/28/2011	3	Y	OD	N	Scrap Metal	3	1	2	LIP	N		2	1	
922	14.5	50	0.0000	0.9843	Y	N	10/20/2011	4	Y	OD	N	Scrap Metal	4	3	4	LIP	Y	Y	2	2	
923	44.4	50.9	0.1640	0.2887	Y	N	9/28/2011	6	Y	OD	N	Pipe	6	1	2	LIP	N		6	0.75	
924	48.8	6359	0.0000	0.9843	Y	N	9/28/2011	0	Y	OD	N	Scrap Steel	0	1	5	LIP	N		6	18	
925	8.6	23.2	0.1083	0.3281	Y	N	9/28/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	Y	Y	0.1	3	
926	30.6	34	-0.1903	0.1903	Y	N	10/20/2011	4	Y	OD	N	Scrap Metal	4	5	5	LIP	N		2	2	
927	58.2	115.6	0.3281	0.2887	Y	N	9/28/2011	4	Y	OD	N	Scrap Steel	4	1	0.3	LIP	N		48	0.25	
928	9.2	14.5	0.1640	0.0000	Y	N	9/28/2011	4	Y	OD	N	Wire	4	1	0.2	LIP	N		36	0.1	
929	7.5	14	0.1083	0.0558	Y	N	9/28/2011	4	Y	OD	N	Scrap Metal	4	2	3	LIP	N		2	1	
930	9.6	16.5	0.3281	0.0558	Y	N	9/28/2011	6	Y	OD	N	Scrap Metal	6	8	10	LIP	N		3	2	
931	55.4	140.2	0.3281	0.0558	Y	N	9/28/2011	6	Y	OD	N	Scrap Steel	6	12	2	LIP	N		0.1	8	
932	25.4	36.6	0.1083	0.3281	Y	N	9/28/2011	3	Y	OD	N	Nails	3	12	0.25	LIP	N		3	0.1	
933	58.1	108.1	0.3281	0.1083	Y	N	9/28/2011	4	Y	OD	N	Pipe	4	1	1.5	LIP	N		2	2	
934	18.7	38	0.1640	0.3839	Y	N	9/28/2011	4	Y	OD	N	Wire	4	3	0.2	LIP	N		6	0.1	
935	9.8	21	-0.0558	0.6168	Y	N	9/28/2011	2	Y	OD	N	Scrap Steel	2	1	0.1	LIP	N		1.5	1.5	
936	5.4	9	0.5741	0.0000	Y	N	9/28/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
937	16.1	31	-0.6562	0.5741	Y	N	10/20/2011	4	Y	OD	N	Scrap Metal	4	3	5	LIP	N		1	1	
938	18.8	29.4	0.3839	0.0000	Y	N	9/28/2011	4	Y	OD	N	Nails	4	6	0.2	LIP	N		4	0.1	
939	57.9	130.6	0.3281	0.0000	Y	N	9/28/2011	4	Y	OD	N	Scrap Steel	4	2	0.2	LIP	N		6	3	
940	11.6	14.6	0.0558	0.1083	Y	N	9/28/2011	6	Y	OD	N	Scrap Metal	6	1	5	LIP	N		4	3	
941	35.8	41.5	-0.2461	-0.1640	Y	N	10/20/2011	4	Y	OD	N	Scrap Metal	4	3	4	LIP	N		2	2	
942	8.2	11.1	0.1083	0.1640	Y	N	9/28/2011	4	Y	OD	N	Scrap Metal	4	1	0.5	LIP	N		0.5	0.5	
943	8.7	20.9	-0.3281	-0.3281	Y	N	9/28/2011	6	Y	OD	N	Wire	6	1	0.2	LIP	N		36	0.1	
943	8.7	20.9	-0.3281	-0.3281	Y	N	9/28/2011	6	Y	OD	N	Scrap Metal	4	1	2	LIP	N		2	1	
944	36.9	55.6	0.0000	0.0000	Y	N	9/28/2011	4	Y	OD	N	Scrap Steel	4	1	0.1	LIP	N		1.5	1.5	
945	21	25	0.3281	0.0000	Y	N	9/28/2011	2	Y	OD	N	Scrap Steel	2	0	0.3	LIP	N		4	0.25	
946	5.1	5.2	0.0000	0.3281	Y	N	9/28/2011	3	Y	OD	N	Scrap Steel	3	1	0.2	LIP	N		0.1	8	
947	34.9	44	0.0000	0.0000	Y	N	9/28/2011	6	Y	OD	N	Scrap Metal	6	1	4	LIP	N		4	2	
948	9.5	14.8	0.0000	0.0000	Y	N	9/28/2011	8	Y	OD	N	Scrap Metal	8	2	3	LIP	N		2	1	
949	7.5	43.9	0.5741	0.7644	Y	N	9/28/2011	2	Y	OD	N	Scrap Steel	2	1	0.75	LIP	N		1.5	1.5	
950	704.1	1172	0.0000	0.6562	Y	N	9/28/2011	2	Y	OD	N	Scrap Steel	2	2	2	LIP	N		48	0.25	
951	9.1	10.8	-0.4921	0.0820	Y	N	10/20/2011	2	Y	OD	N	Nails	2	2	0.5	LIP	N		4	0.1	
952	34.3	125.7	0.1083	0.7119	Y	N	9/28/2011	6	Y	OD	N	Scrap Metal	6	3	10	LIP	N		8	3	
953	6.6	14.8	-0.4364	-0.6562	Y	N	9/28/2011	5	Y	OD	N	Scrap Metal	5	4	5	LIP	N		2	2	
954	24	55	-0.5741	-0.9449	Y	N	9/28/2011	4	Y	OD	N	Wire	4	8	0.35	LIP	N		8	0.1	
955	15.5	45.3	0.0558	0.1640	Y	N	9/28/2011	4	Y	OD	N	Wire	4	1	0.1	LIP	N		36	0.1	
956	6.2	9.3	-0.2461	-0.1083	Y	N	10/20/2011	2	Y	OD	N	Nails	2	1	0.5	LIP	N		4	0.1	
957	20	27.5	0.6562	0.3281	Y	N	9/28/2011	5	Y	OD	N	Nails	5	3	0.2	LIP	N		3	0.1	
958	9.2	14.3	0.0000	-0.2461	Y	N	9/28/2011	3	Y	OD	N	Scrap Steel	3	1	0.2	LIP	N		0.1	3	
959	17.3	43.6	0.1083	0.4921	Y	N	9/28/2011	3	Y	OD	N	Scrap Metal	3	1	0.2	LIP	N		0.1	3	
960	13.6	15.4	0.2461	0.3281	Y	N	9/28/2011	3	Y	OD	N	Scrap Steel	3	2	0.4	LIP	N		0.1	3	
961	17.1	24.2	0.2461	0.2461	Y	N	9/28/2011	3	Y	OD	N	Scrap Metal	3	1	2	LIP	N		2	1	
962	20.7	26.3	0.3839	0.1083	Y	N	9/28/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
963	23.7	35.7	0.6562	0.0000	Y	N	9/28/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
964	11.5	68.3	0.4364	0.1083	Y	N	9/28/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		0.1	8	
965	10.7	16.2	0.0000	0.0000	Y	N	9/28/2011	2	Y	OD	N	Scrap Metal	2	1	1	LIP	N		36	36	
966	18	36.2	0.0820	0.1083	Y	N	9/28/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		12	0.25	
967	9.3	11.4	0.1640	0.0558	Y	N	9/28/2011	3	Y	OD	N	Scrap Metal	3	1	3	LIP	N		4	3	
968	12.1	183	0.9843	0.0000	Y	N	10/20/2011	6	Y	OD	N	Nails	6	24	3	LIP	Y	Y	4	0.1	
969	7.9	15	-0.1903	-0.3281	Y	N	10/20/2011	2	Y	OD	N	Bolt	2	1	1	LIP	N		6	0.2	
970	12.8	14.5	0.1083	0.1640	Y	N	9/28/2011	4	Y	OD	N	Nails	4	2	0.1	LIP	N		3	0.1	
971	29.1	50.6	0.3117	0.6562	Y	N	9/28/2011	4	Y	OD	N	Scrap Metal	4	1	6	LIP	N		6	4	
972	8.5	11.2	5.5774	0.3281	Y	N	9/28/2011	0	Y	OD	N	Scrap Steel	0	1	0.2	LIP	N		0.1	8	
973	134.3	250.3	0.1640	0.3839	Y	N	9/28/2011	5	Y	OD	N	Scrap Steel	5	1	3	LIP	N		8	2	
974	26.2	47.2	0.0000	0.0000	Y	N	9/28/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	8	
975	44.9	119.8	0.0000	-0.3839	Y	N	9/28/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		0.1	8	
976	5.1	11.8	-0.1640	0.0000	Y	N	10/20/2011	4	Y	OD	N	Scrap Metal	4	3	4	LIP	N		2	2	
977	134	568.4	0.1083	0.4921	Y	N	9/28/2011	4	Y	OD	N	Nails	4	100	5	LIP	N		3	0.1	
978	6	22.5	0.0000	0.3839	Y	N	9/28/2011	3	Y	OD	N	Scrap Steel	3	1	0.2	LIP	N		0.1	3	
979	57.6	125.4	0.0000	-0.3281	Y	N	9/28/2011	4	Y	OD	N	Scrap Steel	4	2	1	LIP	N		48	0.25	
980	14.6	24.9	0.0000	0.0000	Y	N	10/20/2011	4	Y	OD	N	Scrap Metal	4	3	4	LIP	N		2	2	
981	20.9	30	0.0000	0.5741	Y	N	10/20/2011	4	Y	OD	N	Pipe	4	1	2	LIP	N		4	1	
982	204.4	546	0.0000	0.9843	Y	N	9/28/2011	3	Y	OD	N	Nails	3	1000	5	LIP	N		3	0.1	
983	45.5	90.9	0.0000	0.3839	Y	N	9/28/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		36	36	
984	29	28.7	-0.1640	0.9022	Y	N	10/20/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	Y	Y	36	36	
985	25.5	85.2	0.8202	0.0000	Y	N	9/28/2011	3	Y	OD	N	Nails	3	100	2	LIP	N		3	0.1	
986	21.3	200.6	0.2461	0.9843	Y	N	9/28/2011	48	Y	OD	N	Scrap Steel	48	2	10	LIP	Y	Y	48	0.25	
987	62.4	218	-0.3281	-0.6562	Y	N	9/28/2011	3	Y	OD	N	Scrap Steel	3	5	3	LIP	N		6	4	
988	39.2	60.2	-0.0820	0.8202	Y	N	10/20/2011	2	N								Y	Y			anomaly buried inside a tree.
989	30.5	52	-0.8202	0.0000	Y	N	10/20/2011	3	Y	OD	N	Scrap Steel	3	3	3	LIP	N		4	2	
990	7.2	42.3	0.1640	0.0000	Y	N	9/28/2011	2	Y	OD	N	Nails	2	1	0.1	LIP	N		3	0.1	
991	32.4	56	0.0558	0.0000	Y	N	9/28/2011	4	Y	OD	N	Scrap Metal	4	1	5	LIP	N		6	4	
992	22.2	75.7	0.0000	0.8202	Y	N	9/28/2011	4	Y	OD	N	Scrap Metal	4	1	5	LIP	N		6	4	
993	14.1	41.2	0.0558	0.3281	Y	N	9/28/2011	3	Y	OD	N	Scrap Steel	3	2	0.5	LIP	N		6	0.2	
994	29.9	54.2	-0.3281	0.0000	Y	N	9/28/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
995	104.4	236	0.0000	-0.3281	Y	N	10/20/2011	4	Y	OD	N	Pipe	4	2	4	LIP	N		2	2	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
996	18.3	29.2	0.1640	0.0000	Y	N	10/20/2011	2	Y	OD	N	Nails	2	4	0.1	LIP	Y	Y	3	0.1	
997	13.9	30.9	0.0558	0.1083	Y	N	9/28/2011	2	Y	OD	N	Scrap Metal	2	1	1	LIP	N		1	1	
998	17.6	20.9	0.0000	0.0000	Y	N	9/28/2011	7	Y	OD	N	Scrap Metal	7	5	6	LIP	N		2	1	
999	41	55.5	0.0000	0.0000	Y	N	9/28/2011	3	Y	OD	N	Scrap Steel	3	1	0.2	LIP	Y	Y	48	0.25	
1000	10	12.2	0.0000	0.0000	Y	N	9/28/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	N		3	2	
1001	4258	8882	0.1640	0.1083	Y	N	9/28/2011	7	Y	OD	N	Scrap Steel	7	1	150	LIP	N		180	4	
1002	24.9	35.9	0.0000	0.0000	Y	N	9/28/2011	3	Y	OD	N	Scrap Steel	3	1	2	LIP	N		2	3	
1003	433.9	775	-0.1640	-0.1640	Y	N	10/10/2011	4	Y	OD	N	Scrap Steel	4	1	5	LIP	N		48	0.5	
1004	48.5	65	-0.3281	0.0000	Y	N	10/11/2011	4	Y	OD	N	Nails	4	12	1	LIP	N		6	0.1	
1005	6.6	17.4	-0.0558	0.6398	Y	N	9/28/2011	3	Y	OD	N	Scrap Steel	3	1	0.2	LIP	N		12	0.25	
1006	76.2	208.4	0.0000	-0.9843	Y	N	9/28/2011	12	Y	OD	N	Other	12	1	100	LIP	N		48	36	
1007	18	171	0.1903	0.9022	Y	N	10/11/2011	4	Y	OD	N	Nails	4	50	2	LIP	N		6	0.1	
1008	7.1	33.5	0.0000	0.9843	Y	N	9/28/2011	7	Y	OD	N	Scrap Metal	7	4	4	LIP	N		2	1	
1009	33.6	146.7	0.0000	-0.6562	Y	N	9/28/2011	6	Y	OD	N	Scrap Metal	6	2	1	LIP	N		1	1	
1010	67.2	145.8	-0.0820	-0.2461	Y	N	10/11/2011	4	Y	OD	N	Nails	4	24	2	LIP	N		6	0.1	
1011	20.9	51.9	-0.2461	0.3281	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	Y	Y	36	36	
1012	12.2	37.5	-0.1640	-0.4101	Y	N	10/11/2011	2	Y	OD	N	Scrap Metal	2	1	4	LIP	N		6	3	
1013	46.6	2775	0.0000	0.9843	Y	N	9/28/2011	1	Y	OD	N	Scrap Metal	1	1	15	LIP	N		8	8	
1014	15.4	20.2	0.3839	0.0000	Y	N	9/28/2011	6	Y	OD	N	Scrap Steel	6	1	0.2	LIP	N		0.1	8	
1015	10.8	54.2	0.0000	0.9580	Y	N	9/28/2011	2	Y	OD	N	Scrap Steel	2	1	0.25	LIP	N		0.1	3	
1016	8.8	13.7	0.3281	0.1083	Y	N	9/28/2011	6	Y	OD	N	Scrap Metal	6	5	4	LIP	N		2	1	
1017	24.4	99.5	0.4265	-0.9186	Y	N	9/28/2011	3	Y	OD	N	Wire	3	1	2	LIP	N		30	0.1	
1018	16.5	46	-0.0558	0.7382	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1019	5.6	19.5	0.0328	-0.3773	Y	N	9/28/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	8	
1020	10.3	22.2	0.0000	0.1640	Y	N	9/28/2011	3	Y	OD	N	Scrap Steel	3	1	5	LIP	Y	Y	72	0.25	
1021	13.1	15.6	0.3281	0.0000	Y	N	9/28/2011	2	Y	OD		Scrap Steel	2	1	0.2	LIP	Y	Y	0.1	3	
1021	13.1	15.6	0.3281	0.0000	Y	N	9/28/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	Y	Y	0.1	3	
1022	9.4	429.7	-0.1903	0.9843	Y	N	10/11/2011	6	Y	OD	N	Scrap Steel	6	1	15	LIP	N		8	4	
1023	263.9	576.8	0.0000	0.3281	Y	N	9/28/2011	3	Y	OD	N	Fence Post	3	1	10	LIP	N		60	3	
1024	63.5	88	-0.7382	0.7644	Y	N	10/11/2011	24	Y	OD	N	Wire	2	1	0.2	LIP	Y	Y	36	0.125	
1024	63.5	88	-0.7382	0.7644	Y	N	10/11/2011	24	Y	OD		Other	24	1	1	LIP	Y	Y	36	36	
1025	11.6	18.2	-0.3281	-0.0558	Y	N	10/11/2011	1	Y	OD	N	Scrap Metal	1	1	1	LIP	N		36	36	
1026	9.1	13.5	0.1083	0.1083	Y	N	9/28/2011	6	Y	OD	N	Scrap Metal	6	1	0.5	LIP	N		1	1	
1027	18.6	23.8	-0.1640	0.0000	Y	N	10/11/2011	2	Y	OD	N	Scrap Metal	2	1	1	LIP	N		2	1	
1028	8.3	10.7	-0.4921	0.0000	Y	N	10/20/2011	4	Y	OD	N	Scrap Metal	4	4	5	LIP	Y	Y	2	2	
1029	34.7	52	-0.2067	0.2461	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1030	15.5	34.7	0.0000	0.0000	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1031	25.2	34.3	-0.1640	-0.1083	Y	N	9/28/2011	3	Y	OD	N	Scrap Metal	3	1	3	LIP	N		4	2	
1032	369.1	465.5	-0.0558	-0.3281	Y	N	10/11/2011	2	Y	OD	N	Nails	2	200	5	LIP	N		6	0.1	
1033	7.6	28.1	-0.1083	-0.8202	Y	N	9/28/2011	1	Y	OD	N	Nails	1	1	0.1	LIP	N		2	0.1	
1034	27.6	11524	0.0000	0.9843	Y	N	10/20/2011	0	Y	OD	N	Other	0	1	90	LIP	N		8	36	
1035	190	271	-0.3018	0.1903	Y	N	10/20/2011	0	Y	OD	N	Scrap Steel	0	1	3	LIP	N		12	2	
1036	79.8	119.2	0.1640	-0.6562	Y	N	10/11/2011	36	Y	OD	N	Pipe	36	1	1	LIP	N		36	8	
1037	21.3	36.1	0.0164	0.3281	Y	N	9/28/2011	10	Y	OD	N	Scrap Metal	10	1	7	LIP	N		5	4	
1038	6.2	20.1	-0.5577	0.0820	Y	N	9/28/2011	2	Y	OD	N	Scrap Metal	2	1	0.5	LIP	N		1	1	
1039	9.8	24.8	0.0000	0.6562	Y	N	9/28/2011	3	Y	OD	N	Nails	3	6	0.2	LIP	N		2	0.1	
1040	62	148.5	0.0000	0.4101	Y	N	10/11/2011	2	Y	OD	N	Pipe	2	1	1	LIP	N		1	4	
1041	7.8	19.2	-0.3018	-0.4921	Y	N	10/11/2011	6	Y	OD	N	Scrap Metal	6	2	4	LIP	N		2	2	
1042	14.1	33.7	-0.8202	0.0000	Y	N	9/28/2011	8	Y	OD	N	Scrap Metal	8	3	4	LIP	N		2	2	
1043	18.7	27.2	0.0000	0.0000	Y	N	9/28/2011	2	Y	OD	N	Nails	2	2	0.1	LIP	N		2	0.1	
1044	21.3	39.2	-0.2953	-0.2953	Y	N	9/28/2011	2	Y	OD	N	Wire	2	1	0.2	LIP	N		36	0.1	
1045	385	2558	-0.3281	0.6299	Y	N	10/11/2011	2	Y	OD	N	Other	2	1	1	LIP	N		36	36	
1046	27.1	29	0.0000	-0.3281	Y	N	10/11/2011	4	Y	OD	N	Nails	4	6	1	LIP	N		6	0.1	
1047	69.9	131.1	0.0820	0.2297	Y	N	9/28/2011	6	Y	OD	N	Scrap Steel	6	1	2	LIP	Y	Y	48	0.25	
1048	9	32.8	0.1640	0.6562	Y	N	10/20/2011	4	Y	OD	N	Scrap Metal	4	3	8	LIP	N		6	4	
1049	10.4	16.9	0.0000	-0.6562	Y	N	9/28/2011	3	Y	OD	N	Nails	3	1	0.1	LIP	N		1	0.1	
1050	8.8	11.5	-0.4921	0.0558	Y	N	9/28/2011	6	Y	OD	N	Scrap Metal	6	4	3	LIP	N		2	1	
1051	6	10.6	-0.0558	-0.0558	Y	N	9/28/2011	2	Y	OD	N	Nails	2	1	0.1	LIP	N		2	0.1	
1052	9	19	-0.1083	0.1378	Y	N	9/28/2011	12	N								N				
1053	12	21.8	0.0000	0.3281	Y	N	9/28/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		0.1	3	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
1054	36.5	121.4	-0.1378	-0.2067	Y	N	10/11/2011	4	Y	OD	N	Nails	4	12	2	LIP	N		6	0.1	
1055	20.4	39.3	0.1083	0.1640	Y	N	9/28/2011	3	Y	OD	N	Scrap Metal	3	1	1	LIP	Y	Y	2	1	
1056	7.4	38.1	0.0000	0.9285	Y	N	9/28/2011	4	Y	OD	N	Scrap Metal	4	2	2	LIP	N		1	1	
1057	9.2	11.1	0.3281	0.3281	Y	N	9/28/2011	6	Y	OD	N	Scrap Metal	6	4	3	LIP	N		1	1	
1058	19.9	26.3	0.0000	0.0000	Y	N	9/28/2011	4	Y	OD	N	Scrap Steel	4	1	0.5	LIP	N		72	0.25	
1059	7.7	15.4	0.3281	0.6562	Y	N	9/28/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		0.1	8	
1060	24.6	44.8	0.2461	0.1083	Y	N	9/28/2011	6	Y	OD	N	Scrap Metal	6	3	4	LIP	N		2	1	
1061	10.9	14.7	0.0820	0.0328	Y	N	9/28/2011	3	Y	OD	N	Wire	3	1	0.1	LIP	Y	Y	12	0.1	
1062	41.4	55.1	0.0000	0.0000	Y	N	9/28/2011	3	Y	OD	N	Scrap Metal	3	2	2	LIP	Y	Y	36	36	
1063	77.7	154.6	0.0000	-0.9580	Y	N	9/28/2011	2	Y	OD	N	Scrap Steel	2	1	2	LIP	N		48	0.25	
1064	19.8	30.1	0.1640	0.0000	Y	N	10/11/2011	4	Y	OD	N	Nails	4	8	1	LIP	N		6	0.1	
1065	6.3	90.8	-0.1083	-0.9843	Y	N	9/28/2011	3	Y	OD	N	Scrap Steel	3	1	2	LIP	N		48	0.25	
1066	16.7	260.2	0.0000	0.9449	Y	N	9/28/2011	12	Y	OD	N	Scrap Steel	12	1	20	LIP	N		24	12	
1067	13	24.2	0.1640	0.0000	Y	N	9/28/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		0.1	3	
1068	16.3	37.7	0.2461	0.6562	Y	N	9/28/2011	2	Y	OD	N	Nails	2	1	0.1	LIP	N		2	0.1	
1069	15.7	19.1	0.3281	0.6562	Y	N	9/28/2011	3	Y	OD	N	Nails	3	1	0.1	LIP	N		2	0.1	
1070	21.1	28.5	0.0000	0.0000	Y	N	9/28/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		2	1	
1071	112.1	167.3	-0.3018	0.0000	Y	N	10/11/2011	2	Y	OD	N	Scrap Steel	2	1	1	LIP	Y	Y	0.1	8	
1072	72	4970	0.0000	0.9843	Y	N	9/28/2011	5	Y	OD	N	Scrap Steel	5	1	10	LIP	N		8	18	
1073	5	33.1	0.1640	0.0000	Y	N	9/28/2011	2	Y	OD	N	Scrap Steel	2	2	5	LIP	N		3	3	
1074	29.1	48	0.0000	0.8202	Y	N	9/28/2011	3	Y	OD	N	Scrap Steel	3	1	0.2	LIP	N		36	0.25	
1075	57.5	76.2	0.0000	0.9678	Y	N	9/28/2011	5	Y	OD	N	Scrap Steel	5	2	5	LIP	N		3	3	
1076	6.2	6.8	0.0000	0.0000	Y	N	9/28/2011	7	Y	OD	N	Scrap Metal	7	1	4	LIP	N		4	4	
1077	6.4	12.5	-0.0820	0.3281	Y	N	9/28/2011	3	Y	OD	N	Scrap Metal	3	2	1	LIP	N		1	1	
1078	132.8	624.7	0.0000	0.0000	Y	N	10/11/2011	0	Y	OD	N	Other	0	1	1	LIP	N		24	24	
1079	26.7	82.4	0.0000	0.4921	Y	N	9/27/2011	6	Y	OD	N	Scrap Metal	6	3	8	LIP	N		4	4	
1080	22.4	52.6	-0.1640	-0.3839	Y	N	9/27/2011	2	Y	OD	N	Scrap Metal	2	1	8	LIP	N		8	4	
1081	63.8	190.5	0.0000	0.0000	Y	N	9/27/2011	4	Y	OD	N	Scrap Steel	4	1	0.3	LIP	N		3	3	
1082	181.4	11622	-0.4101	-0.9285	Y	N	9/27/2011	0	Y	OD	N	Scrap Steel	0	1	5	LIP	N		12	18	
1083	35.7	79.4	0.0000	0.0000	Y	N	9/27/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		8	0.5	
1084	22.8	46.8	0.2461	0.2067	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1085	109.3	5214	0.6562	0.9843	Y	N	9/27/2011	24	Y	OD	N	Trash Pit	24	1	500	LIP	N		36	36	
1086	9.8	28.5	-0.0820	-0.1640	Y	N	9/27/2011	4	Y	OD	N	Scrap Metal	4	8	2	LIP	N		0.25	0.25	
1087	52.3	88.4	-0.1640	0.0000	Y	N	10/11/2011	6	Y	OD	N	Scrap Metal	6	3	10	LIP	N		4	4	
1088	6.1	47.5	0.2461	-0.2461	Y	N	10/11/2011	2	Y	OD	N	Scrap Steel	2	1	0.5	LIP	N		0.1	8	
1089	119.3	538	-0.9843	-0.9843	Y	N	10/11/2011	2	Y	OD	N	Rebar	2	1	70	LIP	N		36	36	
1090	14.8	26.8	0.1640	0.0000	Y	N	9/28/2011	1	Y	OD	N	Wire	1	1	0.1	LIP	N		48	0.1	
1091	23.5	53.8	0.1640	0.3839	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1092	49.9	79.4	0.0000	0.1640	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1093	16.7	21.9	0.6562	0.3018	Y	N	9/28/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		24	0.25	
1094	72.8	641.8	0.3281	0.6562	Y	N	10/11/2011	6	Y	OD	N	Nails	6	200	5	LIP	N		6	0.1	
1095	13	35.5	0.7119	0.4364	Y	N	9/28/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		24	0.25	
1096	99.6	255.9	0.3281	0.6562	Y	N	9/27/2011	4	Y	OD	N	Scrap Steel	4	1	1	LIP	N		96	0.5	
1097	14.7	36.9	0.3281	0.3281	Y	N	9/27/2011	4	Y	OD	N	Cable	4	1	2	LIP	N		14	0.33	
1098	25.3	43	0.3281	0.0000	Y	N	9/28/2011	4	Y	OD	N	Nails	4	6	0.2	LIP	Y	Y	3	0.1	
1098	25.3	43	0.3281	0.0000	Y	N	9/28/2011	4	Y	OD		Scrap Steel	3	1	1	LIP	Y	Y	36	0.75	
1099	4607.3	11690	0.0000	0.9843	Y	N	9/27/2011	6	Y	OD	N	Scrap Steel	6	1	10	LIP	N		12	8	
1100	47	46.3	0.0000	0.0000	Y	N	10/10/2011	5	Y	OD	N	Scrap Metal	5	1	1	LIP	N		36	36	
1101	12.7	40.2	0.3281	0.0820	Y	N	9/28/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		36	0.25	
1102	6.3	16.4	0.4921	0.9843	Y	N	9/28/2011	4	Y	OD	N	Scrap Metal	4	3	3	LIP	N		1	1	
1103	2081.3	2713	-0.2461	-0.2067	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	Y	Y	36	36	
1104	9.4	36.2	0.0000	0.0000	Y	N	9/27/2011	3	Y	OD	N	Scrap Metal	3	3	2	LIP	N		1	1	
1105	11.8	28.6	0.3281	0.0000	Y	N	9/28/2011	2	Y	OD	N	Scrap Steel	2	1	0.1	LIP	N		6	0.25	
1106	10.5	21.5	0.0000	0.4921	Y	N	9/28/2011	2	Y	OD	N	Nails	2	2	0.1	LIP	N		2	0.1	
1107	13.3	23.6	0.2723	0.1640	Y	N	9/28/2011	3	Y	OD	N	Scrap Steel	3	1	0.2	LIP	N		24	0.25	
1108	12.2	16.2	-0.6562	0.4921	Y	N	9/28/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		24	0.25	
1109	9	13.4	-0.3839	-0.6562	Y	N	9/27/2011	4	Y	OD	N	Scrap Metal	4	3	2	LIP	N		1	1	
1110	10	35.2	0.3281	0.0000	Y	N	9/27/2011	3	Y	OD	N	Wire	3	1	0.3	LIP	N		18	0.1	
1111	753.3	1172	-0.8202	0.0000	Y	N	9/27/2011	4	Y	OD	N	Scrap Metal	4	1	30	LIP	N		11	8	
1112	17.4	34.4	0.0000	0.4921	Y	N	9/28/2011	4	Y	OD	N	Nails	4	6	0.2	LIP	N		3	0.1	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
1113	305.6	414.1	-0.0820	0.3281	Y	N	10/10/2011	6	Y	OD	N	Scrap Metal	6	3	6	LIP	N		2	2	
1114	5.1	30	-0.0820	-0.3281	Y	N	10/10/2011	6	Y	OD	N	Scrap Metal	6	3	6	LIP	N		2	2	
1115	69.4	1205	0.0000	0.9580	Y	N	9/27/2011	4	Y	OD	N	Scrap Steel	4	6	2	LIP	Y	Y	0.1	8	
1115	69.4	1205	0.0000	0.9580	Y	N	9/27/2011	4	Y	OD		Other	4	1	1	LIP	Y	Y	24	24	
1116	141.5	3165	0.0000	0.6562	Y	N	9/28/2011	4	Y	OD	N	Scrap Steel	4	1	5	LIP	N		8	18	
1117	8.7	26.2	-0.3839	-0.7382	Y	N	9/27/2011	1	Y	OD	N	Scrap Steel	1	1	0.1	LIP	Y	Y	1.5	1.5	
1118	11.3	39.6	0.0000	0.0000	Y	N	9/27/2011	2	Y	OD	N	Scrap Steel	2	1	1	LIP	N		8	6	
1119	8.5	14	0.0000	0.5741	Y	N	9/28/2011	4	Y	OD	N	Scrap Steel	4	1	0.3	LIP	N		72	0.25	
1120	30.2	62	0.1640	0.3281	Y	N	9/28/2011	8	Y	OD	N	Rebar	8	1	2	LIP	N		36	0.3	
1121	42	63.5	0.2461	0.0558	Y	N	9/28/2011	6	Y	OD	N	Scrap Metal	6	3	3	LIP	N		2	2	
1122	1941.8	2915	0.6562	0.0558	Y	N	9/27/2011	4	Y	OD	N	Other	4	1	2000	LIP	N		36	36	
1123	61.8	150.4	0.0000	0.6562	Y	N	9/28/2011	2	Y	OD	N	Nails	2	24	0.2	LIP	N		3	0.1	
1124	32.8	80.5	0.0000	0.3839	Y	N	9/27/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1125	23.8	38.2	0.1640	0.0820	Y	N	9/28/2011	4	Y	OD	N	Scrap Metal	4	2	2	LIP	N		1	1	
1126	12.2	27.4	0.1640	0.0000	Y	N	9/28/2011	4	Y	OD	N	Scrap Metal	4	3	3	LIP	Y	Y	1	1	
1127	125.4	3165	0.9580	0.4921	Y	N	9/28/2011	4	Y	OD	N	Scrap Steel	4	1	5	LIP	N		8	18	
1128	25.4	139.2	0.0000	0.7382	Y	N	9/28/2011	8	Y	OD	N	Scrap Metal	8	4	4	LIP	N		2	2	
1129	12.7	36.7	0.3281	0.4101	Y	N	9/28/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	3	
1130	19.5	33.6	0.0000	0.8202	Y	N	9/28/2011	4	Y	OD	N	Scrap Metal	4	3	3	LIP	N		1	1	
1131	365.8	608	0.4921	0.6562	Y	N	9/28/2011	2	Y	OD	N	Scrap Steel	2	1	20	LIP	N		10	10	
1132	16.2	81	-0.2067	-0.4364	Y	N	10/11/2011	1	Y	OD	N	Wire	1	3	2	LIP	N		20	0.1	
1133	351.6	704.1	0.3281	0.3281	Y	N	9/28/2011	2	Y	OD	N	Scrap Steel	2	1	10	LIP	N		36	0.5	
1134	8.8	26.2	0.0000	0.4921	Y	N	9/27/2011	3	Y	OD	N	Scrap Steel	3	1	0.2	LIP	N		18	0.25	
1135	102.8	139.5	0.0000	0.0000	Y	Y											N				
1136	8.1	20.1	0.3281	0.6562	Y	N	9/28/2011	6	Y	OD	N	Scrap Metal	6	4	5	LIP	N		2	2	
1137	5.3	9	0.1640	0.0000	Y	N	9/28/2011	4	Y	OD	N	Scrap Metal	4	1	0.5	LIP	N		1	1	
1138	12.8	42.9	-0.0820	0.2461	Y	N	10/11/2011	2	Y	OD	N	Wire	2	1	0.2	LIP	N		36	0.1	
1139	1059.1	11805	0.1640	0.3839	Y	N	9/27/2011	1	Y	OD	N	Scrap Steel	1	1	10	LIP	N		18	18	
1140	30.7	658.4	0.7644	0.9580	Y	N	9/27/2011	3	Y	OD	N	Scrap Steel	3	1	1	LIP	N		72	0.5	
1141	18	82	0.4364	0.7119	Y	N	9/28/2011	3	Y	OD	N	Scrap Steel	3	1	0.1	LIP	N		5	2	
1142	14.7	41.7	0.0000	0.6562	Y	N	9/28/2011	2	Y	OD	N	Nails	2	4	0.1	LIP	N		2	0.1	
1143	12.9	40.9	0.0000	0.7119	Y	N	9/28/2011	4	Y	OD	N	Nails	4	3	0.1	LIP	N		2	0.1	
1144	11.6	25.3	0.0000	0.4921	Y	N	9/28/2011	8	Y	OD	N	Scrap Metal	8	3	2	LIP	Y	Y	1	1	
1145	20.8	130.3	0.4364	0.6562	Y	N	9/28/2011	2	Y	OD	N	Scrap Steel	2	1	0.25	LIP	N		6	4	
1146	13.6	23.7	0.3281	0.3281	Y	N	9/28/2011	2	Y	OD	N	Scrap Steel	2	1	0.1	LIP	N		1.5	1.5	
1147	30.1	77.1	0.0000	-0.4921	Y	N	10/11/2011	4	Y	OD	N	Nails	4	5	2	LIP	N		4	0.1	
1148	33.9	78	0.1640	0.6562	Y	N	9/28/2011	3	Y	OD	N	Scrap Steel	3	1	0.2	LIP	N		0.1	3	
1149	21.8	45	0.0820	0.3839	Y	N	9/28/2011	4	Y	OD	N	Nails	4	6	0.2	LIP	N		2	0.1	
1150	7.5	9.7	0.0820	0.4101	Y	N	10/11/2011	1	Y	OD	N	Nails	1	1	0.1	LIP	N		6	0.1	
1151	10.9	34.9	0.0000	0.1640	Y	N	10/11/2011	2	Y	OD	N	Bolt	2	1	0.5	LIP	N		4	0.5	
1152	15	26.5	-0.5741	0.0000	Y	N	10/11/2011	4	Y	OD	N	Nails	4	12	0.25	LIP	N		6	0.1	
1153	9.2	11.2	0.6299	0.6562	Y	N	9/27/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1154	9.3	8	0.0000	0.0000	Y	N	9/28/2011	4	Y	OD	N	Wire	4	1	0.1	LIP	N		18	0.1	
1155	21.3	52.8	0.0000	0.0000	Y	N	10/11/2011	4	Y	OD	N	Nails	4	50	1	LIP	N		6	0.1	
1156	27	52.3	0.1903	-0.2067	Y	N	10/11/2011	6	Y	OD	N	Nails	6	30	1	LIP	N		6	0.1	
1157	6.4	25.6	0.0000	0.7382	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	2	5	LIP	N		4	3	
1158	26.6	86.8	-0.0820	0.4364	Y	N	10/11/2011	12	Y	OD	N	Other	12	1	1	LIP	N		24	24	
1159	53.2	205	-0.0558	-0.3281	Y	N	10/11/2011	6	Y	OD	N	Scrap Steel	6	1	5	LIP	N		10	1	
1160	5.7	22.9	0.0000	-0.1640	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	3	3	LIP	N		1	1	
1161	15	155.5	-0.3281	0.9022	Y	N	10/11/2011	6	Y	OD	N	Nails	6	50	1	LIP	N		6	0.1	
1162	61.3	203.9	0.0558	0.2461	Y	N	10/11/2011	6	Y	OD	N	Nails	6	50	1	LIP	N		6	0.1	
1163	37.9	136.2	-0.1083	0.4101	Y	N	10/11/2011	4	Y	OD	N	Nails	4	50	1	LIP	N		6	0.1	
1164	15.1	100.8	-0.3281	0.4921	Y	N	10/11/2011	6	Y	OD	N	Nails	6	50	1	LIP	N		6	0.1	
1165	5.7	80.2	0.0000	-0.9843	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1166	11.2	32	0.0000	0.5741	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1167	27.4	86.8	0.3281	-0.2461	Y	N	10/10/2011	2	Y	OD	N	Scrap Steel	2	4	2	LIP	N		96	0.5	
1168	29.7	66.8	0.2461	0.1640	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1169	9.1	26.2	0.0000	0.0000	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1170	27.9	68	0.0000	0.0000	Y	N	10/10/2011	2	Y	OD	N	Scrap Steel	2	2	1	LIP	N		72	0.5	
1171	36.4	63	0.0000	0.6562	Y	N	9/27/2011	3	Y	OD	N	Scrap Steel	3	1	0.2	LIP	N		3	2	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12,168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
1172	8	46.9	0.0000	-0.4364	Y	N	9/27/2011	4	Y	OD	N	Bolt	4	1	0.2	LIP	N		4	0.2	
1173	10.8	23.6	0.0000	0.3281	Y	N	9/27/2011	3	Y	OD	N	Wire	3	1	0.1	LIP	N		12	0.1	
1174	143.2	204	0.0000	0.0000	N	Y	10/10/2011	0	Y	OD	N	Nails	0	1	0.1	LIP	N		10	0.1	
1175	311.3	714	-0.3281	0.8202	Y	N	10/10/2011	24	Y	OD	N	Pipe	24	1	10	LIP	N		36	18	
1176	41.9	53	0.0820	0.0820	Y	N	10/10/2011	2	Y	OD	N	Nails	2	6	0.3	LIP	N		6	0.1	
1177	27.9	28.5	0.0000	0.3281	Y	N	10/10/2011	2	Y	OD	N	Nails	2	6	0.1	LIP	N		4	0.1	
1178	19.2	54.1	0.3281	0.6562	Y	N	9/27/2011	2	Y	OD	N	Scrap Metal	2	1	2	LIP	N		2	2	
1179	39.7	57.3	0.3839	-0.3281	Y	N	9/27/2011	4	Y	OD	N	Scrap Steel	4	1	0.1	LIP	N		8	0.25	
1180	8.3	15.4	0.3018	0.4101	Y	N	10/10/2011	4	Y	OD	N	Nails	4	2	0.1	LIP	N		3	0.1	
1181	33.7	62.6	-0.3281	0.0558	Y	N	9/27/2011	3	Y	OD	N	Bolt	3	1	0.2	LIP	N		2	0.1	
1182	2851.7	10402	0.1083	-0.9022	Y	N	9/27/2011	2	Y	OD	N	Scrap Steel	2	1	25	LIP	Y	Y	36	18	
1183	145.3	915	0.0000	0.8202	Y	Y											N				
1184	32.2	8462	0.0000	0.9843	Y	N	9/27/2011	4	Y	OD	N	Scrap Steel	4	1	5	LIP	N		8	18	
1185	16	69.1	0.0000	-0.6562	Y	N	9/27/2011	4	Y	OD	N	Rust	4	30	1	LIP	N		2	2	
1186	25.9	64.1	0.3281	0.0558	Y	N	9/27/2011	3	Y	OD	N	Scrap Steel	3	1	2	LIP	N		0.1	8	
1187	5.5	11.9	0.4921	0.3281	Y	N	9/27/2011	12	N								N				
1188	23.9	9235	0.0000	-0.9843	Y	N	9/27/2011	2	Y	OD	N	Scrap Steel	2	1	5	LIP	N		8	18	
1189	7.8	1841	0.7119	0.9843	Y	N	9/27/2011	4	Y	OD	N	Scrap Steel	4	1	10	LIP	N		12	18	
1190	8.6	19.5	0.0000	0.0000	Y	N	9/27/2011	6	Y	OD	N	Scrap Metal	6	4	4	LIP	N		1	1	
1191	5.2	11.7	-0.3281	-0.3281	Y	N	9/27/2011	1	Y	OD	N	Nails	1	1	0.1	LIP	Y	Y	2	0.1	
1192	22.8	32.9	-0.3281	-0.0558	Y	N	9/27/2011	3	Y	OD	N	Wire	3	3	0.2	LIP	N		6	0.1	
1193	11.8	46.9	0.1640	-0.4921	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	3	2	LIP	N		1	1	
1194	25.6	57.6	0.0000	0.3839	Y	N	9/27/2011	3	Y	OD	N	Wire	3	1	0.1	LIP	N		36	0.1	
1195	7.9	43.4	0.0000	0.7119	Y	N	9/27/2011	2	Y	OD	N	Nails	2	4	0.2	LIP	N		2	0.1	
1196	47.5	157.4	0.1083	0.3281	Y	N	9/27/2011	6	Y	OD	N	Scrap Metal	6	8	12	LIP	Y	Y	4	2	
1197	27.2	40.4	-0.1378	-0.1378	Y	N	9/27/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		1	1	
1198	75.2	453.4	0.0000	0.8202	Y	N	9/27/2011	3	Y	OD	N	Scrap Steel	3	1	5	LIP	N		8	18	
1199	12.2	24.6	0.0000	0.5741	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1200	19.9	30	0.0000	0.0000	Y	N	9/27/2011	2	Y	OD	N	Scrap Metal	2	5	5	LIP	N		3	2	
1201	19.8	76.3	-0.3018	-0.3839	Y	N	9/27/2011	4	Y	OD	N	Scrap Metal	4	4	5	LIP	N		2	2	
1202	7	11.1	-0.0164	-0.1083	Y	N	9/27/2011	2	Y	OD	N	Scrap Steel	2	2	0.4	LIP	Y	Y	0.1	3	
1203	20.4	27.9	0.5741	-0.5741	Y	N	10/10/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		6	6	
1204	5.5	27.8	0.6299	0.9449	Y	N	9/27/2011	6	Y	OD	N	Scrap Metal	6	3	4	LIP	Y	Y	3	2	
1205	57.7	116.2	0.1083	0.1378	Y	N	9/27/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		48	0.25	
1206	16.2	47.2	0.0000	0.3018	Y	N	9/27/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		2	1	
1207	24	33.4	0.1640	0.1640	Y	N	9/27/2011	3	Y	OD	N	Scrap Metal	3	3	1	LIP	N		0.5	0.5	
1208	38.5	65.1	0.0000	0.0000	Y	N	9/27/2011	4	Y	OD	N	Scrap Metal	4	3	3	LIP	N		2	2	
1209	13.2	20.6	-0.3839	-0.1640	Y	N	9/27/2011	4	Y	OD	N	Wire	4	1	0.1	LIP	N		8	0.1	
1210	264.6	744.5	0.0000	0.0000	Y	N	9/27/2011	2	Y	OD	N	Scrap Steel	2	1	5	LIP	N		8	18	
1211	14.9	23.8	0.0000	0.0000	Y	N	9/27/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	3	
1212	14.5	27.5	0.0000	0.8465	Y	N	9/27/2011	4	Y	OD	N	Scrap Steel	4	2	0.2	LIP	N		0.1	3	
1213	23.9	31	0.0000	0.1640	Y	N	9/27/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1214	18.6	90.2	0.9843	0.0000	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	8	LIP	N		8	4	
1215	14.9	43.2	-0.4921	-0.6562	Y	N	9/27/2011	4	Y	OD	N	Scrap Steel	4	1	0.1	LIP	N		24	0.25	
1216	5.6	14	0.0000	0.0000	Y	N	9/27/2011	4	Y	OD	N	Scrap Metal	4	3	4	LIP	N		1	1	
1217	6.2	22.6	-0.1640	-0.3281	Y	N	9/27/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		18	0.25	
1218	15.6	70.3	0.3281	0.4364	Y	N	9/27/2011	3	Y	OD	N	Scrap Steel	3	1	0.2	LIP	N		0.1	3	
1219	14.5	61.6	0.0820	0.8202	Y	N	10/10/2011	2	Y	OD	N	Wire	2	1	0.25	LIP	N		12	0.2	
1220	35.3	56.9	0.0000	0.0000	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	6	3	LIP	N		1	1	
1221	43.3	203	-0.1083	0.3281	Y	N	10/10/2011	3	Y	OD	N	Cable	3	1	10	LIP	N		36	0.75	
1222	59.2	72	-0.0820	0.3281	Y	N	10/10/2011	1	Y	OD	N	Scrap Metal	1	1	5	LIP	Y	Y	3	2	
1223	7.7	20.4	0.1640	0.4921	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1224	31.5	56.1	0.1083	0.1640	Y	N	9/27/2011	3	Y	OD	N	Scrap Steel	3	1	0.2	LIP	N		0.1	3	
1225	14.1	34	0.0000	0.6562	Y	N	9/27/2011	4	Y	OD	N	Nails	4	3	0.1	LIP	N		2	0.1	
1226	11.4	19.6	0.0820	0.1640	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	N		3	2	
1227	9.2	23	0.7644	0.0000	Y	N	9/27/2011	4	Y	OD	N	Scrap Steel	4	1	0.1	LIP	N		8	0.25	
1228	30.9	49	0.0000	0.0000	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1229	5.9	29.4	0.1903	0.6562	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1230	10.2	22.3	0.9580	0.0000	Y	N	9/27/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		36	0.25	
1231	5.8	14	0.8202	0.5741	Y	N	10/10/2011	4	Y	OD	N	Nails	4	1	0.1	LIP	N		6	0.1	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
1232	16.5	45.9	0.0558	0.6562	Y	N	9/27/2011	4	Y	OD	N	Scrap Metal	4	1	0.2	LIP	N		0.1	3	
1233	15.5	20.5	0.3281	0.3281	Y	N	9/27/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		36	0.25	
1234	5.1	11.5	0.3281	0.0000	Y	N	9/27/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		18	0.25	
1235	27.1	63.9	0.6562	0.6562	Y	N	9/27/2011	6	Y	OD	N	Scrap Metal	6	3	3	LIP	N		1	1	
1236	6.3	38.4	0.9022	-0.8465	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		5	4	
1237	39.7	55.1	0.1640	0.0000	Y	N	10/10/2011	4	Y	OD	N	Nails	4	6	1	LIP	N		5	0.1	
1238	65.3	74.9	-0.2461	0.2461	Y	N	10/10/2011	48	Y	OD	N	Pipe	48	1	1	LIP	Y	Y	36	8	
1239	16.3	33.8	0.3018	-0.4364	Y	N	10/10/2011	2	Y	OD	N	Nails	2	6	0.2	LIP	N		5	0.1	
1240	9.6	22.9	0.0000	0.0000	Y	N	10/10/2011	4	Y	OD	N	Nails	4	3	0.1	LIP	Y	Y	5	0.1	
1241	14.8	20.1	0.3281	0.3018	Y	N	9/27/2011	4	Y	OD	N	Scrap Metal	4	3	3	LIP	N		1	1	
1242	129.5	207	-0.1640	-0.2461	Y	N	10/10/2011	4	Y	OD	N	Other	4	1	1	LIP	N		24	24	
1243	20.2	89.2	0.0000	0.9843	Y	N	10/10/2011	1	Y	OD	N	Nails	1	16	2	LIP	N		5	0.1	
1244	37.9	70.5	-0.1640	-0.3281	Y	N	10/10/2011	6	Y	OD	N	Other	6	1	1	LIP	N		24	24	
1245	33.4	81.2	0.0000	-0.1640	Y	N	10/10/2011	4	Y	OD	N	Nails	4	20	1	LIP	N		6	0.1	
1246	2439.4	10154	0.6562	0.9843	Y	N	9/27/2011	2	Y	OD	N	Scrap Steel	2	1	15	LIP	N		24	18	
1247	299.4	408	0.1903	0.5184	Y	N	10/10/2011	4	Y	OD	N	Nails	4	100	10	LIP	N		6	0.1	
1248	125.6	295.4	-0.3281	0.0558	Y	N	9/27/2011	6	Y	OD	N	Scrap Metal	6	3	12	LIP	Y	Y	8	6	
1248	125.6	295.4	-0.3281	0.0558	Y	N	9/27/2011	6	Y	OD		Scrap Steel	4	1	0.5	LIP	Y	Y	50	0.75	
1249	23.7	58.2	-0.2461	-0.1640	Y	N	10/10/2011	4	Y	OD	N	Scrap Steel	4	1	4	LIP	Y	Y	4	4	
1250	42.3	77	0.0000	0.4921	Y	N	10/10/2011	4	Y	OD	N	Bolt	4	2	0.5	LIP	N		4	0.2	
1251	57	377.9	-0.1083	0.5741	Y	N	10/10/2011	4	Y	OD	N	Pipe	4	1	10	LIP	N		12	4	
1252	16.4	33.9	0.1640	-0.9843	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1253	14.5	23.9	0.0000	0.0000	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1254	32.3	42.2	-0.1640	0.0000	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	Y	Y	36	36	
1255	5.8	9	0.1083	-0.2461	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1256	11.2	14.8	0.3281	0.6562	Y	N	9/27/2011	3	Y	OD	N	Scrap Steel	3	1	0.2	LIP	N		36	0.25	
1257	5.9	24	0.0000	0.4921	Y	N	9/27/2011	1	Y	OD	N	Nails	1	1	0.1	LIP	N		2	0.1	
1258	22.3	42.8	0.0000	0.0000	Y	N	9/27/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	Y	Y	48	0.25	
1259	12.6	12.4	0.1083	0.3281	Y	N	9/27/2011	6	Y	OD	N	Wire	6	1	0.1	LIP	N		6	0.1	
1260	9.6	14.2	0.0820	0.4921	Y	N	9/27/2011	1	Y	OD	N	Scrap Steel	1	1	0.2	LIP	N		0.1	3	
1261	23.4	11761	0.0000	0.9843	Y	Y											N				
1262	60.1	99.4	-0.1903	0.2461	Y	N	10/10/2011	36	Y	OD	N	Pipe	36	1	1	LIP	Y	Y	36	8	
1263	10167.3	11128	0.0000	0.0000	Y	N	10/10/2011	4	Y	OD	N	Scrap Steel	4	1	30	LIP	N		36	18	
1264	15.9	33.1	0.1640	0.1640	Y	N	9/27/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		48	0.25	
1265	13.1	29.6	0.0000	0.0000	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	2	2	LIP	N		2	2	
1266	7.2	11.6	0.3839	0.6562	Y	N	9/27/2011	3	Y	OD		Nails	3	2	0.1	LIP	Y	Y	2	0.1	
1267	11.6	11.8	0.2461	-0.2461	Y	N	10/10/2011	2	Y	OD	N	Nails	2	3	0.1	LIP	N		3	0.1	
1268	14.4	39.6	0.1378	-0.2461	Y	N	10/10/2011	2	Y	OD	N	Scrap Steel	2	1	0.5	LIP	N		12	0.25	
1269	6.6	10	0.0000	0.0000	Y	N	9/27/2011	4	Y	OD	N	Wire	4	2	0.1	LIP	N		12	0.1	
1270	50.6	161.5	0.1083	0.4921	Y	N	9/27/2011	3	Y	OD	N	Scrap Steel	3	2	0.4	LIP	N		0.1	3	
1271	25.3	149.2	0.0558	0.6168	Y	Y											N				
1272	8.2	20.3	0.3281	0.6562	Y	N	9/27/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		1	1	
1273	5.3	18.6	0.6562	0.6562	Y	N	9/27/2011	2	Y	OD	N	Nails	2	1	0.1	LIP	N		2	0.1	
1274	20	60	-0.4101	-0.9843	Y	N	10/10/2011	8	Y	OD	N	Other	8	1	500	LIP	Y	Y	24	24	
1275	15.5	36.8	0.1640	0.0000	Y	N	9/27/2011	3	Y	OD	N	Scrap Steel	3	1	0.2	LIP	N		18	0.25	
1276	19	33.5	0.1083	0.0000	Y	N	9/27/2011	1	Y	OD	N	Scrap Steel	1	1	0.1	LIP	N		1.5	1.5	
1277	5.8	13.3	0.0820	0.6562	Y	N	9/27/2011	4	Y	OD	N	Scrap Steel	4	2	0.4	LIP	Y	Y	0.1	3	
1278	8.8	12.2	0.3281	0.0000	Y	N	9/27/2011	1	Y	OD	N	Nails	1	1	0.1	LIP	N		2	0.1	
1279	27.4	70.4	0.1083	0.1640	Y	N	9/27/2011	1	Y	OD	N	Scrap Steel	1	1	0.1	LIP	N		12	0.25	
1280	6.3	17.4	0.1083	0.5184	Y	N	9/27/2011	1	Y	OD	N	Scrap Steel	1	1	0.2	LIP	N		0.1	3	
1281	48.2	74.8	0.0558	0.1640	Y	N	9/27/2011	4	Y	OD	N	Scrap Metal	4	4	2	LIP	N		1	1	
1282	7.8	21.3	0.3839	0.0000	Y	N	9/27/2011	3	Y	OD	N	Scrap Steel	3	1	0.2	LIP	N		24	0.25	
1283	11.3	17.5	-0.2461	0.3281	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	2	4	LIP	N		2	2	
1284	29.2	45.1	0.1083	0.2461	Y	N	9/27/2011	1	Y	OD	N	Wire	1	2	0.2	LIP	N		8	0.1	
1285	9	12.6	0.0000	0.0000	Y	N	9/27/2011	0	Y	Other	N	Asphalt	0	1	1	LIP	Y	Y	36	36	
1286	15.2	17.2	0.0000	0.0000	Y	N	9/27/2011	4	Y	OD	N	Scrap Metal	4	2	4	LIP	N		2	2	
1287	16.3	24.3	0.0000	0.9843	Y	N	9/27/2011	1	Y	OD	N	Wire	1	1	0.1	LIP	N		18	0.1	
1288	5.6	16.7	0.3018	0.3281	Y	N	9/27/2011	1	Y	OD	N	Scrap Steel	1	1	0.1	LIP	N		1.5	1.5	
1289	19.7	53	0.0000	-0.1640	Y	N	9/27/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		18	0.25	
1290	5.7	9.4	0.0000	-0.5184	Y	N	10/10/2011	2	Y	OD	N	Nails	2	2	0.1	LIP	N		3	0.1	
1291	8.1	38.4	0.0000	0.6562	Y	N	9/27/2011	3	Y	OD	N	Scrap Steel	3	1	0.2	LIP	N		3	2	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
1292	19.9	45.6	-0.2723	-0.3281	Y	N	9/27/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		36	0.25	
1293	15.9	26.2	0.0000	0.3281	Y	N	9/27/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		36	0.25	
1294	7.2	54.2	0.0558	0.8202	Y	N	9/27/2011	1	Y	OD	N	Wire	1	1	0.1	LIP	N		24	0.1	
1295	9.5	32.8	-0.1903	0.7382	Y	N	10/10/2011	10	Y	OD	N	Scrap Steel	10	3	7	LIP	N		8	6	
1296	39.9	113	0.0000	0.1640	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	5	LIP	N		8	3	
1297	13.2	18.4	-0.2461	-0.2461	Y	N	10/10/2011	2	Y	OD	N	Nails	2	6	0.2	LIP	N		4	0.1	
1298	679.4	10782	0.0000	0.6562	Y	N	9/27/2011	2	Y	OD	N	Scrap Steel	2	1	25	LIP	Y	Y	48	18	
1299	5.3	8	0.1640	0.3281	Y	N	10/10/2011	4	Y	OD	N	Wire	4	1	0.1	LIP	N		2	0.1	
1300	7	10.7	0.3839	0.0000	Y	N	9/27/2011	2	Y	OD	N	Scrap Metal	2	1	0.5	LIP	N		0.5	0.5	
1301	14.1	64.8	0.3281	0.4921	Y	N	9/27/2011	1	Y	OD	N	Scrap Steel	1	1	0.2	LIP	N		24	0.25	
1302	107.1	196.8	0.1640	0.2723	Y	N	10/10/2011	4	Y	OD	N	Scrap Steel	4	1	10	LIP	N		6	6	
1303	21.2	66.4	0.0000	0.3281	Y	N	9/27/2011	2	Y	OD	N	Wire	2	1	0.1	LIP	N		36	0.1	
1304	18	30.8	0.0000	0.0000	Y	N	9/27/2011	3	Y	OD	N	Scrap Steel	3	1	0.2	LIP	N		24	0.25	
1305	10.1	34.9	0.0000	0.9252	Y	N	9/27/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		0.1	3	
1306	29.6	79	0.4921	0.6562	Y	N	9/27/2011	3	Y	OD	N	Scrap Steel	3	2	0.2	LIP	N		36	0.25	
1307	26.3	48.5	0.0000	0.9580	Y	N	9/27/2011	1	Y	OD	N	Scrap Steel	1	1	0.1	LIP	N		2	2	
1308	250.7	280	0.2461	0.2461	Y	N	10/10/2011	3	Y	OD	N	Scrap Steel	3	3	9	LIP	Y	Y	10	1	
1309	5.5	30.7	0.3281	0.6562	Y	N	9/27/2011	1	Y	OD	N	Scrap Metal	1	1	0.2	LIP	Y	Y	5	0.25	
1310	13.8	27	-0.3281	-0.1903	Y	N	10/10/2011	1	Y	OD	N	Wire	1	1	0.5	LIP	Y	Y	48	0.1	
1311	371.8	471.1	-0.1640	0.0000	Y	N	10/10/2011	2	Y	OD	N	Scrap Steel	2	1	2	LIP	N		8	8	
1312	13.9	24.2	0.0000	0.6562	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1313	22.2	57.4	0.0000	0.6299	Y	N	9/27/2011	4	Y	OD	N	Nails	2	2	0.1	LIP	Y	Y	2	0.1	
1313	22.2	57.4	0.0000	0.6299	Y	N	9/27/2011	4	Y	OD		Scrap Steel	4	2	2	LIP	Y	Y	120	0.75	
1314	34.5	63.1	0.1083	0.1083	Y	N	9/27/2011	2	Y	OD	N	Scrap Steel	2	1	2	LIP	N		6	3	
1315	21.3	64.1	0.1903	0.3281	Y	N	9/27/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		48	0.25	
1316	11.5	22.9	0.0000	0.0000	Y	N	9/27/2011	3	Y	OD	N	Scrap Steel	3	1	0.1	LIP	N		1.5	1.5	
1317	7.6	7.5	0.0558	0.3839	Y	N	9/27/2011	4	Y	OD	N	Wire	4	1	0.2	LIP	N		6	0.1	
1318	17.6	101.2	0.1083	-0.3839	Y	N	9/27/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		36	0.25	
1319	27.8	45.9	0.0000	0.6562	Y	N	9/27/2011	3	Y	OD	N	Wire	3	1	0.2	LIP	Y	Y	36	0.1	
1320	6	13.2	0.0000	0.0000	Y	N	10/10/2011	2	Y	OD	N	Nails	2	2	0.1	LIP	N		4	0.1	
1321	5.5	34	0.3281	0.6562	Y	N	9/26/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		0.1	3	
1322	91.2	292.8	0.3281	0.1640	Y	N	9/26/2011	4	Y	OD	N	Scrap Steel	4	1	1	LIP	N		48	0.2	
1323	26.4	56.4	0.1640	0.0000	Y	N	9/26/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		48	0.25	
1324	7.8	23.5	-0.1640	0.0000	Y	N	9/26/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		0.1	3	
1325	20.1	33.4	0.3281	0.2723	Y	N	9/26/2011	3	Y	OD	N	Scrap Steel	3	1	0.1	LIP	Y	Y	1.5	1.5	
1326	7.9	22	0.0000	0.1640	Y	N	9/26/2011	3	Y	OD	N	Nails	3	8	0.2	LIP	N		2	0.1	
1327	10.4	31.8	0.0558	0.8202	Y	N	9/26/2011	1	Y	OD	N	Scrap Steel	1	1	0.2	LIP	N		0.1	3	
1328	5.9	2.6	0.0000	0.0000	N	N	10/10/2011	1	Y	OD	N	Nails	1	1	0.1	LIP	N		2	0.1	
1329	17.3	44	0.0000	0.0000	Y	Y	9/26/2011	0	Y	OD	N	Scrap Steel	0	1	0.2	LIP	N		48	0.25	
1330	16.9	44.8	0.3018	0.6562	Y	N	9/26/2011	4	Y	OD	N	Other	4	1	1000	LIP	N		36	36	
1331	7.5	17	0.0558	0.8202	Y	N	9/26/2011	4	Y	OD	N	Scrap Steel	4	1	0.5	LIP	N		3	2	
1332	11.9	31.2	0.1640	0.0000	Y	N	9/26/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		0.1	3	
1333	10.1	61.7	0.3281	0.6562	Y	N	9/26/2011	12	Y	OD	N	Scrap Steel	3	1	0.3	LIP	N		0.1	4	
1333	10.1	61.7	0.3281	0.6562	Y	N	9/26/2011	12	Y	OD	N	Scrap Metal	12	5	5	LIP	N		1	1	
1334	7.7	90.3	0.4921	-0.9580	Y	N	9/26/2011	6	Y	OD	N	Scrap Metal	6	1	7	LIP	N		10	6	
1335	6.3	22.2	0.3281	-0.4921	Y	N	9/26/2011	3	Y	OD	N	Nails	3	5	0.1	LIP	N		2	0.1	
1336	19.5	42.9	0.3839	0.1640	Y	N	9/26/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		0.1	3	
1337	8.2	23.5	0.1640	0.1640	Y	N	9/26/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1338	16.3	36.2	0.0000	0.0000	Y	N	9/26/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	Y	Y	50	0.25	
1339	7.4	73.5	0.0000	-0.9843	Y	N	9/26/2011	6	Y	OD	N	Scrap Steel	4	1	0.2	LIP	Y	Y	0.1	3	
1339	7.4	73.5	0.0000	-0.9843	Y	N	9/26/2011	6	Y	OD		Scrap Steel	6	1	1	LIP	Y	Y	120	0.75	
1340	14.4	43.9	0.0000	0.3281	Y	N	9/26/2011	3	Y	OD	N	Wire	3	1	0.1	LIP	N		12	0.1	
1341	81.4	186.3	0.1640	0.0000	Y	N	10/10/2011	6	Y	OD	N	Scrap Steel	6	1	5	LIP	N		8	3	
1342	19.9	52.5	0.0558	-0.1640	Y	N	9/26/2011	2	Y	OD	N	Wire	2	1	1	LIP	N		36	0.1	
1343	43.7	84.6	-0.6562	-0.3018	Y	N	9/26/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		3	2	
1344	32.4	66.7	0.0558	0.3281	Y	N	9/26/2011	6	Y	OD	N	Wire	4	1	0.1	LIP	N		8	0.1	
1344	32.4	66.7	0.0558	0.3281	Y	N	9/26/2011	6	Y	OD	N	Scrap Metal	6	1	20	LIP	N		2	2	
1345	7.5	66.7	-0.2461	0.9580	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1346	10.2	28.3	0.3018	0.0000	Y	N	9/26/2011	3	Y	OD	N	Scrap Steel	3	1	1	LIP	N		2	1	
1347	6	21.6	-0.3281	-0.0558	Y	N	9/26/2011	0	Y	OD	N	Scrap Steel	0	1	0.1	LIP	N		1.5	1.5	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
1348	14.2	26.6	0.2723	0.3839	Y	N	9/26/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		0.1	3	
1349	7.8	24.6	0.0000	0.0000	Y	N	9/26/2011	4	Y	OD	N	Scrap Metal	4	3	0.25	LIP	N		6	0.25	
1350	18.1	47.1	0.1903	-0.3839	Y	N	9/26/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		50	0.25	
1351	11.6	90.8	-0.0558	-0.1640	Y	N	9/26/2011	2	Y	OD	N	Wire	2	1	0.2	LIP	N		36	0.1	
1352	16.9	75.9	0.0000	-0.5741	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1353	7.3	20.6	0.0000	-0.1640	Y	N	9/26/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		0.1	3	
1354	11.5	36.5	0.0000	-0.1640	Y	N	9/26/2011	0	Y	OD	N	Scrap Steel	0	1	0.2	LIP	N		48	0.25	
1355	21.3	30	-0.0820	0.3281	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	Y	Y	2	2	
1356	5.3	42.7	0.3839	0.6562	Y	N	9/26/2011	0	Y	OD	N	Anchor, ground	0	1	60	LIP	N		18	12	
1357	108.6	130.3	0.0000	0.1640	Y	N	10/10/2011	4	Y	OD	N	Pipe	4	1	5	LIP	N		8	2	
1358	42.8	70.6	0.1640	-0.2461	Y	N	10/10/2011	6	Y	OD	N	Pipe	6	1	2	LIP	N		4	3	
1359	67.4	115.4	-0.1640	0.0000	Y	N	10/10/2011	3	Y	OD	N	Scrap Steel	3	1	5	LIP	N		10	1	
1360	11	23.9	0.0000	0.0000	Y	N	9/26/2011	0	Y	OD	N	Scrap Steel	0	1	0.2	LIP	N		0.1	8	
1361	42	58.6	-0.1083	-0.1903	Y	N	10/10/2011	2	Y	OD	N	Nails	2	6	1	LIP	N		3	0.1	
1362	15.7	25.6	0.0000	0.2723	Y	N	9/26/2011	2	Y	OD	N	Nails	2	4	0.1	LIP	N		1	0.1	
1363	19.6	46.9	-0.1083	0.0000	Y	N	9/26/2011	4	Y	OD	N	Scrap Metal	0	1	1	LIP	Y	Y	1	4	
1363	19.6	46.9	-0.1083	0.0000	Y	N	9/26/2011	4	Y	OD		Scrap Steel	4	4	2	LIP	Y	Y	0.1	8	
1364	15.3	36.7	0.0000	0.3018	Y	N	9/26/2011	0	Y	OD	N	Scrap Metal	0	2	1	LIP	N		3	1	
1365	173.3	592	-0.5741	-0.4921	Y	Y											N				
1366	10.4	28	0.1640	0.1083	Y	N	9/26/2011	0	Y	OD	N	Scrap Steel	0	1	0.1	LIP	N		1.5	1.5	
1367	8	34.9	0.1083	-0.6562	Y	N	9/26/2011	2	Y	OD	N	Scrap Steel	2	1	0.5	LIP	N		4	2	
1368	55.6	75	0.0000	-0.2461	Y	N	10/10/2011	6	Y	OD	N	Scrap Metal	6	2	8	LIP	Y	Y	4	3	
1369	61.5	106.2	0.3839	0.1640	Y	N	9/26/2011	4	Y	OD	N	Wire	3	3	0.1	LIP	Y	Y	6	0.1	
1369	61.5	106.2	0.3839	0.1640	Y	N	9/26/2011	4	Y	OD	N	Nails	2	2	1	LIP	Y	Y	4	0.1	
1369	61.5	106.2	0.3839	0.1640	Y	N	9/26/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	Y	Y	1	1	
1369	61.5	106.2	0.3839	0.1640	Y	N	9/26/2011	4	Y	OD	Y	Scrap Metal	0	1	0	LIP	Y	Y	0	0	
1370	11.5	139	0.6562	0.9843	Y	N	9/26/2011	0	Y	OD	N	Wire	0	6	0.3	LIP	N		8	0.1	
1371	26.3	60	-0.3281	0.4921	Y	N	10/10/2011	3	Y	OD	N	Scrap Metal	3	1	1	LIP	N		1	1	
1372	15.4	44.9	-0.3281	0.1640	Y	N	9/26/2011	2	Y	OD	N	Nails	2	6	0.2	LIP	N		2	0.1	
1373	48	545.7	-0.0558	-0.9843	Y	N	9/26/2011	0	Y	OD	N	Scrap Steel	0	1	15	LIP	N		14	8	
1374	8.5	36.5	0.0000	0.0000	Y	N	9/26/2011	3	Y	OD	N	Scrap Steel	3	1	0.2	LIP	N		48	0.25	
1375	29.7	69.7	-0.1640	-0.1640	Y	N	9/26/2011	2	Y	OD	N	Wire	2	1	0.2	LIP	N		72	0.1	
1376	21.6	253.4	0.0820	0.8202	Y	N	10/10/2011	4	Y	OD	N	Scrap Steel	4	1	5	LIP	N		10	1	
1377	64.3	86.3	-0.0558	0.2461	Y	N	10/10/2011	2	Y	OD	N	Nails	2	6	0.3	LIP	N		9	0.1	
1378	28.5	102.4	0.0000	-0.4921	Y	N	10/10/2011	2	Y	OD	N	Scrap Steel	2	1	3	LIP	N		8	1	
1379	17.4	56	0.0000	0.6562	Y	N	9/26/2011	4	Y	OD	N	Wire	4	3	0.2	LIP	N		12	0.1	
1380	11.2	32.8	0.0000	0.0000	Y	N	9/26/2011	4	Y	OD	N	Scrap Steel	4	8	0.5	LIP	N		2	0.2	
1381	46.3	411.1	0.2723	0.9843	Y	N	9/26/2011	2	Y	OD	N	Scrap Steel	2	1	1	LIP	N		72	0.25	
1381	46.3	411.1	0.2723	0.9843	Y	N	9/26/2011	2	Y	OD	N	Wire	2	1	0.5	LIP	N		36	0.01	
1381	46.3	411.1	0.2723	0.9843	Y	N	9/26/2011	2	Y	OD	N	Scrap Metal	2	10	2	LIP	N		4	0.1	
1382	66.8	78.5	0.4921	-0.7119	Y	N	9/26/2011	4	Y	OD	N	Wire	4	12	0.3	LIP	N		36	0.1	
1383	33.8	97	0.0000	-0.4921	Y	N	10/10/2011	2	Y	OD	N	Scrap Steel	2	1	3	LIP	N		8	1	
1384	19.1	343.5	0.7644	-0.9843	Y	N	10/10/2011	3	Y	OD	N	Scrap Metal	3	1	20	LIP	N		8	8	
1385	7.7	42.4	0.0000	0.3281	Y	N	9/26/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		36	0.25	
1386	40	114.7	0.0000	-0.4921	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1387	18.1	55.3	-0.0558	-0.1640	Y	N	9/26/2011	3	Y	OD	N	Wire	3	3	0.1	LIP	N		8	0.1	
1388	14	32.5	-0.0262	-0.3839	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1389	28.7	58.4	0.0000	-0.4101	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1390	18	64.4	0.1083	0.1903	Y	N	10/10/2011	2	Y	OD	N	Scrap Steel	2	1	1	LIP	N		12	0.2	
1391	22.6	76.2	-0.0820	0.5741	Y	N	10/10/2011	6	Y	OD	N	Scrap Steel	6	1	6	LIP	N		8	1	
1392	29.9	41.2	0.3281	0.2461	Y	N	10/10/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		4	4	
1393	13.3	21.7	-0.3281	-0.1640	Y	N	10/10/2011	6	Y	OD	N	Scrap Metal	6	3	5	LIP	N		3	2	
1394	252.1	10078	-0.6562	-0.9843	Y	N	10/10/2011	1	Y	OD	N	Scrap Steel	1	2	60	LIP	N		90	4	
1395	5160.4	6826	0.0000	-0.6562	Y	N	10/10/2011	1	Y	OD	N	Scrap Steel	1	1	30	LIP	N		96	4	
1396	30.2	68.7	0.0820	-0.5184	Y	N	10/10/2011	12	Y	OD	N	Other	12	1	1	LIP	N		36	36	
1397	62.7	76	-0.0820	0.5741	Y	N	10/10/2011	36	Y	OD	N	Pipe	36	1	1	LIP	N		36	8	
1398	41	56.6	-0.0820	0.3281	Y	N	10/10/2011	6	Y	OD	N	Scrap Metal	6	3	5	LIP	N		3	2	
1399	7.3	53.7	-0.4921	0.9843	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1400	49.5	80	0.1640	0.4921	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1401	16.7	16.8	0.0000	0.0000	Y	N	9/26/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		3	2	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
1402	32.4	64.4	0.0000	0.2461	Y	N	10/10/2011	6	Y	OD	N	Scrap Metal	6	6	10	LIP	N		3	2	
1403	252.2	461	-0.2461	-0.1640	Y	N	10/10/2011	4	Y	OD	N	Scrap Steel	4	1	10	LIP	N		14	1	
1404	6.9	24.7	-0.1640	0.9022	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1405	9.7	27.6	0.0000	0.4921	Y	N	10/10/2011	4	Y	OD	N	Bolt	4	1	0.5	LIP	N		4	0.1	
1406	36.3	67.3	0.0000	0.0000	Y	N	9/26/2011	6	Y	OD	N	Wire	6	6	0.3	LIP	N		6	0.2	
1407	15.2	23	0.0000	0.0000	Y	N	10/10/2011	3	Y	OD	N	Scrap Metal	3	1	2	LIP	N		2	2	
1408	16.8	27.3	0.0000	0.6562	Y	N	9/26/2011	4	Y	OD	N	Scrap Metal	4	1	5	LIP	N		3	2	
1409	16.3	41.5	0.2461	-0.7644	Y	N	10/10/2011	3	Y	OD	N	Wire	3	1	1	LIP	N		96	0.1	
1410	9.1	17.4	0.0820	0.3281	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	4	5	LIP	Y	Y	3	2	
1411	25.1	26.5	0.0000	0.0000	Y	N	9/27/2011	12	Y	OD	N	Wire	12	1	1	LIP	N		6	0.25	
1412	12.4	69.7	0.1378	0.6562	Y	N	9/27/2011	6	Y	OD	N	Scrap Metal	6	2	2	LIP	N		2	1	
1413	28.7	77	0.3281	0.8629	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1414	23.6	69.8	0.0000	0.9843	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1415	21.5	91	0.4921	0.3281	Y	N	9/27/2011	6	Y	OD	N	Scrap Metal	6	2	2	LIP	Y	Y	3	3	
1416	11.4	43.1	0.2461	0.3281	Y	N	9/26/2011	4	Y	OD	N	Wire	2	1	0.1	LIP	Y	Y	8	0.01	
1416	11.4	43.1	0.2461	0.3281	Y	N	9/26/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	Y	Y	1	1	
1417	10.9	28	0.0000	0.0000	Y	N	9/27/2011	6	Y	OD	N	Scrap Metal	6	10	5	LIP	N		24	24	
1418	8.4	22.6	0.2723	0.3281	Y	N	9/26/2011	4	Y	OD	N	Scrap Metal	4	6	2	LIP	N		0.5	0.5	
1419	6.4	377.3	0.6562	0.9843	Y	N	9/26/2011	4	Y	OD	N	Scrap Steel	4	1	0.5	LIP	N		18	0.25	
1420	14.3	23.3	0.1083	0.2461	Y	N	9/26/2011	3	Y	OD	N	Wire	3	1	0.2	LIP	N		36	0.1	
1421	41.7	42.5	-0.9843	0.9843	Y	N	10/10/2011	6	Y	OD	N	Scrap Metal	6	6	10	LIP	N		3	2	
1422	47.5	2265	0.1640	0.9843	Y	N	10/10/2011	6	Y	OD	N	Scrap Steel	6	1	5	LIP	N		7	18	
1423	37.2	79.5	0.0000	0.4921	Y	N	9/26/2011	3	Y	OD	N	Scrap Metal	3	1	3	LIP	N		2	2	
1424	12.7	26.5	0.0000	-0.2723	Y	N	9/27/2011	6	Y	OD	N	Rebar	6	1	3	LIP	N		6	0.5	
1425	8.1	24.8	0.3281	0.0558	Y	N	9/27/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		2	2	
1426	5.9	12	0.0000	0.0000	Y	N	9/26/2011	3	Y	OD	N	Scrap Steel	3	1	0.2	LIP	N		0.1	2.5	
1427	11	10	0.0000	0.0000	Y	N	10/10/2011	2	Y	OD	N	Scrap Metal	2	1	2	LIP	Y	Y	2	2	
1428	12.6	21.2	0.0558	0.2723	Y	N	9/27/2011	6	Y	OD	N	Scrap Metal	6	3	5	LIP	N		3	3	
1429	96	480	0.1640	-0.9843	Y	N	10/10/2011	4	Y	OD	N	Other	4	1	1	LIP	N		36	36	
1430	21.9	41.8	0.2461	0.0000	Y	N	9/26/2011	6	Y	OD	N	Wire	6	8	0.5	LIP	N		6	0.2	
1431	64.3	72	0.1378	0.1640	Y	N	9/27/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		12	0.5	
1432	42.2	52.1	-0.3281	0.3281	Y	N	9/26/2011	2	Y	OD	N	Scrap Steel	2	1	0.3	LIP	N		10	0.5	
1433	21.7	40.1	0.0000	0.4921	Y	N	9/26/2011	2	Y	OD	N	Wire	2	1	0.2	LIP	N		8	0.2	
1434	6.5	13.99	0.2461	0.2198	Y	N	9/26/2011	2	Y	OD	N	Scrap Steel	2	1	0.2	LIP	N		0.1	2	
1435	70.9	81.1	0.0558	0.1378	Y	N	9/27/2011	12	Y	OD	N	Scrap Metal	12	1	2	LIP	N		12	0.5	
1436	19.1	31.8	0.4921	0.0558	Y	N	9/26/2011	4	Y	OD	N	Scrap Metal	4	2	3	LIP	N		1	1	
1437	43.7	60.6	0.0000	0.0000	Y	N	9/26/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		3	2	
1438	21.3	50.2	0.0000	0.0000	Y	N	9/26/2011	4	Y	OD	N	Scrap Steel	4	2	0.2	LIP	N		48	0.25	
1439	44.9	74.5	0.2756	0.1640	Y	N	9/26/2011	4	Y	OD	N	Scrap Steel	4	1	0.5	LIP	N		0.2	8	
1439	44.9	74.5	0.2756	0.1640	Y	N	9/26/2011	4	Y	OD	N	Scrap Metal	4	1	5	LIP	N		5	4	
1440	8.9	34.5	0.3281	0.8202	Y	N	9/26/2011	4	Y	OD	N	Scrap Metal	4	2	1	LIP	N		1	1	
1441	14	21.8	-0.1640	0.0000	Y	N	10/10/2011	2	Y	OD	N	Wire	2	1	0.5	LIP	N		36	0.1	
1442	20.1	359	0.0000	0.9843	Y	N	10/10/2011	3	Y	OD	N	Scrap Steel	3	1	5	LIP	N		96	0.5	
1443	16.7	22.9	0.0000	0.3281	Y	N	9/27/2011	6	Y	OD	N	Scrap Metal	6	3	1	LIP	N		6	6	
1444	11.5	26	0.1378	0.3281	Y	N	9/26/2011	3	Y	OD	N	Scrap Metal	3	1	0.5	LIP	N		1	1	
1445	7.3	17.1	0.0000	0.3281	Y	N	9/27/2011	6	Y	OD	N	Wire	6	1	0.25	LIP	Y	Y	2	0.15	
1446	26.4	70.4	0.1378	0.3839	Y	N	9/26/2011	3	Y	OD	N	Scrap Steel	3	1	0.25	LIP	Y	Y	48	0.25	
1447	5.1	12.2	0.0000	0.0000	Y	N	9/26/2011	4	Y	OD	N	Wire	4	1	0.1	LIP	N		8	0.1	
1448	40.3	75	0.1083	0.3839	Y	N	9/26/2011	4	Y	OD	N	Bolt	4	1	0.5	LIP	N		4	0.25	
1448	40.3	75	0.1083	0.3839	Y	N	9/26/2011	4	Y	OD	N	Wire	4	6	0.2	LIP	N		8	0.1	
1449	29.6	48.3	0.1378	0.1378	Y	N	9/26/2011	3	Y	OD	N	Scrap Metal	3	1	2	LIP	N		2	2	
1449	29.6	48.3	0.1378	0.1378	Y	N	9/26/2011	3	Y	OD	N	Wire	3	1	0.1	LIP	N		8	0.1	
1450	14.8	104.1	-0.6562	0.9843	Y	N	10/10/2011	6	Y	OD	N	Pipe	6	1	10	LIP	N		12	3	
1451	33.3	100.2	0.1640	0.1640	Y	N	9/26/2011	2	Y	OD	N	Wire	2	1	0.2	LIP	N		0.2	0.2	
1452	6.4	13.4	0.3281	0.7119	Y	N	9/26/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		2	2	
1453	335.3	456	-24.6063	0.2461	Y	N	10/10/2011	6	Y	OD	N	Other	6	1	100	LIP	N		24	24	
1454	69.1	102.9	0.3281	0.1378	Y	N	9/26/2011	4	Y	OD	N	Scrap Steel	4	2	1	LIP	N		24	0.25	
1455	34.3	86.7	0.0000	0.0000	Y	N	9/26/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	Y	Y	8	4	
1456	28	43.4	-0.3281	-0.3281	Y	N	9/27/2011	6	Y	OD	N	Nails	6	5	1	LIP	N		3	0.15	
1457	16.3	91.8	0.0000	0.9022	Y	N	10/10/2011	12	Y	OD	N	Other	12	1	1	LIP	N		36	36	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12,168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
1458	14.4	25.3	0.0000	-0.3018	Y	N	9/26/2011	0	Y	OD	N	Scrap Steel	0	1	0.1	LIP	N		8	0.25	
1459	88.7	611	-0.1083	0.4921	Y	N	10/10/2011	1	Y	OD	N	Scrap Steel	1	1	15	LIP	N		14	1	
1460	14.4	83.9	0.4921	0.9580	Y	N	9/26/2011	6	Y	OD	N	Wire	6	3	0.1	LIP	N		10	0.1	
1461	6.8	22.1	0.3281	0.0000	Y	N	9/26/2011	2	Y	OD	N	Scrap Steel	2	1	0.5	LIP	N		48	0.25	
1462	17.6	44	-0.0820	-0.9843	Y	N	9/26/2011	3	Y	OD	N	Scrap Steel	3	1	0.25	LIP	N		60	0.25	
1463	15.1	100.2	0.0000	0.4921	Y	N	9/26/2011	3	Y	OD	N	Wire	3	3	0.1	LIP	N		8	0.1	
1464	42.5	52.2	0.4364	0.3281	Y	N	9/27/2011	6	Y	OD	N	Scrap Metal	6	1	5	LIP	Y	Y	8	4	
1465	29.4	64.8	0.0000	0.0000	Y	N	9/26/2011	3	Y	OD	N	Scrap Steel	3	1	2	LIP	N		8	1	
1466	14.4	123.8	0.1083	0.5184	Y	N	9/26/2011	0	Y	OD	N	Scrap Steel	0	1	0.25	LIP	N		24	0.25	
1467	5.6	14.2	0.3281	0.1083	Y	N	9/26/2011	2	Y	OD	N	Scrap Steel	2	1	5	LIP	N		48	0.25	
1468	19.4	24.2	0.4921	0.0000	Y	N	9/26/2011	4	Y	OD	N	Scrap Metal	2	2	4	LIP	N		4	3	
1468	19.4	24.2	0.4921	0.0000	Y	N	9/26/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		6	0.25	
1469	63.8	345.6	0.3281	-0.9843	Y	N	9/26/2011	2	Y	OD	N	Scrap Steel	2	1	1	LIP	N		96	0.25	
1470	9.3	15.8	0.3018	0.6562	Y	N	9/26/2011	3	Y	OD	N	Scrap Metal	3	1	1	LIP	N		1	1	
1471	13.4	46	0.0000	-0.9843	Y	N	10/10/2011	3	Y	OD	N	Nails	3	3	0.25	LIP	N		4	0.1	
1472	35.9	166.5	0.6562	0.8202	Y	N	9/27/2011	6	Y	OD	N	Wire	6	1	1	LIP	N		1	0.15	
1473	197.1	377	0.0000	0.3281	Y	N	9/26/2011	0	Y	OD	N	Wire	0	1	1	LIP	N		24	0.1	
1474	8.6	75.9	0.0000	0.8202	Y	N	9/26/2011	0	Y	OD	N	Scrap Steel	0	1	0.5	LIP	N		48	0.25	
1475	6.7	10.3	0.3281	0.4364	Y	N	9/27/2011	6	Y	OD	N	Wire	6	1	0.25	LIP	N		1	0.15	
1476	19.2	31.6	0.4199	0.1083	Y	N	9/27/2011	6	Y	OD	N	Wire	6	1	0.5	LIP	N		6	0.15	
1477	748.5	1924	-0.0820	0.5741	Y	N	10/10/2011	8	Y	OD	N	Pipe	8	1	20	LIP	N		36	8	
1478	5.6	13.4	0.0000	-0.3281	Y	N	9/27/2011	1	Y	OD	N	Scrap Metal	1	1	1	LIP	N		2	0.2	
1479	17.7	45.2	0.4364	0.3281	Y	N	9/27/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		4	4	
1480	19.4	58.2	-0.3281	-0.1640	Y	N	10/10/2011	3	Y	OD	N	Nails	3	12	0.5	LIP	N		6	0.1	
1481	33.5	69.9	0.0000	0.7119	Y	N	9/26/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		6	6	
1482	7.9	20	0.0000	-0.4921	Y	N	10/10/2011	0	Y	OD	N	Scrap Steel	0	1	0.2	LIP	N		8	0.25	
1483	15.3	152	-0.6562	-0.3281	Y	N	10/10/2011	0	Y	OD	N	Scrap Steel	0	1	1	LIP	N		36	36	
1484	9.4	16.2	0.0000	0.0000	Y	N	10/10/2011	0	N	Other	N	Asphalt	0	1	1	LIP	N		36	36	
1485	10.5	17.1	0.0000	-0.1640	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1486	16.4	21.2	0.3281	-0.0820	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1487	16.4	30.9	-0.4364	-0.2461	Y	N	9/26/2011	12	Y	OD	N	Scrap Metal	12	1	1	LIP	Y	Y	18	1	
1488	9.6	20.2	0.1903	-0.1640	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1489	17.5	26.1	0.0000	0.0000	Y	N	10/10/2011	2	Y	OD	N	Scrap Metal	2	1	4	LIP	N		2	2	
1490	18.6	37.5	-0.5741	0.0000	Y	N	10/10/2011	0	Y	OD	N	Scrap Steel	0	1	0.25	LIP	N		3	2	
1491	35.3	89.6	-0.1378	0.3839	Y	N	10/10/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1492	40.8	199	-0.1903	-0.3281	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1493	25.1	51.6	0.0000	0.0000	Y	N	10/10/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1494	26.8	3163	0.0000	-0.9843	Y	N	10/10/2011	2	Y	OD	N	Scrap Steel	2	1	5	LIP	N		18	12	
1495	63	129	0.0820	-0.0820	Y	N	10/10/2011	4	Y	OD	N	Scrap Steel	4	1	5	LIP	N		12	1	
1496	10.9	21.7	-0.4364	0.0000	Y	N	9/26/2011	12	Y	OD	N	Scrap Metal	12	1	1	LIP	N		10	1	
1497	61.9	313.2	-0.4921	0.0000	Y	N	9/26/2011	12	Y	OD	N	Wire	12	3	3	LIP	N		18	1	
1498	5.8	21.2	0.0558	0.3839	Y	N	9/26/2011	6	Y	OD	N	Wire	6	1	0.5	LIP	N		3	0.15	
1499	15.4	35.5	0.0000	0.0000	Y	N	9/26/2011	12	Y	OD	N	Scrap Metal	12	2	1	LIP	N		6	6	
1500	50.8	58	-0.6562	0.1378	Y	N	10/10/2011	6	Y	OD	N	Scrap Metal	6	5	8	LIP	N		3	2	
1501	28.4	40.8	0.6562	0.1083	Y	N	9/26/2011	6	Y	OD	N	Rebar	6	1	5	LIP	N		24	24	
1502	496.6	778	-0.3281	-0.1083	Y	N	9/26/2011	1	Y	OD	N	Scrap Metal	1	1	10	LIP	N		8	8	
1503	8	84.4	0.0000	0.1083	Y	N	9/26/2011	6	Y	OD	N	Wire	6	1	0.5	LIP	N		2	0.15	
1504	24.6	196.1	0.7119	0.6562	Y	N	9/26/2011	6	Y	OD	N	Rebar	6	1	5	LIP	N		24	0.5	
1505	13.9	178	-0.8465	-0.9580	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1506	13.6	31	0.0000	0.0000	Y	N	9/26/2011	12	Y	OD	N	Scrap Metal	12	1	1	LIP	N		18	1	
1507	91.8	132.6	-0.1640	0.1640	Y	N	10/10/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1508	144.5	244	0.0558	0.6562	Y	N	9/26/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		6	4	
1509	9.1	35.1	-0.1640	-0.9843	Y	N	9/26/2011	24	Y	OD	N	Scrap Metal	24	10	10	LIP	N		24	24	
1510	11.7	20.6	0.0000	0.0000	Y	N	9/26/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		3	3	
1511	72.9	142.4	0.0000	0.0000	Y	N	9/26/2011	6	Y	OD	N	Nails	6	7	1	LIP	N		3	0.15	
1512	65.6	348	-0.1640	-0.8202	Y	N	9/26/2011	12	Y	OD	N	Rebar	12	1	3	LIP	N		24	0.5	
1513	80.2	97.8	0.6562	0.0558	Y	N	10/10/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	Y	Y	3	2	
1514	14.8	22.9	0.6562	0.0000	Y	N	9/26/2011	6	Y	OD	N	Scrap Metal	6	2	3	LIP	Y	Y	4	4	
1515	31.9	154	0.6562	0.2461	Y	N	10/10/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1516	7.8	17.9	0.0000	0.0000	Y	N	9/26/2011	6	Y	OD	N	Nails	6	1	1	LIP	N		6	0.25	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
1517	90.3	395.6	-0.3281	-0.2461	Y	N	9/26/2011	12	Y	OD	N	Rebar	12	1	3	LIP	N		48	0.5	
1518	13.5	15.2	0.0000	0.0000	Y	N	9/26/2011	6	Y	OD	N	Scrap Metal	6	1	0.5	LIP	N		6	1	
1519	7.7	17.4	0.0000	0.0000	Y	N	9/26/2011	12	Y	OD	N	Scrap Metal	12	1	2	LIP	N		4	4	
1520	17.7	45.1	0.2461	0.3839	Y	N	10/10/2011	6	Y	OD	N	Scrap Metal	6	4	7	LIP	N		3	2	
1521	18.2	38.5	-0.3281	-0.0820	Y	N	9/26/2011	6	Y	OD	N	Wire	6	8	1	LIP	N		4	0.15	
1522	85.4	365.4	-0.3839	0.1378	Y	N	9/26/2011	6	Y	OD	N	Wire	6	20	5	LIP	N		10	0.15	
1523	5.5	8.8	0.0000	0.0000	Y	N	9/26/2011	6	Y	OD	N	Wire	6	1	0.5	LIP	N		2	0.15	
1524	12.2	22.5	0.1640	0.0000	Y	N	9/26/2011	12	Y	OD	N	Scrap Metal	12	1	1	LIP	N		4	3	
1525	5.7	10	-0.4364	0.0558	Y	N	9/26/2011	24	Y	OD	N	Scrap Metal	24	10	5	LIP	N		24	24	
1526	12	29.2	0.1083	0.3281	Y	N	9/26/2011	12	Y	OD	N	Scrap Metal	12	1	1	LIP	N		3	3	
1527	16.8	30.3	-0.3281	0.2461	Y	N	9/26/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		3	3	
1528	12.7	19.2	0.0558	-0.1640	Y	N	9/26/2011	6	Y	OD	N	Scrap Metal	6	2	5	LIP	N		3	3	
1529	12	75.2	0.3839	-0.4364	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1530	20.9	34.6	0.0000	0.3281	Y	N	9/26/2011	12	Y	OD	N	Scrap Metal	12	19	5	LIP	Y	Y	5	5	
1531	10	27.1	-0.8202	-0.6562	Y	N	9/26/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		2	2	
1532	13.3	20.6	0.1640	0.0558	Y	N	9/26/2011	6	Y	OD	N	Nails	6	2	1	LIP	N		4	0.15	
1533	13.9	30.8	0.0000	0.9843	Y	N	9/26/2011	12	Y	OD	N	Scrap Metal	12	1	2	LIP	N		3	3	
1534	8.4	39	0.1640	-0.4921	Y	N	10/10/2011	6	Y	OD	N	Scrap Steel	6	1	5	LIP	N		8	1	
1535	10.3	22.9	-0.3839	0.0000	Y	N	9/26/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		48	1	
1536	16.5	30.1	-0.4659	-0.2198	Y	N	9/26/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		3	3	
1537	8.9	16.1	0.6562	0.6562	Y	N	9/26/2011	2	Y	OD	N	Scrap Metal	2	1	1	LIP	N		18	1	
1538	23.3	32.9	-0.2461	0.4921	Y	N	10/10/2011	3	Y	OD	N	Scrap Metal	3	1	1	LIP	N		1	1	
1539	17.2	41.2	0.0000	0.4101	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	2	3	LIP	N		1	1	
1540	16.7	76	0.1378	0.3281	Y	N	9/26/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		5	1	
1541	12.6	45.5	0.0000	0.9022	Y	N	9/26/2011	6	Y	OD	N	Scrap Metal	6	1	5	LIP	N		8	4	
1542	6.9	99.4	-0.9022	0.8202	Y	N	9/26/2011	6	Y	OD	N	Wire	6	1	0.5	LIP	N		6	0.15	
1543	17.3	81.1	-0.0820	0.3281	Y	N	9/26/2011	6	Y	OD	N	Scrap Metal	6	1	5	LIP	N		6	4	
1544	9.2	26.8	0.0000	0.0000	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	10	15	LIP	N		3	2	
1545	8.5	13.8	-0.4921	-0.1640	Y	N	9/26/2011	6	Y	OD	N	Wire	6	1	0.5	LIP	Y	Y	3	0.15	
1546	35	96.7	0.0000	0.0000	Y	N	9/26/2011	12	Y	OD	N	Rebar	12	1	3	LIP	N		36	0.5	
1547	13.8	24	-0.6562	-0.1083	Y	N	9/26/2011	12	Y	OD	N	Scrap Metal	12	1	2	LIP	N		3	3	
1548	16.6	23.1	0.3281	0.0000	Y	N	9/26/2011	6	Y	OD	N	Scrap Metal	6	2	4	LIP	N		3	3	
1549	106.1	123.1	0.7382	0.1903	Y	N	10/10/2011	8	Y	OD	N	Pipe	8	1	5	LIP	N		18	1	
1550	211	1017.8	0.2461	0.9022	Y	N	10/10/2011	6	Y	OD	N	Pipe	6	1	15	LIP	N		13	4	
1551	56.5	445	-0.0558	-0.9843	Y	N	9/26/2011	6	Y	OD	N	Wire	6	20	5	LIP	N		5	0.15	
1552	168.6	1244	0.8202	0.9843	Y	Y	9/26/2011	0	Y	OD	N	Rebar	0	1	20	LIP	N		24	24	
1553	13.4	16.8	-0.3281	0.0000	Y	N	10/10/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1554	8.5	415	0.9022	0.3839	Y	N	9/26/2011	6	Y	OD	N	Wire	6	1	1	LIP	N		3	0.15	
1555	5.3	11.2	-0.3018	-0.2198	Y	N	9/26/2011	1	Y	OD	N	Scrap Metal	1	1	1	LIP	N		6	6	
1556	26.5	70.1	0.3281	0.4921	Y	N	9/26/2011	6	Y	OD	N	Scrap Metal	6	1	5	LIP	N		8	7	
1557	9.5	22.2	0.1083	-0.8202	Y	N	9/26/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		4	4	
1558	6	13.5	0.3281	0.3281	Y	N	9/26/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		3	3	
1559	29.8	3163	-0.3281	-0.9843	Y	N	10/10/2011	2	Y	OD	N	Scrap Steel	2	1	5	LIP	N		18	12	
1560	26	72.5	0.0000	-0.1640	Y	N	10/10/2011	4	Y	OD	N	Pipe	4	1	1.5	LIP	N		6	2	
1561	34	201.6	0.1640	-0.0262	Y	N	10/10/2011	6	Y	OD	N	Scrap Steel	6	1	5	LIP	N		4	12	
1562	22.1	58.6	0.8202	0.1640	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	10	15	LIP	N		3	2	
1563	114.7	144.6	-0.3281	0.1640	Y	N	9/26/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		6	6	
1564	200.9	246.5	0.6562	0.4921	Y	N	10/10/2011	5	Y	OD	N	Other	5	1	1	LIP	N		36	36	
1565	79.4	141.3	0.0000	0.4921	Y	N	9/26/2011	24	Y	OD	N	Scrap Metal	24	10	19	LIP	N		24	24	
1566	24.9	56.8	0.0000	0.0000	Y	N	9/26/2011	24	Y	OD	N	Rebar	24	1	20	LIP	N		24	24	
1567	19.2	100.3	-0.3281	-0.9843	Y	N	9/26/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		4	3	
1568	24.9	47.6	-0.4921	-0.1083	Y	N	9/26/2011	24	Y	OD	N	Scrap Metal	24	4	5	LIP	N		4	4	
1569	72.6	68.6	-0.1640	0.1903	Y	N	10/10/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1570	140.6	195.8	0.0000	-0.3281	Y	N	10/10/2011	6	Y	OD	N	Pipe	6	1	3	LIP	N		20	5	
1571	15.7	27.5	-0.2461	-0.1640	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	10	15	LIP	N		3	2	
1572	15.7	20.4	0.2067	0.0000	Y	N	10/10/2011	4	Y	OD	N	Nails	4	1	0.25	LIP	N		9	0.1	
1573	18.6	29.2	0.3281	0.2461	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	N		2	2	
1574	170.8	182.6	-0.1640	0.0000	Y	N	10/10/2011	8	Y	OD	N	Pipe	8	1	10	LIP	N		24	1	
1575	54.1	119.2	0.3281	0.3281	Y	N	10/10/2011	2	Y	OD	N	Nails	2	100	3	LIP	N		3	0.1	
1576	11.9	40.5	0.3281	0.2067	Y	N	10/10/2011	2	Y	OD	N	Wire	2	1	0.1	LIP	N		36	0.1	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
1577	141.7	151	0.0000	-0.9843	Y	N	10/10/2011	4	Y	OD	N	Other	4	1	1	LIP	N		36	36	
1578	13.4	24	-0.1903	-0.6562	Y	N	10/10/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	1	
1579	5.8	7.2	0.4921	0.0000	Y	N	10/10/2011	1	Y	OD	N	Nails	1	1	0.1	LIP	N		2	0.1	
1580	12.8	23.8	-0.2461	-0.9843	Y	N	10/10/2011	4	Y	OD	N	Pipe	4	1	1	LIP	N		4	0.5	
1581	11.4	25.4	0.3281	0.0000	Y	N	10/10/2011	3	Y	OD	N	Scrap Metal	3	1	0.5	LIP	N		5	0.5	
1582	100.3	128.6	0.0000	0.0000	Y	N	10/10/2011	4	Y	OD	N	Scrap Steel	4	1	10	LIP	Y	Y	16	1	
1583	58.1	82.9	-0.2461	0.1903	Y	N	10/10/2011	4	Y	OD	N	Pipe	4	1	1.5	LIP	N		6	0.2	
1584	19.4	32.4	-0.2461	0.0000	Y	N	10/10/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1585	63.5	93.8	0.0000	0.0000	Y	N	10/5/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1586	69.1	84.8	-0.2067	0.0000	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		5	3	
1587	242.5	380.4	0.0000	0.0000	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	25	LIP	N		18	8	
1588	88.6	206.3	-0.0262	-0.6299	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1589	49.7	94	-0.0394	-0.4364	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1590	28.2	52.1	-0.1640	0.0000	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1591	36	139	-0.1640	0.2723	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1592	93.2	178.4	-0.0394	-0.1083	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		8	4	
1593	23.8	48.6	0.0000	0.0000	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1594	13.5	41.1	0.0394	0.5348	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1595	42	76	-0.2461	-0.1903	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1596	548.8	750	0.0000	0.0000	Y	N	10/5/2011	12	Y	OD	N	Scrap Metal	12	50	100	LIP	N		6	4	
1597	37	91.6	-0.3675	-0.7382	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1598	23.2	45.6	-0.2723	0.0394	Y	N	10/5/2011	4	Y	OD	N	Scrap Metal	4	3	5	LIP	Y	Y	3	2	
1599	14.2	12.6	0.0000	-0.6562	Y	N	9/26/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	N		4	2	
1600	127.3	319	-0.0820	0.6562	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	1	10	LIP	N		10	8	
1601	8.2	11	0.2461	0.3281	Y	N	10/5/2011	6	Y	OD	N	Wire	6	1	0.1	LIP	N		24	0.1	
1602	52.4	120.1	0.3281	0.3281	Y	N	9/26/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		36	0.25	
1603	18.8	26.6	0.0000	0.0000	Y	N	10/5/2011	6	Y	OD	N	Wire	6	1	0.5	LIP	N		36	0.2	
1604	10.6	61.5	0.6562	0.4921	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1605	27	153.2	0.0000	0.9843	Y	N	9/26/2011	6	Y	OD	N	Scrap Metal	6	1	15	LIP	N		12	8	
1606	70	175	0.0000	0.3281	Y	N	10/5/2011	6	Y	OD	N	Scrap Steel	6	1	5	LIP	N		6	1	
1607	6.3	10.6	0.1083	0.1083	Y	N	9/26/2011	1	Y	OD	N	Nails	1	5	1	LIP	N		2	0.01	
1608	816	1551.9	0.0000	0.0000	Y	N	10/5/2011	1	Y	OD	N	Scrap Steel	1	3	5	LIP	Y	Y	8	8	
1609	11.5	20.2	0.0000	0.6463	Y	N	9/26/2011	0	Y	OD	N	Scrap Steel	0	1	0.2	LIP	N		1.5	1.5	
1610	98.9	152	0.0000	0.0000	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		6	4	
1611	12	29.2	0.0000	0.3281	Y	N	9/26/2011	3	Y	OD	N	Nails	1	1	0.01	LIP	N		2	0.1	
1611	12	29.2	0.0000	0.3281	Y	N	9/26/2011	3	Y	OD	N	Scrap Steel	3	1	1	LIP	N		0.25	8	
1612	21.9	28	-0.1903	-0.5741	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	3	8	LIP	N		3	2	
1613	19.6	25.1	-0.2461	0.1083	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	5	5	LIP	N		3	3	
1614	15	52	0.1083	0.4921	Y	N	9/26/2011	4	Y	OD	N	Wire	4	2	0.1	LIP	N		8	0.1	
1615	8.8	12.9	-0.1640	-0.1640	Y	N	9/26/2011	1	Y	OD	N	Nails	1	8	0.1	LIP	N		2	0.1	
1616	44.2	362	0.0000	0.9843	Y	N	9/26/2011	6	Y	OD	N	Scrap Metal	6	1	10	LIP	N		8	6	
1617	20.2	24.3	-0.3281	-0.0394	Y	N	10/5/2011	6	Y	OD	N	Scrap Steel	6	3	2	LIP	N		2	3	
1618	52.4	55.2	0.0000	0.2723	Y	N	9/26/2011	6	Y	OD	N	Scrap Metal	6	5	10	LIP	N		4	4	
1619	9.1	20.4	0.1083	0.6562	Y	N	9/26/2011	2	Y	OD	N	Scrap Steel	2	1	4	LIP	N		16	0.25	
1620	9.5	25.4	0.4921	0.6562	Y	N	9/26/2011	2	Y	OD	N	Scrap Metal	2	3	2	LIP	N		1	1	
1621	8.2	15.4	0.0000	-0.1640	Y	N	10/5/2011	4	Y	OD	N	Nails	4	1	0.1	LIP	N		9	0.1	
1622	25.9	63	-0.8202	-0.4364	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	2	10	LIP	N		6	4	
1623	144.4	218.4	0.0000	0.0000	Y	N	10/5/2011	5	Y	OD	N	Scrap Steel	5	1	5	LIP	N		8	1	
1624	6.9	26.6	0.0000	0.6562	Y	N	9/26/2011	0	Y	OD	N	Wire	0	1	0.1	LIP	N		48	0.1	
1625	6.2	8.1	0.0000	0.6562	Y	N	9/26/2011	12	N								N				
1626	33.9	59.5	0.0000	0.1378	Y	N	9/26/2011	1	Y	OD	N	Scrap Steel	1	2	0.2	LIP	Y	Y	18	0.25	
1627	8.9	11.7	0.1903	0.0000	Y	N	9/26/2011	0	Y	OD	N	Wire	0	1	0.1	LIP	N		8	0.1	
1628	34.5	43.7	0.0000	0.0000	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1629	28.6	56	0.0000	0.3281	Y	N	9/26/2011	4	Y	OD	N	Wire	4	2	0.1	LIP	N		6	0.1	
1630	5.2	21.6	0.0000	0.0000	Y	N	9/26/2011	0	Y	OD	N	Scrap Steel	0	1	0.5	LIP	N		0.1	8	
1631	17.3	52.6	0.2723	0.0000	Y	N	9/26/2011	0	Y	OD	N	Scrap Steel	0	2	1	LIP	N		4	8	
1632	10.2	11.8	0.0000	0.0000	Y	N	9/26/2011	1	Y	OD	N	Wire	1	1	0.1	LIP	N		6	0.1	
1633	21.3	48.8	0.2723	0.3839	Y	N	9/26/2011	0	Y	OD	N	Wire	0	2	0.1	LIP	N		8	0.1	
1634	94.3	172.4	0.0000	0.0000	Y	N	9/26/2011	0	Y	OD	N	Wire	0	2	0.2	LIP	N		36	0.1	
1635	5.8	6.2	0.6562	0.0000	Y	N	9/26/2011	1	Y	OD	N	Wire	1	1	0.1	LIP	N		8	0.1	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
1636	29	47.5	0.3839	0.3281	Y	N	9/26/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		4	4	
1637	62.2	106	0.0000	0.4921	Y	N	9/26/2011	3	Y	OD	N	Wire	3	1	0.3	LIP	N		16	0.2	
1637	62.2	106	0.0000	0.4921	Y	N	9/26/2011	3	Y	OD	N	Nails	2	2	1	LIP	N		2	0.1	
1638	45.5	55.5	0.0000	0.0000	Y	N	9/26/2011	3	Y	OD	N	Scrap Steel	0	2	1	LIP	N		4	8	
1638	45.5	55.5	0.0000	0.0000	Y	N	9/26/2011	3	Y	OD	N	Scrap Metal	3	1	0.5	LIP	N		1	1	
1639	8.3	22.2	0.0000	0.3281	Y	N	9/26/2011	4	Y	OD	N	Scrap Metal	4	1	5	LIP	N		4	3	
1640	24.2	32	0.0000	0.0000	Y	N	9/26/2011	4	Y	OD	N	Scrap Steel	3	1	0.5	LIP	N		4	8	
1640	24.2	32	0.0000	0.0000	Y	N	9/26/2011	4	Y	OD	N	Scrap Metal	4	2	0.5	LIP	N		1	1	
1641	7.1	113	0.0558	0.6562	Y	N	9/26/2011	6	Y	OD	N	Wire	6	3	0.1	LIP	Y	Y	6	0.1	
1642	29.3	951	-0.1903	-0.9580	Y	N	10/5/2011	0	Y	OD	N	Scrap Steel	0	1	5	LIP	N		8	8	
1643	19.1	32.5	0.0820	0.3281	Y	N	9/26/2011	4	Y	OD	N	Scrap Metal	4	3	4	LIP	Y	Y	2	2	
1644	8.6	24.7	0.0000	0.0000	Y	N	9/26/2011	3	Y	OD	N	Scrap Steel	3	1	0.5	LIP	Y	Y	36	0.25	
1645	34	79	0.9843	0.6562	Y	N	9/26/2011	2	Y	OD	N	Wire	2	1	0.5	LIP	N		18	0.1	
1646	33.3	34.3	0.1083	0.2461	Y	N	9/26/2011	3	Y	OD	N	Scrap Metal	3	3	3.3	LIP	N		3	3	
1647	145.8	870	0.3281	0.6562	Y	Y	9/26/2011	0	Y	OD	N	Scrap Steel	0	1	1	LIP	N		48	0.25	
1648	18.3	35.1	0.0000	0.1640	Y	N	9/26/2011	3	Y	OD	N	Wire	3	2	0.1	LIP	N		10	0.1	
1649	176.9	2535	-0.3281	-0.9580	Y	N	10/5/2011	36	Y	OD	N	Pipe	36	1	30	LIP	N		36	5	
1650	8.1	17	-0.0820	-0.9022	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	5	5	LIP	N		1	1	
1651	61.8	191.3	-0.3281	0.6562	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1652	13.1	16.4	0.1903	-0.1903	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	5	5	LIP	N		1	1	
1653	11.9	47.5	0.9843	0.9843	Y	N	9/26/2011	2	Y	OD	N	Wire	2	1	0.2	LIP	N		48	0.1	
1654	43.5	79.1	0.0000	-0.4921	Y	N	10/5/2011	6	Y	OD	N	Scrap Steel	6	1	1.5	LIP	N		6	1.4	
1655	171.9	2519	0.2461	0.7382	Y	N	10/5/2011	3	Y	OD	N	Anchor, ground	3	1	100	LIP	N		36	8	
1656	6.2	1.8	0.0000	0.0000	N	N	10/5/2011	3	Y	OD	N	Nails	3	1	0.1	LIP	N		2	0.1	
1657	27.1	61.4	0.3281	0.6299	Y	N	10/5/2011	4	Y	OD	N	Scrap Metal	4	1	5	LIP	N		8	4	
1658	33.7	47.2	0.0000	0.1640	Y	N	10/5/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1659	11.3	29	0.0000	0.0000	Y	N	9/26/2011	0	N	OD	N	Asphalt	0	1	1	LIP	N		36	36	
1660	15.9	24.7	-0.1378	0.0000	Y	N	9/26/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		4	4	
1661	9.3	37	0.6562	-0.6562	Y	N	10/5/2011	4	Y	OD	N	Nails	4	6	2	LIP	N		3	0.1	
1662	5.1	27.4	0.0000	0.4921	Y	N	9/26/2011	1	Y	OD	N	Scrap Metal	1	1	1	LIP	N		2	0.5	
1663	43.9	114.4	0.4921	0.0000	Y	N	9/26/2011	6	Y	OD	N	Scrap Steel	6	1	1	LIP	N		48	0.25	
1664	37.3	59.4	-0.0820	-0.3018	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	4	10	LIP	N		4	3	
1665	70.3	174.7	0.2461	0.0000	Y	N	9/26/2011	6	Y	OD	N	Scrap Steel	6	1	1	LIP	N		48	0.25	
1666	5.5	9.2	0.5741	0.0000	Y	N	9/26/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1667	7.3	29.2	0.0000	0.3281	Y	Y	9/26/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1668	60.4	100.3	-0.2461	-0.1903	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	3	5	LIP	N		6	5	
1669	72.2	157.4	0.2461	0.0000	Y	N	9/26/2011	0	Y	OD	N	Scrap Steel	0	1	0.2	LIP	N		8	0.25	
1670	64.9	121	0.6562	0.0000	Y	N	9/26/2011	0	Y	OD	N	Scrap Steel	0	1	1	LIP	N		8	0.25	
1671	18.1	33.4	0.0000	-0.2461	Y	N	10/5/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1672	61.1	92	-0.2067	0.0000	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	5	5	LIP	N		3	2	
1673	34.9	67	0.0000	-0.2461	Y	N	10/5/2011	4	Y	OD	N	Wire	4	1	0.5	LIP	N		24	0.1	
1674	60.8	94.6	-0.3018	-0.2461	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	5	5	LIP	N		3	2	
1675	19.6	25	0.0000	0.0000	Y	N	10/5/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1676	8.5	17.7	0.0000	0.0000	Y	N	10/5/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1677	30.5	61.4	0.0000	-0.2461	Y	N	10/5/2011	1	Y	OD	N	Wire	1	1	0.2	LIP	N		12	0.1	
1678	13	21	0.2461	0.3675	Y	N	10/5/2011	2	Y	OD	N	Nails	2	1	0.5	LIP	N		6	0.1	
1679	6	15.8	-0.1378	0.1640	Y	N	10/5/2011	4	Y	OD	N	Nails	4	2	0.1	LIP	N		6	0.1	
1680	62.4	115	0.0000	0.0000	Y	N	10/5/2011	4	Y	OD	N	Nails	4	12	0.75	LIP	N		9	0.1	
1681	21.7	33.7	-0.0820	-0.1640	Y	N	10/5/2011	6	Y	OD	N	Nails	6	2	0.1	LIP	Y	Y	5	0.1	
1682	5.6	10.4	0.0820	0.4364	Y	N	10/7/2011	6	Y	OD	N	Nails	6	1	0.2	LIP	N		3	0.1	
1683	22.9	44.5	0.4921	0.4101	Y	N	10/7/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		2	1	
1684	14.3	55.2	0.0000	-0.4364	Y	N	10/7/2011	7	Y	OD	N	Scrap Metal	7	3	3	LIP	N		2	2	
1685	27.4	39.5	-0.1903	0.0000	Y	N	10/7/2011	8	Y	OD	N	Scrap Metal	8	2	1	LIP	N		2	1	
1686	26.8	35.9	-0.3281	0.0000	Y	N	10/7/2011	2	Y	OD	N	Scrap Metal	2	1	1	LIP	N		3	1	
1687	313.7	486	0.0000	0.0000	Y	N	10/7/2011	8	Y	OD	N	Fence Post	8	1	5	LIP	N		18	2	
1688	55.2	83.5	0.0000	-0.1640	Y	N	10/7/2011	7	Y	OD	N	Scrap Metal	7	1	4	LIP	N		5	3	
1689	115.9	558	-0.4921	-0.6299	Y	N	10/7/2011	4	Y	OD	N	Scrap Metal	4	1	20	LIP	Y	Y	11	9	
1690	61.6	157.2	0.3281	-0.1378	Y	N	10/7/2011	9	Y	OD	N	Scrap Metal	9	1	5	LIP	N		12	3	
1691	43.9	163.4	-0.5741	-0.7382	Y	N	10/7/2011	4	Y	OD	N	Scrap Metal	4	3	3	LIP	N		5	2	
1692	61.8	146.1	0.0394	-0.6299	Y	N	10/7/2011	5	Y	OD	N	Scrap Metal	5	2	4	LIP	N		6	4	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12,168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
1693	33.2	148.1	-0.0394	-0.5741	Y	N	10/7/2011	9	Y	OD	N	Scrap Metal	9	4	5	LIP	N		4	1	
1694	24.9	70.2	0.1640	0.4921	Y	N	10/7/2011	7	Y	OD	N	Scrap Metal	7	1	2	LIP	N		5	1	
1695	556.6	651.4	0.1903	0.0000	Y	N	10/7/2011	8	Y	OD	N	Scrap Metal	8	1	13	LIP	N		9	7	
1696	66.5	187.5	0.0000	0.6299	Y	N	10/7/2011	4	Y	OD	N	Scrap Metal	4	5	6	LIP	N		4	2	
1697	509.1	622	0.0820	0.1640	Y	N	10/7/2011	7	Y	OD	N	Scrap Metal	7	4	18	LIP	N		9	8	
1698	33.2	65.6	0.0000	0.0000	Y	N	10/7/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		4	1	
1699	16.2	130	0.0262	0.4921	Y	N	10/7/2011	6	Y	OD	N	Scrap Metal	6	22	4	LIP	N		3	3	
1700	45.6	84.9	0.0000	-0.4364	Y	N	10/7/2011	8	Y	OD	N	Scrap Metal	8	1	3	LIP	N		6	2	
1701	67.9	122.2	0.0394	-0.1640	Y	N	10/7/2011	8	Y	OD	N	Scrap Metal	8	3	4	LIP	N		3	2	
1702	512.2	619	-0.2461	0.1640	Y	N	10/7/2011	9	Y	OD	N	Scrap Metal	9	2	14	LIP	N		10	6	
1703	67.9	148.9	0.1378	-0.1640	Y	N	10/7/2011	7	Y	OD	N	Scrap Metal	7	2	4	LIP	N		3	3	
1704	48.2	129	0.0000	0.0000	Y	N	10/7/2011	7	Y	OD	N	Scrap Metal	7	4	4	LIP	N		2	3	
1705	11.2	15.5	0.0000	0.0000	Y	N	10/7/2011	5	Y	OD	N	Scrap Metal	5	1	1	LIP	N		1	1	
1706	7.3	36.4	0.2461	0.5184	Y	N	10/7/2011	5	Y	OD	N	Scrap Metal	5	1	1	LIP	N		3	1	
1707	15.1	27.2	0.0394	-0.1640	Y	N	10/7/2011	5	Y	OD	N	Scrap Metal	5	1	1	LIP	N		2	1	
1708	84.4	122.9	0.0000	0.0000	Y	N	10/7/2011	7	Y	OD	N	Scrap Metal	7	2	3	LIP	N		4	2	
1709	32.6	124	0.0000	0.4921	Y	N	10/7/2011	9	Y	OD	N	Scrap Metal	9	1	3	LIP	Y	Y	6	4	
1710	9	16.5	0.0820	-0.3018	Y	N	10/4/2011	2	Y	OD	N	Nails	2	2	0.1	LIP	N		3	0.1	
1711	21.4	29	0.0000	0.0000	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		2	2	
1712	28.5	55.9	0.6562	0.0000	Y	N	10/11/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	8	
1713	13.9	22.2	0.0000	0.0000	Y	N	10/4/2011	2	Y	OD	N	Scrap Metal	2	2	4	LIP	N		2	2	
1714	5.2	7.4	0.0000	0.0000	Y	N	9/23/2011	1	Y	OD	N	Wire	1	1	0.25	LIP	N		2	0.15	
1715	27.1	35.4	0.0000	0.0000	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	3	6	LIP	N		2	2	
1716	5.9	9.4	0.0000	0.0000	Y	N	9/23/2011	6	Y	OD	N	Wire	6	1	0.25	LIP	N		2	0.15	
1717	12	58	0.1640	0.3281	Y	N	9/23/2011	2	Y	OD	N	Wire	2	1	0.25	LIP	N		4	0.15	
1718	91.1	94	-0.3281	-0.6562	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1719	1753.1	7653	0.5741	-0.7382	Y	N	10/11/2011	1	Y	OD	N	Other	1	1	120	LIP	N		30	0.25	
1720	5.2	9.5	0.3675	0.0394	Y	N	10/4/2011	2	Y	OD	N	Nails	2	1	0.1	LIP	N		3	0.1	
1721	52.7	111.3	-0.1903	-0.1903	Y	N	9/23/2011	3	Y	OD	N	Wire	3	1	1	LIP	N		8	0.15	
1722	26.5	68.5	0.0000	-0.6562	Y	N	9/23/2011	6	Y	OD	N	Wire	6	1	0.5	LIP	N		6	0.15	
1723	89.6	100.1	0.0000	0.0000	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1724	20.3	90.2	-0.2461	-0.9843	Y	N	9/23/2011	3	Y	OD	N	Wire	3	1	0.5	LIP	N		8	0.15	
1725	12.8	156.2	0.3281	-0.9843	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1726	84.5	206.9	0.6562	0.3281	Y	N	9/23/2011	6	Y	OD	N	Wire	6	1	1	LIP	N		18	0.15	
1726	84.5	206.9	0.6562	0.3281	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		7	1	
1727	35.4	165.9	0.0000	0.0000	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1728	12.4	29.1	0.0000	0.3018	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	Y	Y	3	2	
1729	21.9	20.4	0.3281	-0.3281	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	11	1	LIP	N		36	36	
1730	24.5	102.4	0.0000	0.7940	Y	N	9/23/2011	2	Y	OD	N	Scrap Steel	2	1	3	LIP	N		36	0.25	
1731	58.4	105.5	-0.2461	-0.6299	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1732	7.1	10	-0.2461	0.3281	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		2	2	
1733	16	20.6	0.0000	-0.2461	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	3	4	LIP	N		2	2	
1734	10.7	31.8	0.0000	0.0000	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	3	4	LIP	N		2	2	
1735	17.7	29.8	0.7382	0.0000	Y	N	10/11/2011	4	Y	OD	N	Scrap Steel	4	1	0.2	LIP	N		0.1	8	
1736	12.9	38.4	-0.3281	-0.2461	Y	N	9/23/2011	0	Y	OD	N	Scrap Steel	0	1	2	LIP	N		36	0.25	
1737	9.5	10.1	0.4101	0.0820	Y	N	10/11/2011	2	Y	OD	N	Scrap Metal	2	1	1	LIP	N		1	1	
1738	24.8	78.9	-0.1640	-0.4364	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	2	3	LIP	N		2	2	
1739	39	85.4	0.9843	0.9843	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		6	4	
1740	54.3	106.1	0.0000	0.0000	Y	N	9/23/2011	3	Y	OD	N	Wire	3	1	1	LIP	N		8	0.15	
1741	17	76.8	0.0000	0.7644	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1742	44.9	205.2	0.3281	0.9843	Y	N	9/23/2011	6	Y	OD	N	Wire	6	1	0.5	LIP	Y	Y	10	0.15	
1743	28.4	51	0.2067	-0.2461	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	3	4	LIP	N		2	2	
1744	17.1	57.9	-0.2461	-0.8202	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1745	130.1	427	0.0820	-0.4921	Y	N	10/11/2011	2	Y	OD	N	Bolt	2	3	6	LIP	N		18	0.25	
1746	59	71	0.0000	0.0000	Y	N	10/4/2011	36	Y	OD	N	Pipe	36	1	1	LIP	N		36	4	
1747	138.2	302.4	-0.0558	-0.4921	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	20	LIP	Y	Y	8	8	
1748	78	130	0.4101	-0.4101	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	Y	Y	3	2	
1749	47.1	87.4	0.0000	0.0000	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	6	10	LIP	N		2	2	
1750	7.9	34	0.3018	-0.6299	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1751	24.2	50.1	0.0000	0.0000	Y	N	9/23/2011	6	Y	OD	N	Wire	6	1	0.5	LIP	N		8	0.15	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
1752	24.4	56.1	0.0000	0.0000	Y	N	9/23/2011	2	Y	OD	N	Wire	2	2	0.1	LIP	N		3	0.1	
1753	175.5	22.68	0.6299	-0.9580	Y	N	10/4/2011	2	Y	OD	N	Scrap Steel	2	1	5	LIP	N		8	18	
1754	71.1	146.2	0.1903	-0.1903	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1755	38.8	51.6	0.3018	0.1640	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1756	28	50.2	0.0000	0.0000	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1757	14.2	25.6	0.0000	0.0000	Y	N	9/23/2011	2	Y	OD	N	Scrap Metal	2	1	0.3	LIP	N		1	1	
1758	27	98.6	-0.3281	0.4921	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1759	22.2	67.2	0.3281	0.3281	Y	N	9/23/2011	3	Y	OD	N	Nails	3	3	0.1	LIP	N		2	0.1	
1760	61.2	99.5	0.1903	-0.1378	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1761	23.3	45.9	0.0558	0.4921	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1762	12.2	36.8	0.1903	0.3281	Y	N	9/23/2011	3	Y	OD	N	Wire	3	1	0.5	LIP	N		5	0.15	
1763	30.6	265	0.1640	0.6299	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1764	52.4	129.7	-0.0820	-0.3543	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	6	10	LIP	N		8	4	
1765	45.8	89.4	0.1640	-0.4921	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1766	28.2	68.3	-0.3281	-0.7644	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1767	7.2	11.5	0.0000	0.9843	Y	N	9/23/2011	1	Y	OD	N	Scrap Steel	1	1	0.2	LIP	N		4	0.5	
1768	100.6	169.6	0.0000	0.0000	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1769	17.4	23.2	-0.0394	-0.4659	Y	N	10/4/2011	4	Y	OD	N	Wire	4	1	0.2	LIP	N		8	0.1	
1770	67.7	129.5	-0.4921	0.4364	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1771	17.9	28.4	-0.1378	-0.3839	Y	N	9/23/2011	4	Y	OD	N	Scrap Steel	4	1	0.5	LIP	N		24	0.25	
1772	32.9	53.1	0.6562	-0.2461	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1773	89	131	0.0820	0.3281	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1774	58.9	99.8	0.0000	0.0000	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1775	6.7	10.1	-0.3018	0.0820	Y	N	10/4/2011	2	Y	OD	N	Scrap Metal	2	2	3	LIP	N		2	1	
1776	7.2	16.4	0.0000	0.9843	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	29	0.5	LIP	N		5	5	
1777	108.1	135.5	0.0000	0.0000	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1778	30.5	87	0.0000	-0.7644	Y	N	10/5/2011	4	Y	OD	N	Scrap Metal	4	1	10	LIP	N		4	3	
1779	42.6	129.6	-0.1083	0.2461	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	6	8	LIP	N		2	2	
1780	14.1	19.9	0.5741	0.1640	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1781	106.7	165.3	0.0000	0.0000	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	8	10	LIP	N		3	2	
1782	6.9	25	-0.0820	-0.2067	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	8	10	LIP	N		3	3	
1783	80.3	245	0.0000	0.1903	Y	N	10/5/2011	12	Y	OD	N	Scrap Metal	12	15	20	LIP	N		4	3	
1784	26.2	290	0.1640	-0.9843	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1785	38	76.8	-0.1378	-0.1083	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1786	37.9	107.9	-0.1640	-0.3675	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	8	15	LIP	N		3	2	
1787	168.8	216.2	0.0000	0.3675	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1788	60.4	129	0.1378	-0.1378	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1789	5.2	13.6	-0.1378	0.2067	Y	N	10/4/2011	4	Y	OD	N	Scrap Metal	4	2	3	LIP	N		2	2	
1790	62	123.3	0.0000	0.0000	Y	N	10/4/2011	2	Y	OD	N	Scrap Steel	2	1	4	LIP	Y	Y	4	1	
1791	23.1	50.6	0.2461	0.1903	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1792	22.7	73.4	-0.1903	-0.3281	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1793	30.2	192.6	0.0000	-0.6562	Y	N	10/4/2011	2	Y	OD	N	Scrap Steel	2	1	10	LIP	N		18	3	
1794	30.5	390.2	0.0000	-0.9843	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1795	29.3	66.2	0.0000	-0.2067	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1796	110.1	192.3	0.1640	0.2067	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1797	10.5	16.2	0.0000	0.6562	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		1	1	
1798	45.1	132.3	0.0000	-0.4101	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1799	10.8	18.4	0.3281	0.4921	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		4	4	
1800	16.8	60.4	-0.3675	0.6004	Y	N	10/4/2011	4	Y	OD	N	Bolt	4	1	1	LIP	N		5	0.5	
1801	6.8	9.7	0.0000	0.0000	Y	N	10/4/2011	4	Y	OD	N	Nails	4	2	0.1	LIP	N		4	0.1	
1802	11.8	27.3	0.0000	-0.3675	Y	N	10/4/2011	4	Y	OD	N	Scrap Steel	4	1	0.5	LIP	N		8	1	
1803	95.4	106	0.0394	0.6562	Y	N	10/4/2011	2	Y	OD	N	Bolt	2	1	3	LIP	N		16.5	0.5	
1804	5.3	5.4	-0.0820	-0.7382	Y	N	10/4/2011	1	Y	OD	N	Nails	1	1	0.1	LIP	Y	Y	2	0.1	
1805	24.5	154.2	-0.3281	-0.4364	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1806	12.2	34.8	-0.3839	0.0000	Y	N	9/23/2011	2	Y	OD	N	Scrap Metal	2	1	0.25	LIP	N		1	0.15	
1807	9.8	16	-0.1903	0.4921	Y	N	9/23/2011	3	Y	OD	N	Wire	3	1	0.25	LIP	N		1	0.15	
1808	35.6	91.4	-0.9022	-0.3281	Y	N	10/11/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1809	56.1	65.6	0.6562	-0.9022	Y	N	10/11/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1810	10.9	20.1	0.1378	0.3281	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1811	36.6	203.2	0.0000	-0.9843	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	20	5	LIP	N		24	24	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12,168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
1812	24.6	45.6	0.2461	-0.1640	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1813	89	103.6	0.0000	0.0000	Y	N	10/5/2011	36	Y	OD	N	Pipe	36	1	1	LIP	N		36	8	
1814	18.7	95.2	0.0000	-0.5741	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1815	9	19.8	0.2461	0.1640	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		12	12	
1816	42.3	65.3	0.0000	0.0000	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1817	76.5	91	-0.6562	0.4101	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	3	3	LIP	N		1	1	
1818	7.7	165.5	0.0000	0.9843	Y	Y	10/11/2011	0	Y	OD	N	Other	0	1	5	LIP	N		12	12	
1819	152.8	261.3	0.8202	0.9843	Y	N	10/11/2011	2	Y	OD	N	Pipe	2	1	3	LIP	N		18	0.5	
1820	10	128.9	-0.3281	0.0000	Y	Y	10/11/2011	0	Y	OD	N	Cable	0	1	10	LIP	N		36	0.5	
1821	16	24	0.0000	-0.1640	Y	N	10/11/2011	2	Y	OD	N	Wire	2	2	0.3	LIP	N		12	0.1	
1822	9.6	31.4	0.0000	-0.2461	Y	N	10/11/2011	0	Y	OD	N	Scrap Steel	0	4	1	LIP	N		1.5	1.5	
1823	347.5	463.7	0.6562	0.6562	Y	N	10/11/2011	8	Y	OD	N	Pipe	8	1	1	LIP	N		36	3	
1824	41.4	68.3	0.0558	0.1640	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	3	5	LIP	N		2	2	
1825	40.1	63.6	0.6562	0.0820	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	5	10	LIP	N		3	2	
1826	63.5	114	0.4921	-0.1640	Y	N	10/11/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	Y	Y	3	2	
1827	59.8	104.5	-0.0558	0.2461	Y	N	10/11/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1828	67.1	173.9	-0.2461	0.5184	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1829	9.9	525	-0.3281	0.9843	Y	N	10/5/2011	4	Y	OD	N	Pipe	4	1	10	LIP	N		10	2	
1830	158.7	207	-0.3018	-0.3675	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1831	110.2	377	-0.4921	-0.4101	Y	N	10/5/2011	8	Y	OD	N	Scrap Steel	8	1	2	LIP	N		14	8	
1832	22	65	0.1640	-0.4921	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1833	153.6	278.8	0.0820	-0.3018	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1834	65.6	94.7	0.0000	0.4101	Y	N	10/5/2011	4	Y	OD	N	Pipe	4	1	3	LIP	N		2	4	
1835	11.4	30	0.1903	0.0000	Y	N	10/5/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1836	12.5	88	0.0000	0.9843	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	5	5	LIP	N		1	1	
1837	414.9	8404	-0.0820	0.9843	Y	N	10/5/2011	72	Y	OD	N	Other	72	1	1	LIP	N		72	36	
1838	73	236.2	0.1640	0.8202	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	10	5	LIP	N		12	12	
1839	24.5	87.3	0.0000	0.9843	Y	N	9/23/2011	2	Y	OD	N	Scrap Metal	2	1	1	LIP	N		6	6	
1840	208.6	356.4	-0.2198	-0.3281	Y	N	9/23/2011	12	Y	OD	N	Scrap Metal	12	1	10	LIP	N		10	4	
1841	12.7	332	0.0000	-0.9843	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1842	20.6	44.5	-0.6562	-0.9022	Y	N	9/23/2011	2	Y	OD	N	Scrap Metal	2	1	1	LIP	N		6	6	
1843	65.2	102.6	-0.0820	-0.3281	Y	N	9/23/2011	2	Y	OD	N	Scrap Metal	2	1	5	LIP	Y	Y	6	6	
1844	5.4	6.5	-0.3675	0.4364	Y	N	10/5/2011	2	Y	OD	N	Nails	2	1	0.1	LIP	N		2	0.1	
1845	8.3	238.5	0.0000	-0.9843	Y	N	9/23/2011	2	Y	OD	N	Scrap Steel	2	1	0.5	LIP	N		8	6	
1846	40.5	58	0.4364	0.0000	Y	N	9/23/2011	1	Y	OD	N	Wire	1	1	0.2	LIP	N		36	0.1	
1847	8.8	50.4	0.0558	0.6562	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1848	65.3	94.2	0.1378	0.0000	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1849	13.1	23.5	-0.3281	0.0000	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1850	12.2	30.9	0.0000	0.9022	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1851	58.1	202.4	0.2461	0.4364	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1852	8.6	10.1	0.0558	0.1640	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1853	6.6	22.5	0.0000	0.0000	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1854	42.6	80.3	0.3281	0.3281	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	110	LIP	N		24	24	
1855	22.2	61.2	0.9285	0.1083	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1856	14.3	165.2	0.0000	0.9843	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	10	LIP	N		24	24	
1857	14.2	17.2	0.0000	-0.9022	Y	N	9/23/2011	3	Y	OD	N	Scrap Steel	3	1	3	LIP	N		36	0.5	
1858	7.1	18	-0.1378	0.3018	Y	N	10/5/2011	2	Y	OD	N	Nails	2	2	0.1	LIP	N		3	0.1	
1859	6.5	24.3	0.6562	0.6562	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1860	19.4	104.3	0.0000	-0.9843	Y	N	9/23/2011	6	Y	OD	N	Rebar	6	1	3	LIP	N		6	1	
1861	8.7	16.55	0.0000	0.0000	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	20	10	LIP	N		24	24	
1862	73	140	-0.2461	-0.6562	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	20	10	LIP	N		24	24	
1863	21.5	42.7	0.0000	0.0000	Y	N	10/5/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1864	8.2	14.1	0.0000	0.3281	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1865	39.6	74.1	-0.4101	-0.2461	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1866	22.3	51	0.1083	0.3281	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	29	10	LIP	N		24	24	
1867	121	130.3	0.0000	0.0000	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1868	47.2	72	0.0000	-0.7119	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1869	36.3	82.3	-0.1083	0.3543	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1870	6.2	10.1	0.1083	0.1640	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1871	63.3	91	0.0000	0.0000	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
1872	33.7	102.3	-0.1903	0.4101	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1873	44.6	138	-0.2067	-0.2461	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1874	13.8	17.5	0.0558	0.0558	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1875	11.5	20.1	0.9843	0.0000	Y	N	9/23/2011	2	Y	OD	N	Asphalt	2	1	1	LIP	N		36	36	
1876	21.7	27.5	0.2198	0.1083	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1877	18	201.6	-0.1903	0.6955	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1878	37.9	70.5	0.0000	0.0000	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1879	28.6	47.9	0.0000	0.0000	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1880	9.7	39	0.0000	0.3543	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1881	32.2	63.9	-0.2461	0.0820	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1881	32.2	63.9	-0.2461	0.0820	Y	N	10/5/2011	6	Y	OD	N	Scrap Steel	0	1	1	LIP	N		120	0.5	
1882	29.9	66.1	-0.1083	-0.3543	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1883	41.8	119.5	0.0000	-0.2461	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1884	165.6	266	0.1903	0.0000	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1885	76.3	254	-0.1903	0.3281	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1886	40	77.9	0.0000	0.0000	Y	N	10/5/2011	4	Y	OD	N	Scrap Metal	4	5	10	LIP	N		3	2	
1887	20.8	49.8	0.0000	0.0000	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1888	10.2	70.4	0.3281	-0.0820	Y	N	10/5/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1889	58.1	182.5	0.0000	-0.4101	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	3	8	LIP	N		6	3	
1890	56	107	-0.0820	-0.2461	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1891	27.3	63.8	0.2461	-0.3281	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1892	40.5	92.6	0.1640	-0.6562	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1893	11.1	50.5	0.3018	-0.1903	Y	N	10/5/2011	1	Y	OD	N	Scrap Steel	1	3	1	LIP	Y	Y	108	0.5	
1894	6	13	0.0000	0.0000	Y	N	10/5/2011	12	Y	OD	N	Scrap Steel	12	1	2	LIP	N		8	1	
1895	68.2	106.3	-0.3018	0.0000	Y	N	10/5/2011	4	Y	OD	N	Scrap Metal	4	5	8	LIP	N		3	2	
1896	54.1	794	0.0000	0.9843	Y	N	10/5/2011	1	Y	OD	N	Scrap Steel	1	1	4	LIP	N		14	10	
1897	10.4	32	-0.3281	-0.3281	Y	N	10/5/2011	4	Y	OD	N	Chain	4	1	0.5	LIP	N		3	1	
1898	9.9	10.5	0.0000	0.0000	Y	N	10/11/2011	2	Y	OD	N	Scrap Metal	2	1	3	LIP	N		2	1	
1899	8.1	23.1	-0.0558	0.3281	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		3	3	
1900	22.7	36	-0.2461	0.3281	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		6	6	
1901	28.6	44.5	-0.1640	0.3281	Y	N	9/23/2011	12	Y	OD	N	Scrap Metal	12	3	10	LIP	N		8	8	
1902	5.3	3.6	0.0000	0.0000	N	N	10/11/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		1	1	
1903	6	17	0.1083	0.9022	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	0.5	LIP	N		6	1	
1904	42.9	271.9	0.0000	0.9022	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	10	LIP	N		6	6	
1905	38.8	45	-0.1640	-0.1640	Y	N	10/11/2011	2	Y	OD	N	Scrap Metal	2	1	3	LIP	N		3	2	
1906	46.8	60.2	0.0000	-0.3281	Y	N	10/11/2011	0	N								Y	Y			item buried under a tree.
1907	349.8	852	-0.6562	-0.9022	Y	N	9/23/2011	8	Y	OD	N	Scrap Steel	4	2	10	LIP	Y	Y	8	4	
1907	349.8	852	-0.6562	-0.9022	Y	N	9/23/2011	8	Y	OD	N	Scrap Metal	8	5	10	LIP	Y	Y	3	3	
1907	349.8	852	-0.6562	-0.9022	Y	N	9/23/2011	8	Y	OD		Scrap Steel	8	1	8	LIP	Y	Y	12	4	
1908	61.4	88.2	0.0000	0.0000	Y	N	10/11/2011	4	Y	OD	N	Bolt	4	1	2	LIP	N		18	0.25	
1909	6.8	43.2	0.0558	0.3281	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	0.5	LIP	N		12	1	
1910	15.5	52.8	-0.9022	0.3281	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	8	LIP	N		8	4	
1911	13.3	27.7	0.0000	-0.9022	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		12	1	
1912	64.3	91.2	0.0000	0.8202	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		6	6	
1913	6.3	12.6	-0.1640	0.2461	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		18	1	
1914	13.1	13	-0.3281	-0.8202	Y	N	9/23/2011	3	Y	OD	N	Scrap Metal	3	3	2	LIP	N		3	3	
1915	11.5	16.2	-0.9843	0.0000	Y	N	10/11/2011	4	Y	OD	N	Nails	4	6	0.25	LIP	N		3	0.1	
1916	9.1	34.1	0.0000	0.9843	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		4	4	
1917	104.8	246.9	0.0558	0.4364	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	4	LIP	N		8	6	
1918	33.4	66.8	0.0000	0.2461	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		3	3	
1919	142.6	299.3	0.0000	0.0000	Y	N	9/23/2011	24	Y	OD	N	Scrap Metal	24	20	25	LIP	N		24	24	
1920	27.4	39.2	-0.0820	-0.4921	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	3	5	LIP	N		3	2	
1921	10.2	72	0.0000	0.4921	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		2	2	
1922	21.5	21.2	-0.6562	0.0000	Y	Y	9/23/2011	1	Y	OD	N	Scrap Metal	1	1	2	LIP	N		18	1	
1923	967.3	1326	0.0000	-0.3281	Y	N	9/23/2011	1	Y	OD	N	Fence Post	1	1	10	LIP	N		48	2	
1924	6.2	31.2	0.0000	0.9843	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		1	1	
1925	10.8	170.3	0.0000	0.9022	Y	N	9/23/2011	4	Y	OD	N	Wire	1	1	0.5	LIP	Y	Y	1	0.15	
1925	10.8	170.3	0.0000	0.9022	Y	N	9/23/2011	4	Y	OD		Bolt	4	1	3	LIP	Y	Y	12	0.5	
1926	24.2	45	0.0000	0.0000	Y	N	10/5/2011	2	Y	OD	N	Nails	2	1	0.2	LIP	N		9	0.1	
1927	9.1	17.5	0.5741	-0.3281	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	2	4	LIP	N		2	2	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
1928	12.8	28.4	0.0000	0.5741	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	2	5	LIP	N		2	2	
1929	16.4	23.3	0.0000	-0.9843	Y	N	10/11/2011	4	Y	OD	N	Bolt	4	1	0.25	LIP	N		2	0.25	
1930	7.1	7.2	0.2461	0.1083	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		1	1	
1931	23.2	40.9	0.0820	0.3839	Y	N	9/23/2011	12	Y	OD	N	Scrap Metal	12	1	3	LIP	N		2	2	
1932	76.8	111.2	0.0000	0.0000	Y	N	9/23/2011	12	Y	OD	N	Scrap Metal	12	20	15	LIP	N		24	25	
1933	10	27.6	0.0558	0.4364	Y	N	9/23/2011	12	Y	OD	N	Scrap Metal	12	1	4	LIP	N		4	3	
1934	20.4	27.2	0.1378	0.4921	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	2	4	LIP	N		2	2	
1935	130	172.5	0.2198	0.1640	Y	N	9/23/2011	6	Y	OD	N	Rebar	6	1	10	LIP	N		24	24	
1936	53.1	200.2	0.9843	0.9843	Y	N	9/23/2011	2	Y	OD	N	Scrap Metal	2	1	5	LIP	N		7	7	
1937	63.8	103	0.0558	0.1640	Y	N	9/23/2011	24	Y	OD	N	Scrap Metal	24	1	10	LIP	N		6	6	
1938	167.3	288.9	0.0000	-0.3281	Y	N	9/23/2011	2	Y	OD	N	Scrap Metal	2	1	5	LIP	N		36	0.5	
1939	82.9	179.4	0.0820	0.5741	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	Y	Y	36	36	
1940	11.7	45.2	-0.3281	-0.9843	Y	N	9/23/2011	6	Y	OD	N	Rebar	6	1	5	LIP	N		24	24	
1941	18.2	65	0.0000	-0.5741	Y	N	9/23/2011	24	Y	OD	N	Scrap Metal	24	1	5	LIP	N		10	5	
1942	28.2	54	0.0000	0.4921	Y	N	9/23/2011	6	Y	OD	N	Rebar	6	1	5	LIP	N		24	24	
1943	9.5	18.2	0.1640	0.0000	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		2	2	
1944	27.3	54.3	0.0000	0.4921	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		3	3	
1945	5	8.4	0.1640	0.2198	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		4	4	
1946	99.5	225	-0.3281	-0.6562	Y	N	9/23/2011	24	Y	OD	N	Rebar	24	2	10	LIP	N		18	1	
1947	23.2	31.8	0.0000	0.2461	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		6	6	
1948	27.3	104	-0.9843	-0.6562	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	6	LIP	N		8	8	
1949	31.9	57.5	0.1083	0.3281	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		4	4	
1950	105.4	171.5	-0.4921	0.0000	Y	N	10/11/2011	6	Y	OD	N	Bolt	6	1	5	LIP	N		8	1	
1951	33.8	47.6	0.1083	0.1378	Y	N	9/23/2011	6	Y	OD	N	Rebar	6	1	5	LIP	N		24	24	
1952	47.6	76.3	0.3281	0.3281	Y	N	9/23/2011	1	Y	OD	N	Scrap Metal	1	1	1	LIP	N		2	2	
1953	26.4	36.2	0.0000	0.0000	Y	N	10/5/2011	0	Y	OD	N	Scrap Steel	0	1	1	LIP	N		4	2	
1954	57.1	78	0.0000	0.0000	Y	N	10/5/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1955	18.1	28	-0.1640	0.0000	Y	N	10/5/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		4	4	
1956	5.1	40.1	-0.1640	-0.9843	Y	N	10/5/2011	4	Y	OD	N	Scrap Metal	4	2	3	LIP	N		2	2	
1957	5.6	2.2	0.0000	0.0000	Y	N	10/5/2011	12	N								Y	Y			
1958	123	37	0.6562	-0.7382	Y	N	10/5/2011	4	Y	OD	N	Wire	4	2	0.1	LIP	N		10	0.1	
1959	70.3	275	0.1903	-0.9843	Y	Y											Y	Y			
1960	6.9	17	0.0820	-0.3675	Y	N	10/5/2011	4	Y	OD	N	Scrap Metal	4	4	5	LIP	N		2	2	
1961	6.9	7.3	0.0000	-0.4659	Y	N	10/5/2011	3	Y	OD	N	Nails	3	2	0.1	LIP	N		3	0.1	
1962	8	16.1	0.0000	0.2461	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		3	3	
1963	56	95.4	0.0000	0.1640	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	15	LIP	N		12	8	
1964	163	198.2	0.0000	0.0000	Y	N	10/5/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1965	31.8	52.4	0.0000	-0.2461	Y	N	10/5/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1966	71.4	127.3	0.0394	0.3281	Y	N	10/5/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1967	12.2	23.2	0.5184	0.0820	Y	N	10/5/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1968	66.4	89	0.0000	0.0000	Y	N	9/23/2011	1	Y	OD	N	Scrap Metal	1	4	5	LIP	N		1	1	
1969	11.2	23.8	0.0000	0.0000	Y	N	10/5/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1970	6.1	6.1	0.0000	-0.9843	Y	N	10/5/2011	4	Y	OD	N	Scrap Metal	4	3	3	LIP	N		1	1	
1971	6	8.1	0.0000	-0.2461	Y	N	9/23/2011	2	Y	OD	N	Scrap Metal	2	1	1	LIP	N		1	1	
1972	92.7	127.9	0.4921	0.0000	Y	N	9/23/2011	3	Y	OD	N	Scrap Metal	3	1	5	LIP	N		7	5	
1973	20.6	126.3	0.0000	0.3281	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		6	5	
1974	11.7	21.9	-0.1640	0.0000	Y	N	9/23/2011	2	Y	OD	N	Scrap Metal	2	1	2	LIP	Y	Y	3	2	
1975	9.3	19.2	0.3281	0.0000	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	3	3	LIP	N		1	1	
1976	41.2	75.8	0.1640	0.0000	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	3	5	LIP	N		2	2	
1977	7.3	42.6	0.3281	0.9843	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	1	10	LIP	N		9	5	
1978	65.4	162	-0.6562	-0.9580	Y	N	10/11/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1979	22.2	64.4	0.2461	0.0558	Y	N	9/23/2011	3	Y	OD	N	Scrap Metal	3	2	5	LIP	N		3	3	
1980	11.3	9.9	0.0820	-0.1083	Y	N	10/5/2011	4	Y	OD	N	Nails	4	2	0.1	LIP	N		5	0.1	
1981	113.7	151	-0.4921	-0.5741	Y	N	10/11/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
1982	31	43.4	0.0000	-0.9843	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		3	2	
1983	21.6	22.6	0.1083	-0.6299	Y	N	10/11/2011	4	Y	OD	N	Scrap Steel	4	1	4	LIP	N		16	1	
1984	22.6	29.7	0.0000	-0.5741	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		3	2	
1985	28	45.4	0.0000	-0.9843	Y	N	10/11/2011	4	Y	OD	N	Bolt	4	1	5	LIP	N		10	1	
1986	114.3	165	0.2461	0.3281	Y	N	9/23/2011	3	Y	OD	N	Scrap Metal	3	3	6	LIP	N		3	3	
1987	11.3	12.3	0.0000	0.3281	Y	N	10/11/2011	4	Y	OD	N	Nails	4	2	0.1	LIP	N		3	0.1	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
1988	130.4	208	0.0000	0.0000	Y	N	10/11/2011	0	Y	OD	N	Nails	0	20	5	LIP	Y	Y	10	0.1	
1989	28.9	4.6	0.0000	0.1640	Y	N	10/5/2011	4	Y	OD	N	Nails	4	1	0.1	LIP	N		2	0.1	
1990	108.8	83.2	0.0000	0.3281	Y	N	10/11/2011	4	Y	OD	N	Cable	4	1	5	LIP	N		48	1	
1991	53.4	78.2	-0.9022	-0.3281	Y	N	10/11/2011	4	Y	OD	N	Cable	4	1	2	LIP	N		24	1	
1992	5.3	9.2	-0.9843	-0.3281	Y	N	10/11/2011	2	Y	OD	N	Nails	2	2	0.1	LIP	N		3	0.1	
1993	5.1	4	0.0000	0.0000	Y	N	10/5/2011	3	Y	OD	N	Nails	3	1	0.1	LIP	N		2	0.1	
1994	5.9	8.8	0.0000	-0.3281	Y	N	10/11/2011	2	Y	OD	N	Nails	2	2	0.1	LIP	N		3	0.1	
1995	51.6	100.2	-0.3839	-0.6562	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
1996	89.5	186.6	0.0000	0.6562	Y	N	10/11/2011	1	Y	OD	N	Bolt	1	1	2	LIP	Y	Y	12	0.5	
1997	74.4	162.8	0.0000	-0.6562	Y	N	10/11/2011	1	Y	OD	N	Bolt	1	1	2	LIP	N		12	0.5	
1998	49.9	68	0.0820	0.0000	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	10	LIP	N		12	8	
1999	18.1	30.4	0.0000	0.0000	N	Y											N				
2000	515.7	966	0.0000	0.0000	Y	N	10/11/2011	5	Y	OD	N	Nails	5	74	6	LIP	N		4	0.1	
2001	9.1	16.2	0.0000	0.5741	Y	N	10/11/2011	7	Y	OD	N	Nails	7	2	1	LIP	N		4	0.1	
2002	8.5	270.3	0.0000	0.9843	Y	N	9/23/2011	6	Y	OD	N	Scrap Steel	6	1	5	LIP	N		8	10	
2003	30	65.9	0.0000	-0.8202	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
2004	12.3	46.2	-0.3281	-0.6562	Y	N	9/23/2011	2	Y	OD	N	Scrap Metal	2	1	5	LIP	N		3	3	
2005	21.3	152	0.9843	0.9843	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	2	4	LIP	N		2	2	
2006	21.4	56	-0.3281	-0.8202	Y	N	9/23/2011	3	Y	OD	N	Wire	3	1	1	LIP	N		18	0.2	
2007	41	47.5	0.0000	0.0000	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	1	7	LIP	N		8	6	
2008	8.9	14.1	0.0000	0.0000	Y	N	9/23/2011	3	Y	OD	N	Scrap Metal	3	1	2	LIP	N		1	1	
2009	8.1	9.5	0.0000	0.4921	Y	N	9/23/2011	8	Y	OD	N	Scrap Metal	8	1	3	LIP	N		4	3	
2010	14.1	58.9	0.3018	0.5741	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	2	2	LIP	N		1	1	
2011	16.5	24.2	-0.0558	-0.1640	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	3	4	LIP	N		2	2	
2012	9.5	15.5	0.0000	-0.1083	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		3	2	
2013	30.8	49	0.1083	0.0000	Y	N	9/23/2011	2	Y	OD	N	Scrap Steel	2	1	2	LIP	N		8	1	
2014	7.5	12.8	0.0000	0.0000	Y	N	9/23/2011	3	Y	OD	N	Scrap Metal	3	1	2	LIP	Y	Y	4	2	
2015	17.5	23.8	-0.3281	0.0000	Y	N	9/23/2011	2	Y	OD	N	Scrap Metal	2	1	3	LIP	N		3	3	
2016	123.6	409	0.3281	0.1640	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	1	8	LIP	N		8	6	
2017	72.8	262.5	0.0000	-0.5184	Y	N	9/23/2011	4	Y	OD	N	Scrap Metal	4	1	5	LIP	N		4	4	
2018	9.4	23	0.4921	0.9843	Y	N	9/23/2011	3	Y	OD	N	Scrap Metal	3	1	3	LIP	N		4	3	
2019	6	8.3	-0.6562	0.3281	Y	N	10/11/2011	2	Y	OD	N	Nails	2	1	0.1	LIP	N		3	0.1	
2020	15.4	18.3	-0.9843	0.3281	Y	Y											Y	Y			
2021	10.6	11.3	-0.6562	-0.6562	Y	N	10/11/2011	1	Y	OD	N	Nails	1	1	0.1	LIP	N		3	0.1	
2022	37.2	52.4	0.0000	0.0000	Y	N	10/11/2011	12	Y	OD	N	Trash Pit	12	1	1	LIP	N		36	36	
2023	47.5	72.8	0.0000	0.0000	Y	N	10/11/2011	12	Y	OD	N	Trash Pit	12	1	5	LIP	N		36	36	
2024	494	645	0.0000	0.3281	Y	N	10/11/2011	12	Y	OD	N	Trash Pit	12	3	5	LIP	N		8	0.2	
2025	539.4	676	0.0000	0.0000	Y	N	10/11/2011	30	Y	OD	N	Trash Pit	30	1	100	LIP	Y	Y	36	36	
2026	815	1462	0.0000	0.0000	Y	N	10/11/2011	12	Y	OD	N	Scrap Steel	12	1	15	LIP	N		16	2	
2027	67.1	77.2	0.0000	0.0000	Y	N	10/11/2011	9	Y	OD	N	Scrap Metal	9	4	6	LIP	N		7	4	
2028	7	14.3	0.0000	0.9022	Y	N	9/22/2011	12	Y	OD	N	Scrap Metal	12	1	5	LIP	N		8	8	
2029	11.9	44.5	0.0000	0.7382	Y	N	10/11/2011	4	Y	OD	N	Nails	4	6	2	LIP	N		4	0.1	
2030	5.3	5.1	0.0000	0.7382	Y	N	10/5/2011	2	Y	OD	N	Nails	2	1	0.1	LIP	Y	Y	2	0.1	
2031	23.3	39	-0.5741	0.0000	Y	N	10/11/2011	4	Y	OD	N	Scrap Steel	4	1	1	LIP	N		12	2	
2032	5.8	21	0.0558	0.6562	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		1	1	
2033	6.1	4	-0.1378	0.3018	Y	N	10/5/2011	6	Y	OD		Nails	6	1	0.1	LIP	Y	Y	3	0.1	
2034	5.5	12.5	0.0000	0.0000	Y	N	9/22/2011	4	Y	OD	N	Other	4	1	20	LIP	N		24	24	
2035	9	8.9	0.0000	0.0000	Y	N	9/22/2011	6	Y	OD	N	Wire	6	1	0.25	LIP	N		1	0.15	
2036	50.8	109.7	0.2723	0.3281	Y	N	9/22/2011	8	Y	OD	N	Scrap Metal	8	1	4	LIP	N		6	6	
2037	95.1	126	0.1903	0.1903	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	4	LIP	Y	Y	6	6	
2038	5.2	2.3	0.0000	0.0000	N	N	10/5/2011	12	N								Y	Y			
2039	35.5	71.4	-0.0820	-0.1640	Y	N	10/5/2011	6	Y	OD		Scrap Metal	6	1	1	LIP	Y	Y	12	12	
2040	18.4	64.5	0.0558	0.2461	Y	N	9/22/2011	12	Y	OD	N	Scrap Metal	12	1	2	LIP	N		4	4	
2041	15.8	29.1	-0.1640	0.0000	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	4	3	LIP	N		24	24	
2042	98.6	212	-0.0820	-0.4921	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
2043	6	11.5	0.0000	0.0000	Y	N	10/5/2011	3	Y	OD	N	Nails	3	2	0.1	LIP	N		2	0.1	
2044	68.2	111.2	0.3182	0.0000	Y	N	9/22/2011	6	Y	OD	N	Pipe	6	1	3	LIP	N		10	1	
2045	133	175	-0.3281	-0.4921	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	10	LIP	N		12	12	
2046	24.4	31.4	-0.1378	-0.0558	Y	N	9/22/2011	6	Y	OD	N	Pipe	6	1	4	LIP	N		6	1	
2047	19.3	41.8	0.3281	0.6562	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		6	6	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
2048	8.4	12.1	0.0000	-0.1083	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		3	3	
2049	28	109.3	-0.3018	0.0000	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		3	3	
2050	7.1	13	0.0000	0.0000	Y	N	10/5/2011	3	Y	OD	N	Nails	3	2	0.1	LIP	N		2	0.1	
2051	252.7	393	0.0000	0.4921	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	15	LIP	N		12	6	
2052	6.6	26	0.0000	0.0000	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		7	7	
2053	5	9	-0.6562	-0.5741	Y	N	10/5/2011	2	Y	OD	N	Nails	2	1	0.1	LIP	N		3	0.1	
2054	11.4	31.1	0.0000	-0.7119	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		2	2	
2055	45	48.4	0.1903	0.5741	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	4	1	LIP	N		36	36	
2056	20.4	46.2	0.0000	0.0000	Y	N	9/22/2011	2	Y	OD	N	Scrap Metal	2	1	5	LIP	N		1	1	
2057	7.4	9	-0.3281	-0.2854	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		3	3	
2058	2080.3	2580	-0.1640	-0.1640	Y	N	10/5/2011	1	Y	OD	N	Fence Post	1	1	25	LIP	N		60	3	
2059	16.2	28.3	0.0000	0.0000	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		3	3	
2060	23.6	55.2	-0.2461	0.8465	Y	N	10/11/2011	6	Y	OD	N	Scrap Metal	6	6	10	LIP	N		3	2	
2061	30.9	56.8	0.0000	0.0000	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		3	3	
2062	11	17.4	-0.2198	-0.2723	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		1	1	
2063	45.7	85	-0.6562	-0.3281	Y	N	9/22/2011	6	Y	OD	N	Pipe	6	1	2	LIP	N		8	1	
2064	17.1	306	-0.9843	0.9843	Y	Y											Y	Y			
2065	3247.3	5275	0.0000	0.0000	Y	Y											Y	Y			
2066	16.4	197	0.0000	-0.4364	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		6	6	
2067	11.3	46.1	0.3281	0.1903	Y	N	9/22/2011	12	Y	OD	N	Scrap Metal	12	1	4	LIP	N		6	4	
2068	5.1	6.8	0.0000	0.6562	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		2	2	
2069	16.9	17.4	0.4101	0.2461	Y	N	10/11/2011	6	Y	OD	N	Scrap Metal	6	2	3	LIP	Y	Y	2	2	
2070	11.8	90.9	-0.0558	-0.2723	Y	N	9/22/2011	12	Y	OD	N	Pipe	12	1	1	LIP	N		4	0.5	
2071	5.2	9.3	0.0000	0.0000	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		3	3	
2072	16.8	17	0.2461	-0.5348	Y	N	10/11/2011	6	Y	OD	N	Scrap Metal	6	3	5	LIP	N		2	2	
2073	5.3	4	0.0000	0.0000	N	N	10/5/2011	2	Y	OD	N	Nails	2	1	0.1	LIP	N		2	0.1	
2074	9	35.2	0.4364	0.4921	Y	N	10/5/2011	2	Y	OD	N	Scrap Steel	2	1	0.5	LIP	N		12	0.2	
2075	57	91.8	-0.9843	0.0000	Y	N	9/22/2011	3	Y	OD	N	Wire	3	2	1	LIP	N		8	0.25	
2076	26.9	88	0.0000	0.2198	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		6	6	
2077	24.4	44	0.1378	0.9843	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		3	3	
2078	12.8	50.9	0.0000	-0.5741	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	5	LIP	N		8	4	
2079	6.9	11.2	-0.2198	-0.1640	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		2	2	
2080	17.3	24	0.0000	0.0000	Y	N	10/11/2011	3	Y	OD	N	Scrap Metal	3	1	2	LIP	Y	Y	2	1	
2081	19.5	48.9	0.0820	0.3281	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	N		2	1	
2082	13.5	45	0.0558	-0.9843	Y	N	10/11/2011	4	Y	OD	N	Cable	4	1	3	LIP	N		12	1	
2083	22	34.5	-0.3281	-0.2723	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		6	6	
2084	5.8	9.2	0.0000	0.4528	Y	N	9/22/2011	12	Y	OD	N	Scrap Metal	12	20	2	LIP	N		1	1	
2084	5.8	9.2	0.0000	0.4528	Y	N	9/22/2011	12	Y	OD	N	Rust	2	20	1	LIP	N		1	1	
2085	5.3	17.2	0.0000	0.0000	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		3	3	
2086	12.4	29.8	-0.1378	0.5348	Y	N	10/5/2011	4	Y	OD	N	Nails	4	1	0.1	LIP	N		9	0.1	
2087	170.5	509	0.3281	0.6824	Y	N	9/22/2011	12	Y	OD	N	Pipe	12	1	10	LIP	N		48	1	
2088	34.7	37.2	-0.4921	0.1083	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	2	2	LIP	N		1	1	
2089	23.2	55.9	-0.4659	0.4921	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	N		3	2	
2090	14.4	32.9	0.0000	0.0000	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	Y	Y	4	4	
2091	6.5	1178	-0.9843	-0.9843	Y	N	9/22/2011	12	Y	OD	N	Scrap Metal	12	1	10	LIP	N		18	18	
2091	6.5	1178	-0.9843	-0.9843	Y	N	9/22/2011	12	Y	OD	N	Scrap Metal	4	1	25	LIP	N		10	4	
2092	19.1	38.1	0.5184	0.4101	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		6	6	
2093	6.5	15.3	0.0000	0.7644	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		1	1	
2094	70.3	75.4	0.6562	0.9843	Y	N	10/11/2011	2	Y	OD	N	Scrap Metal	2	1	0.2	LIP	Y	Y	8	3	
2095	11.9	16.9	0.2198	0.1903	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		3	3	
2096	28.2	53.1	0.0000	0.0000	Y	N	9/22/2011	6	Y	OD	N	Rebar	6	1	10	LIP	N		24	24	
2097	42	58.2	0.1903	0.2723	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	4	LIP	N		8	6	
2098	8.4	85.6	0.0000	0.7382	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		6	6	
2099	5.6	0	0.0000	0.0000	N	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
2100	7.3	10.2	0.3281	0.9843	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		2	2	
2101	18.1	33.2	0.0558	0.4921	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		6	6	
2102	55.4	84	-0.1640	0.0000	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
2103	6.9	22.1	0.0000	0.6562	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
2104	164.5	408.2	-0.3018	-0.4921	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	10	LIP	N		18	18	
2105	5.7	139.5	-0.3281	-0.9843	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		3	3	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
2106	5.3	11.9	0.0000	-0.4364	Y	N	10/5/2011	4	Y	OD	N	Nails	4	1	0.1	LIP	N		2	0.1	
2107	61.4	155	0.1903	0.6562	Y	N	9/22/2011	12	Y	OD	N	Scrap Metal	12	3	6	LIP	N		10	10	
2108	36.5	116	0.1083	0.6562	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	4	LIP	N		7	7	
2109	43.6	101	0.0000	0.6562	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	2	4	LIP	Y	Y	6	6	
2110	49.5	89	0.0000	0.4921	Y	N	10/11/2011	2	Y	OD	N	Cable	2	1	3	LIP	N		36	0.25	
2111	33.8	78.2	-0.2723	-0.1640	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	3	8	LIP	N		4	4	
2112	264.2	301.6	0.6299	0.3018	Y	N	10/11/2011	6	Y	OD	N	Scrap Metal	6	10	25	LIP	N		8	8	
2113	1045.1	10340	0.0000	0.4921	Y	Y											N				
2114	19	46.3	-0.1083	-0.1378	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		4	4	
2115	9.9	20.6	0.0820	-0.1903	Y	N	10/5/2011	4	Y	OD	N	Nails	4	1	0.1	LIP	Y	Y	9	0.1	
2116	13.9	20	0.0000	0.9843	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		3	3	
2117	37	64.1	-0.2198	-0.1640	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		6	6	
2118	35.4	241	0.1083	0.9843	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		8	6	
2119	18.6	26.8	0.0000	0.0164	Y	N	9/22/2011	12	Y	OD	N	Scrap Metal	12	1	2	LIP	N		4	4	
2120	34.2	46.3	-0.1903	-0.4364	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		6	6	
2121	10.8	1164	-0.1640	-0.9843	Y	N	10/5/2011	0	Y	OD	N	Fence Post	0	1	15	LIP	N		60	3	
2122	5.8	9.4	0.1640	0.4364	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		2	2	
2123	5.3	20.4	0.9843	0.9843	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		2	2	
2124	5.1	17.9	0.4921	-0.9580	Y	N	10/5/2011	6	Y	OD	N	Scrap Metal	6	1	5	LIP	N		3	3	
2125	5.3	9.2	0.0000	-0.9022	Y	N	10/5/2011	3	Y	OD	N	Scrap Metal	3	1	1	LIP	N		1	1	
2126	72.3	97.6	0.1903	0.0558	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	5	LIP	N		8	8	
2127	5.3	4	0.6562	-0.1378	Y	N	10/5/2011	2	Y	OD	N	Nails	2	1	0.1	LIP	N		2	0.1	
2128	27.5	35.6	0.0000	0.0000	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		4	4	
2129	100.7	34.8	0.6562	0.0000	Y	N	10/11/2011	2	Y	OD	N	Wire	2	1	1	LIP	N		18	0.1	
2130	48	18.7	0.2461	-0.4921	Y	N	10/11/2011	4	Y	OD	N	Nails	4	2	0.1	LIP	N		3	0.1	
2131	79.5	164	-0.9843	-0.5741	Y	N	10/11/2011	1	Y	OD	N	Scrap Steel	1	1	10	LIP	N		8	6	
2132	420.7	178	0.4101	0.0000	Y	N	10/11/2011	1	Y	OD	N	Scrap Steel	1	1	1	LIP	N		8	5	
2133	18	23	0.0820	-0.9843	Y	N	10/11/2011	6	Y	OD	N	Scrap Metal	6	1	4	LIP	N		4	4	
2134	24.4	191.7	0.9843	0.9843	Y	N	9/22/2011	12	Y	OD	N	Scrap Metal	12	1	5	LIP	Y	Y	10	8	
2135	18.2	37.4	0.0000	0.4921	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		5	4	
2136	52.1	94.2	0.0000	0.3281	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	10	10	LIP	N		6	6	
2137	17.6	26.2	0.0000	0.3281	Y	N	9/22/2011	12	Y	OD	N	Scrap Metal	12	1	2	LIP	N		4	4	
2138	6	22.7	0.0000	0.0000	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	0.5	LIP	N		1	1	
2139	596.4	1044	0.0000	0.0000	Y	N	9/22/2011	12	Y	OD	N	Scrap Metal	12	1	20	LIP	N		18	18	
2140	5.8	77.8	0.2723	0.9022	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		1	1	
2141	41.3	97	0.0000	0.6562	Y	N	9/22/2011	12	Y	OD	N	Scrap Metal	12	20	20	LIP	Y	Y	24	24	
2142	59.2	252.3	0.0000	0.9843	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	5	LIP	N		8	8	
2143	8	24.3	0.0000	0.0000	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		2	2	
2144	132.2	183	0.0000	0.9843	Y	N	9/22/2011	6	Y	OD	N	Rebar	6	1	50	LIP	N		24	24	
2145	40.4	101.3	0.1640	0.3281	Y	N	9/22/2011	12	Y	OD	N	Scrap Metal	12	1	4	LIP	N		8	8	
2146	5.2	3.2	0.0000	0.0000	N	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	Y	Y	2	2	
2147	9.9	21	0.0000	0.0000	Y	N	9/22/2011	20	Y	OD	N	Wire	20	1	0.5	LIP	N		7	0.25	
2148	5.1	20	0.0000	0.9843	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	0.5	LIP	N		1	1	
2149	28.5	53.8	-0.3018	-0.4921	Y	N	9/22/2011	12	Y	OD	N	Scrap Metal	12	1	2	LIP	N		4	4	
2150	18.1	49.4	-0.2198	-0.6562	Y	N	9/22/2011	12	Y	OD	N	Scrap Metal	12	1	2	LIP	N		5	5	
2151	378.7	2654	-0.6562	0.6562	Y	Y											Y	Y			
2152	21.5	188.4	0.9843	0.9843	Y	N	9/22/2011	12	Y	OD	N	Scrap Metal	12	1	5	LIP	N		6	6	
2153	39.3	61.6	0.0000	0.1640	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	4	LIP	N		5	5	
2154	61.2	110	-0.1640	0.1378	Y	N	10/7/2011	2	Y	OD	N	Scrap Steel	2	2	4	LIP	N		6	1	
2155	703.6	1412	0.6299	-0.5741	Y	N	10/7/2011	2	Y	OD	N	Cable	2	1	50	LIP	N		15	1	
2156	29.1	107.4	0.0558	0.6562	Y	N	9/22/2011	6	Y	OD	N	Nails	6	15	3	LIP	N		3	0.15	
2157	8.2	59.5	0.8202	0.4199	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	0.5	LIP	N		1	1	
2158	25	40	0.9843	0.0000	Y	N	9/22/2011	1	Y	OD	N	Scrap Metal	1	20	5	LIP	N		1	1	
2159	69.9	114	0.0000	0.1640	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	8	LIP	N		10	7	
2160	15.2	45.33	0.0000	0.3281	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		4	4	
2161	5.9	15.8	0.0000	0.0000	Y	N	9/22/2011	1	Y	OD	N	Scrap Metal	1	1	0.5	LIP	N		1	1	
2162	7.6	11.8	-0.2067	-0.2067	Y	N	10/11/2011	2	Y	OD	N	Nails	2	1	0.1	LIP	N		3	0.1	
2163	36.8	140.2	-0.4921	-0.5741	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
2164	9.6	13.2	0.0000	0.6562	Y	N	10/11/2011	2	Y	OD	N	Scrap Metal	2	1	0.5	LIP	N		1	1	
2165	88	106.7	0.0000	0.0000	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
2166	10.7	19	0.0000	-0.4921	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
2167	85.6	105.6	-0.0820	-0.1378	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
2168	5.2	16	-0.1640	0.9843	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
2169	57.5	87.4	0.0000	-0.3281	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
2170	6.1	10.1	0.0000	-0.3281	Y	N	10/11/2011	2	Y	OD	N	Nails	2	1	0.1	LIP	N		3	0.1	
2171	7.5	15.2	-0.2461	0.4364	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
2172	36.2	89	0.3018	-0.4364	Y	N	10/11/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
2173	29.6	41.1	-0.3018	-0.6562	Y	N	9/22/2011	12	Y	OD	N	Scrap Metal	12	1	3	LIP	N		8	6	
2174	8.3	14.8	0.0000	0.8202	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		2	2	
2175	17.7	253.4	0.0000	-0.9843	Y	N	9/22/2011	24	Y	OD	N	Scrap Metal	24	1	10	LIP	N		60	1	
2176	5.4	0.4	0.0000	0.0000	N	N	10/7/2011	3	Y	OD	N	Nails	3	1	0.2	LIP	N		1	0.1	
2177	7.9	9	0.9843	0.9843	Y	N	9/23/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		1	1	
2178	21.8	49.5	-0.0558	0.8202	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		6	6	
2179	36.7	50.7	-0.1083	-0.4921	Y	N	9/22/2011	48	Y	OD	N	Scrap Metal	6	10	5	LIP	Y	Y	24	24	
2179	36.7	50.7	-0.1083	-0.4921	Y	N	9/22/2011	48	Y	Other		Other	48	1	0	LIP	Y	Y	0	0	
2180	12.1	27.6	0.1640	0.0000	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		7	7	
2181	6.7	27	0.0558	0.8202	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		2	2	
2182	38.4	36.7	-0.3281	-0.3281	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		7	6	
2183	34.3	99.2	0.0558	0.8760	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	4	LIP	N		8	8	
2184	22.3	59.2	0.0000	-0.6562	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		8	8	
2185	24.7	46.5	0.0000	-0.5184	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	1	10	LIP	N		12	7	
2186	9.2	25.4	0.1378	0.4921	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	4	3	LIP	N		1	1	
2187	10.9	13.1	0.0558	0.7644	Y	N	9/21/2011	2	Y	OD	N	Scrap Metal	2	1	2	LIP	N		1	1	
2188	5.7	15.4	0.0000	0.3281	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		2	2	
2189	17.8	31.3	0.7119	0.5184	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		6	6	
2190	13.5	39.7	0.0000	0.9843	Y	N	9/21/2011	0	Y	OD	N	Scrap Steel	0	1	0.2	LIP	N		4	0.25	
2191	14.6	34.4	0.0591	0.5249	Y	N	9/21/2011	2	Y	OD	N	Scrap Metal	2	2	2	LIP	N		1	1	
2192	11.3	32.4	0.0000	-0.9285	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	1	6	LIP	N		8	4	
2193	8.3	25.4	-0.0558	-0.6562	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		4	4	
2194	86.2	275.7	-0.1640	-0.3281	Y	N	9/22/2011	12	Y	OD	N	Scrap Metal	12	1	6	LIP	N		10	10	
2195	7.9	12.9	0.1903	0.3018	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		1	1	
2196	12.7	29	0.0558	0.2461	Y	N	9/21/2011	3	Y	OD	N	Scrap Metal	3	1	0.5	LIP	N		1	1	
2197	97.2	152.1	0.1083	0.2723	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	1	5	LIP	N		12	3	
2198	17	26.5	0.1378	0.1903	Y	N	9/21/2011	6	Y	OD	N	Other	6	1	1000	LIP	N		36	36	
2199	25	63.2	0.1903	0.7808	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		6	3	
2200	8.7	94.2	-0.0558	-0.8202	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		6	6	
2201	48.5	63.4	0.3281	0.0000	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	4	4	LIP	N		1	1	
2202	64.8	108.8	0.0000	0.0000	Y	N	9/21/2011	3	Y	OD	N	Scrap Metal	3	1	3	LIP	N		5	3	
2203	14.9	17.4	0.0000	-0.3281	Y	N	9/21/2011	6	Y	OD	N	Other	6	1	1000	LIP	N		36	36	
2204	311.8	10032	0.0000	-0.8202	Y	Y											Y	Y			
2205	17.9	26.8	-0.1640	-0.2461	Y	N	9/21/2011	5	Y	OD	N	Scrap Metal	5	1	3	LIP	N		4	4	
2206	10.9	23	0.0000	0.3281	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	N		5	2	
2207	30	51.8	-0.1903	0.2461	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	1	5	LIP	Y	Y	8	4	
2208	48.1	56.5	0.1083	0.4528	Y	N	9/21/2011	8	Y	OD	N	Scrap Metal	8	4	4	LIP	N		2	2	
2209	7.9	13.2	0.0000	0.0000	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	N		2	2	
2210	7.5	12.2	-0.2198	-0.3281	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	Y	Y	3	3	
2211	11.7	15.8	0.1083	0.1903	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	N		2	2	
2212	5.6	16.6	0.0558	0.1083	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		7	5	
2213	21	46	-0.4921	-0.1083	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		8	8	
2214	18.4	37.4	0.0000	0.4364	Y	N	9/22/2011	12	Y	OD	N	Scrap Metal	12	1	5	LIP	N		6	6	
2215	10.4	24.6	0.2198	0.6562	Y	N	9/22/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		4	4	
2216	20	32.2	0.0558	-0.4265	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		3	3	
2217	5.6	9.2	0.3018	0.8465	Y	N	10/7/2011	4	Y	OD	N	Nails	4	1	0.1	LIP	Y	Y	1	0.2	
2218	27	133	0.0000	-0.4364	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	5	5	LIP	N		1	1	
2219	6	5.4	-0.6562	-0.3281	Y	N	10/17/2011	2	Y	OD	N	Nails	2	1	0.2	LIP	N		2	0.1	
2220	10.6	68.9	-0.6562	0.3281	Y	N	10/17/2011	8	Y	OD	N	Scrap Metal	8	1	15	LIP	Y	Y	9	6	
2221	6.2	11.4	0.1083	0.0000	Y	N	9/21/2011	2	Y	OD	N	Scrap Metal	2	1	1	LIP	Y	Y	1	1	
2222	36.1	75	0.9843	0.3281	Y	N	10/17/2011	4	Y	OD	N	Scrap Metal	4	1	17	LIP	N		9	8	
2223	32.5	52.4	0.6562	0.4921	Y	N	9/21/2011	8	Y	OD	N	Scrap Metal	8	5	5	LIP	Y	Y	1	1	
2224	10	11.1	0.7644	-0.3281	Y	N	10/17/2011	3	Y	OD	N	Scrap Metal	3	1	1	LIP	N		3	2	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
2225	24	39.2	0.0000	0.0000	Y	N	10/7/2011	3	Y	OD	N	Scrap Steel	3	1	2	LIP	N		6	1	
2226	48.5	68.7	0.1083	0.5741	Y	N	10/17/2011	2	Y	OD	N	Scrap Metal	2	1	7	LIP	N		9	7	
2227	23.1	44.1	0.2723	0.0000	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	5	5	LIP	N		1	1	
2228	5.3	11.7	0.3281	-0.9843	Y	N	10/17/2011	3	Y	OD	N	Scrap Metal	3	1	1	LIP	N		3	2	
2229	13.7	20.9	0.1640	0.1083	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	3	4	LIP	Y	Y	2	2	
2230	70.2	138	0.0000	0.1640	Y	N	10/17/2011	6	Y	OD	N	Scrap Metal	6	3	5	LIP	N		7	3	
2231	33.5	74.2	0.3018	0.3281	Y	N	9/21/2011	3	Y	OD	N	Scrap Metal	3	4	4	LIP	N		2	2	
2232	15.3	14.6	-0.2461	0.0000	Y	N	10/17/2011	6	Y	OD	N	Scrap Metal	6	2	2	LIP	N		4	2	
2233	38.1	60.1	0.9843	0.1640	Y	N	10/17/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	Y	Y	3	2	
2234	50.4	62.9	0.0000	0.0000	Y	N	10/17/2011	7	Y	OD	N	Scrap Metal	7	1	4	LIP	N		5	3	
2235	6.7	9.7	0.4364	-0.3281	Y	N	10/17/2011	3	Y	OD	N	Scrap Metal	3	1	1	LIP	N		3	1	
2236	17.2	37.5	0.7940	-0.3839	Y	N	10/17/2011	7	Y	OD	N	Scrap Metal	7	1	2	LIP	N		4	3	
2237	43.5	46.1	-0.2461	-0.3281	Y	N	10/17/2011	2	Y	OD	N	Scrap Metal	2	1	1	LIP	N		5	2	
2238	63.3	79	0.0000	0.0820	Y	N	10/17/2011	5	Y	OD	N	Scrap Metal	5	1	6	LIP	N		8	4	
2239	7.8	7.9	-0.1640	-0.1640	Y	N	10/17/2011	5	Y	OD	N	Scrap Metal	5	2	1	LIP	N		2	2	
2240	9.1	21.5	-0.3281	-0.1640	Y	N	10/14/2011	3	Y	OD	N	Scrap Metal	3	1	5	LIP	N		8	5	
2241	5.4	8	0.0000	0.0000	Y	N	10/14/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		1	1	
2242	36.6	77	-0.0820	-0.2461	Y	N	10/14/2011	6	Y	OD	N	Scrap Metal	6	3	10	LIP	N		6	4	
2243	46.2	209	0.0000	0.8202	Y	N	9/21/2011	8	Y	OD	N	Scrap Metal	8	5	15	LIP	N		2	2	
2244	12	15.8	-0.0820	-0.2461	Y	N	10/14/2011	6	Y	OD	N	Scrap Metal	6	2	5	LIP	N		3	2	
2245	17.7	28	0.0000	0.0000	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	N		3	3	
2246	7.3	9.8	-0.1640	0.1640	Y	N	10/14/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		1	1	
2247	22.5	88.2	0.0000	0.9843	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	3	10	LIP	Y	Y	5	4	
2248	24.6	87.3	0.1640	0.3018	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	3	3	LIP	N		1	1	
2249	14.5	16.2	-0.6562	0.4921	Y	N	10/14/2011	1	Y	OD	N	Wire	1	1	1	LIP	N		18	0.1	
2250	47.4	102.5	0.0000	-0.6562	Y	N	9/21/2011	6	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	1	
2250	47.4	102.5	0.0000	-0.6562	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	5	5	LIP	N		1	1	
2251	6.5	15.5	0.6562	0.0820	Y	N	10/14/2011	3	Y	OD	N	Scrap Metal	3	1	2	LIP	N		1	1	
2252	47.8	88.6	-0.9843	0.0820	Y	N	10/14/2011	3	Y	OD	N	Bolt	3	1	2	LIP	N		10	0.5	
2253	70.9	120.8	0.0000	0.6562	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	2	2	4	LIP	Y	Y	8	1	
2253	70.9	120.8	0.0000	0.6562	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	4	4	LIP	Y	Y	2	2	
2254	95.1	137.4	0.0000	0.0000	Y	N	9/21/2011	8	Y	OD	N	Scrap Metal	8	10	15	LIP	N		2	2	
2255	22	51.2	0.0000	0.0000	Y	N	9/21/2011	3	Y	OD	N	Scrap Steel	3	1	2	LIP	N		8	1	
2256	28.5	26	-0.6562	0.0000	Y	N	10/14/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	N		1	1	
2257	5.3	5.3	0.4364	-0.0820	Y	N	10/14/2011	1	Y	OD	N	Nails	1	1	0.1	LIP	N		3	0.1	
2258	9.1	40.3	-0.3018	-0.3281	Y	N	10/14/2011	4	Y	OD	N	Scrap Steel	4	1	6	LIP	N		12	0.5	
2259	13.7	19.1	0.1640	0.0000	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	4	3	LIP	N		1	1	
2260	8.3	58.2	0.0000	-0.6562	Y	N	10/14/2011	4	Y	OD	N	Scrap Metal	4	1	5	LIP	Y	Y	8	4	
2261	8.5	8.2	0.3281	0.4101	Y	N	10/7/2011	3	Y	OD	N	Nails	3	1	0.2	LIP	N		3	0.1	
2262	8.8	23	-0.4659	0.3281	Y	N	10/14/2011	1	Y	OD	N	Wire	1	1	1	LIP	N		8	0.1	
2263	34.1	78.1	0.9022	0.0000	Y	N	10/7/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	N		3	1	
2264	27.6	52.8	-0.2461	0.9843	Y	N	10/7/2011	5	Y	OD	N	Bolt	5	1	4	LIP	Y	Y	10	1	
2265	31.7	34.5	0.3281	-0.1083	Y	N	10/14/2011	4	Y	OD	N	Scrap Steel	4	1	3	LIP	N		3	3	
2266	12.4	9.4	-0.3281	0.8202	Y	N	10/7/2011	3	Y	OD	N	Wire	3	1	0.2	LIP	N		5	0.1	
2267	6.6	12	-0.0820	-0.5184	Y	N	10/7/2011	4	Y	OD	N	Nails	4	1	0.1	LIP	N		3	0.1	
2268	5.4	7.1	0.2461	-0.3018	Y	N	10/14/2011	2	Y	OD	N	Wire	2	1	0.1	LIP	N		4	0.1	
2269	60.2	0.4	0.0000	0.0000	N	N	10/7/2011	4	Y	OD	N	Scrap Metal	4	1	0.4	LIP	N		0.4	0.4	
2270	11.1	30.4	0.0000	0.0000	Y	N	10/14/2011	2	Y	OD	N	Nails	2	4	0.2	LIP	Y	Y	6	0.1	
2271	8.8	11.4	0.0820	0.3281	Y	N	10/14/2011	2	Y	OD	N	Nails	2	2	0.1	LIP	N		6	0.1	
2272	44.8	61.3	0.0000	0.0000	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	5	5	LIP	N		1	1	
2273	60.3	83.5	0.2723	-0.6562	Y	N	9/21/2011	2	Y	OD	N	Wire	2	1	0.2	LIP	N		10	0.1	
2274	24.3	35.1	0.0000	0.3281	Y	N	9/21/2011	8	Y	OD	N	Scrap Metal	8	1	7	LIP	N		6	6	
2275	17.6	31.4	0.0558	0.1640	Y	N	9/21/2011	4	Y	OD	N	Scrap Steel	4	1	0.5	LIP	N		8	0.25	
2276	65.4	153.5	0.0000	0.3281	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	1	5	LIP	N		4	4	
2277	42	44	0.0000	0.0000	Y	N	10/14/2011	3	Y	OD	N	Scrap Metal	3	1	5	LIP	N		6	4	
2278	53	51.9	-0.3281	-0.9843	Y	N	10/14/2011	4	Y	OD	N	Scrap Metal	4	3	5	LIP	N		3	2	
2279	71.9	248	0.0000	0.2461	Y	N	10/14/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		3	2	
2280	5.6	49.8	0.4101	-0.6562	Y	N	10/14/2011	4	Y	OD	N	Scrap Metal	4	5	8	LIP	N		3	3	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12,168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
2281	28.9	27.9	0.4921	-0.2461	Y	N	10/14/2011	48	N								Y	Y			dug to 48". nothing encountered. item deeper than 48"'
2282	33.4	43	0.5741	-0.4921	Y	N	10/14/2011	3	Y	OD	N	Scrap Metal	3	1	4	LIP	N		8	3	
2283	23.3	43.4	-0.3281	-0.1083	Y	N	10/14/2011	3	Y	OD	N	Scrap Metal	3	2	5	LIP	N		3	2	
2284	23.5	108.7	-0.7382	0.4101	Y	N	10/14/2011	2	Y	OD	N	Scrap Metal	2	1	5	LIP	N		3	3	
2285	39.1	58	0.3281	0.0000	Y	N	10/14/2011	4	Y	OD	N	Scrap Metal	4	1	10	LIP	N		7	6	
2286	39.8	66.5	0.0000	0.0000	Y	N	10/14/2011	6	Y	OD	N	Scrap Metal	6	3	8	LIP	N		4	3	
2287	33.4	98.3	-0.1378	-0.3018	Y	N	10/14/2011	2	Y	OD	N	Scrap Metal	2	1	10	LIP	N		8	6	
2288	15.9	253.9	0.9022	-0.9843	Y	N	10/14/2011	8	Y	OD	N	Pipe	8	1	1	LIP	N		36	0.75	
2289	313.2	11441	0.3281	0.6562	Y	Y											N				
2290	18.2	34.2	0.0000	0.4921	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	3	2	LIP	N		1	1	
2291	44.6	1074	0.5184	0.9843	Y	N	9/21/2011	4	Y	OD	N	Scrap Steel	4	1	20	LIP	N		12	8	
2292	47.5	57.8	0.1640	-0.0558	Y	N	10/14/2011	4	Y	OD	N	Scrap Metal	4	2	5	LIP	N		4	3	
2293	15	25.8	0.0000	0.0000	Y	N	10/14/2011	3	Y	OD	N	Nails	3	3	0.2	LIP	Y	Y	4	0.1	
2294	41	82	0.0000	-0.4921	Y	N	10/7/2011	2	Y	OD	N	Scrap Metal	2	1	4	LIP	N		4	1	
2295	14.3	16.1	0.0000	0.0000	Y	N	10/14/2011	6	Y	OD	N	Scrap Steel	6	1	0.5	LIP	N		8	1	
2296	34.5	53.5	0.0000	-0.1640	Y	N	10/14/2011	6	Y	OD	N	Scrap Steel	6	1	3	LIP	N		8	6	
2297	57	86.5	0.0000	0.0000	Y	N	10/14/2011	4	Y	OD	N	Scrap Metal	4	3	6	LIP	N		2	2	
2298	9.6	22.5	0.0000	0.4528	Y	N	9/21/2011	0	Y	OD	N	Wire	0	1	0.2	LIP	N		2	0.1	
2299	25.5	111.1	0.0000	-0.3281	Y	N	10/14/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
2300	12.9	866	-0.1640	-0.9843	Y	N	10/7/2011	2	Y	OD	N	Fence Post	2	1	10	LIP	N		48	2	
2301	7.4	14.9	0.1903	0.5184	Y	N	9/21/2011	0	Y	OD	N	Scrap Metal	0	2	0	LIP	Y	Y	0	0	
2302	14.5	76	-0.9843	0.0000	Y	N	10/14/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
2303	27.8	66.9	0.1640	0.2723	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	1	4	LIP	N		3	3	
2304	38.6	43	0.0000	0.1640	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	5	5	LIP	N		1	1	
2305	12.8	23.1	0.1640	0.0000	Y	N	9/21/2011	3	Y	OD	N	Scrap Metal	3	1	0.5	LIP	N		1	1	
2306	122.2	577	0.1083	-0.3281	Y	N	10/14/2011	1	Y	OD	N	Pipe	1	1	5	LIP	N		72	0.75	
2307	6	11	0.0000	0.2198	Y	N	9/21/2011	0	Y	OD	N	Scrap Metal	0	1	0.2	LIP	N		0.2	0.2	
2308	12.5	25.4	-0.1083	0.3281	Y	N	10/7/2011	7	Y	OD	N	Scrap Steel	7	1	2	LIP	N		10	1	
2309	50.5	59.6	0.0000	0.0000	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	5	5	LIP	N		1	1	
2310	18.9	21.8	0.0000	0.0000	Y	N	10/7/2011	8	Y	OD	N	Scrap Steel	8	1	2	LIP	N		10	1	
2311	35.1	85.6	-0.1378	-0.3281	Y	N	10/7/2011	2	Y	OD	N	Scrap Steel	2	1	2	LIP	N		6	1	
2312	8.6	7	0.0000	0.0000	Y	N	10/14/2011	2	Y	OD	N	Nails	2	2	0.1	LIP	N		3	0.1	
2313	27.2	41.2	0.0000	-0.1640	Y	N	10/14/2011	4	Y	OD	N	Bolt	4	1	2	LIP	N		6	0.3	
2314	5.5	0.5	0.0000	0.0000	Y	N	10/14/2011	0	N								N				
2315	9.3	3630	0.0000	0.9843	Y	Y											N				
2316	5.1	1.2	0.0000	0.0000	N	N	10/14/2011	0	N								N				
2317	157.1	214	0.0000	0.0000	Y	N	10/7/2011	7	Y	OD	N	Scrap Metal	7	3	10	LIP	Y	Y	6	3	
2318	69.7	84	0.0820	-0.1640	Y	N	10/7/2011	6	Y	OD	N	Scrap Metal	6	2	5	LIP	N		4	2	
2319	81.9	142.6	0.0000	-0.1903	Y	N	10/7/2011	6	Y	OD	N	Scrap Metal	6	3	6	LIP	N		5	5	
2320	190.4	270.7	0.0000	0.0000	Y	N	10/7/2011	3	Y	OD	N	Wire	3	4	5	LIP	N		12	0.1	
2321	16.2	30.5	0.0820	0.4921	Y	N	10/14/2011	8	Y	OD	N	Scrap Metal	4	1	4	LIP	Y	Y	3	3	
2321	16.2	30.5	0.0820	0.4921	Y	N	10/14/2011	8	Y	OD		Scrap Steel	8	1	5	LIP	Y	Y	8	8	
2322	62.3	94	0.2461	0.0000	Y	N	10/7/2011	7	Y	OD	N	Scrap Metal	7	1	2	LIP	N		4	1	
2323	30.7	96.2	0.1378	0.5741	Y	N	10/14/2011	2	Y	OD	N	Scrap Steel	2	1	3	LIP	N		6	6	
2324	16.2	24.6	0.1083	0.2067	Y	N	10/14/2011	3	Y	OD	N	Scrap Metal	3	2	3	LIP	N		3	2	
2325	7.1	28	0.0558	-0.5741	Y	N	10/14/2011	4	Y	OD	N	Scrap Metal	4	2	5	LIP	N		2	2	
2326	12.7	19.7	0.3018	0.0000	Y	N	10/7/2011	1	Y	OD	N	Scrap Metal	1	1	1	LIP	N		1	1	
2327	43.4	103	0.0000	0.0000	Y	N	10/7/2011	9	Y	OD	N	Scrap Metal	9	1	8	LIP	N		8	5	
2328	11.3	29	0.0000	0.0000	Y	N	10/7/2011	1	Y	OD	N	Scrap Metal	1	1	0.5	LIP	N		1	1	
2329	50.8	102	0.0000	0.3281	Y	N	9/21/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	1	
2330	164.9	991	0.0000	0.8202	Y	N	9/21/2011	6	Y	OD	N	Scrap Steel	6	1	50	LIP	Y	Y	24	8	
2331	5.3	18.2	0.0000	0.4921	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	3	4	LIP	N		1	1	
2332	20.9	71.5	0.0000	0.1640	Y	N	9/21/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	1	
2333	49.6	61.5	0.0000	0.0000	Y	N	9/21/2011	0	Y	OD	N	Scrap Metal	0	1	1	LIP	N		1	1	
2334	14.7	20.6	0.0558	0.3281	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	2	1	LIP	Y	Y	1	1	
2335	18.7	38.6	0.0558	0.0000	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	5	5	LIP	N		1	1	
2336	14.9	34.9	0.1083	0.1640	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	4	4	LIP	N		1	1	
2337	9.4	13	0.0000	0.0000	Y	N	9/21/2011	2	Y	OD	N	Scrap Metal	2	2	2	LIP	N		1	1	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
2338	6.3	6.5	0.1640	-0.3281	Y	N	10/14/2011	2	Y	OD	N	Wire	2	1	0.1	LIP	N		6	0.1	
2339	16.7	183	0.1378	0.6562	Y	N	9/21/2011	0	Y	OD	N	Scrap Metal	0	1	1	LIP	N		4	3	
2340	33.6	70	0.0000	0.4364	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		3	3	
2341	28.2	59.6	0.1640	0.2198	Y	N	9/21/2011	8	Y	OD	N	Scrap Metal	8	5	5	LIP	N		1	1	
2342	13.7	38.9	-0.3281	0.9843	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	5	5	LIP	N		1	1	
2343	25.6	59.2	0.2198	-0.3281	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	5	3	LIP	N		1	1	
2344	175	316	0.0000	0.0000	Y	N	9/21/2011	12	Y	OD	N	Scrap Steel	12	2	22	LIP	N		12	8	
2345	23.3	34.4	0.1083	0.1640	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	3	2	LIP	N		1	1	
2346	27.5	106	0.2723	0.4199	Y	N	9/21/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	Y	Y	8	1	
2347	11.8	29.3	0.0000	0.6562	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	4	2	LIP	N		1	1	
2348	56.2	92.6	-0.3281	-0.3281	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	15	10	LIP	N		1	1	
2349	78.5	152	0.0000	0.0000	Y	N	9/21/2011	4	Y	OD	N	Bolt	4	1	2	LIP	Y	Y	6	1	
2350	14.4	21.1	0.1378	0.3281	Y	N	10/7/2011	2	Y	OD	N	Scrap Steel	2	1	2	LIP	N		4	11	
2351	119.6	171.4	-0.9843	0.0000	Y	N	10/14/2011	36	Y	OD	N	Pipe	36	1	1	LIP	N		36	3	
2352	24.3	60.2	0.2461	0.3018	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		3	3	
2353	26	30	0.0000	0.0000	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	5	5	LIP	N		1	1	
2354	11.3	34.99	0.2198	0.7612	Y	N	9/21/2011	2	Y	OD	N	Scrap Metal	2	1	1	LIP	N		1	1	
2355	54.2	81	0.1903	0.4199	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	5	4	LIP	N		1	1	
2356	11	18	0.0000	0.4199	Y	N	9/21/2011	0	Y	OD	N	Scrap Metal	0	1	0.2	LIP	N		2	1	
2357	21.8	47.2	0.0000	0.6562	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	3	2	LIP	N		1	1	
2358	6.7	1	0.0000	0.0000	N	N	10/14/2011	0	N								N				
2359	29.1	64.4	0.1640	-0.6562	Y	N	10/14/2011	6	Y	OD	N	Scrap Steel	6	1	1	LIP	N		4	4	
2360	8.5	18.3	0.0000	0.0000	Y	N	10/7/2011	3	Y	OD	N	Nails	3	1	0.5	LIP	N		2	0.1	
2361	29.5	60.8	-0.1640	0.0000	Y	N	10/14/2011	3	Y	OD	N	Other	3	1	1	LIP	Y	Y	36	36	
2362	7.1	15	0.2461	0.0000	Y	N	9/21/2011	0	Y	OD	N	Scrap Metal	0	1	0.5	LIP	N		1	1	
2363	9.4	24.2	0.3281	-0.9843	Y	N	9/21/2011	0	Y	OD	N	Scrap Steel	0	1	0.5	LIP	N		8	0.25	
2364	65.2	135.2	0.3018	0.9843	Y	N	10/14/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
2365	31.3	83.7	0.0000	0.3281	Y	N	9/21/2011	8	Y	OD	N	Scrap Metal	8	4	8	LIP	N		6	5	
2366	208.6	322	-0.4199	0.2723	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	10	15	LIP	N		4	4	
2367	7	11.2	0.2723	0.2198	Y	N	9/21/2011	0	Y	OD	N	Scrap Metal	0	1	0.5	LIP	N		1	1	
2368	121.4	450.2	0.0000	0.0000	Y	N	10/14/2011	6	Y	OD	N	Scrap Metal	6	3	25	LIP	N		12	8	
2369	77.7	114.2	0.0000	0.0000	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	2	3	LIP	N		2	1	
2370	33.9	44.2	0.1083	0.0000	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	2	8	LIP	N		4	4	
2371	43.2	69.7	-0.0558	0.2461	Y	N	9/21/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	1	
2372	49.3	73.4	0.4101	-0.2461	Y	N	10/14/2011	12	Y	OD	N	Scrap Steel	12	1	8	LIP	N		5	5	
2373	115.2	140.4	0.1378	0.1640	Y	N	10/14/2011	36	Y	OD	N	Pipe	36	1	1	LIP	N		36	3	
2374	95.9	137.9	0.0000	0.0558	Y	N	9/21/2011	8	Y	OD	N	Scrap Metal	8	15	15	LIP	N		2	2	
2375	29	38.5	0.0558	0.2723	Y	N	9/21/2011	0	Y	OD	N	Scrap Metal	0	1	2	LIP	N		3	3	
2376	72.2	108.5	0.0558	0.6562	Y	N	9/21/2011	1	Y	OD	N	Scrap Steel	1	1	2	LIP	N		8	1	
2377	14.4	19.6	0.0000	0.0000	Y	N	9/21/2011	1	Y	OD	N	Scrap Metal	1	2	1	LIP	N		1	1	
2378	102.5	170.7	0.1903	-0.2067	Y	N	10/14/2011	4	Y	OD	N	Scrap Metal	4	1	5	LIP	N		5	5	
2379	11.4	28.1	-0.2690	-0.1378	Y	N	9/21/2011	8	Y	OD	N	Scrap Metal	8	3	3	LIP	N		1	1	
2380	10.5	34	0.2461	-0.3281	Y	N	10/6/2011	1	Y	OD	N	Scrap Metal	1	1	1	LIP	N		1	1	
2381	92.5	179.4	0.0000	0.1640	Y	N	9/21/2011	2	Y	OD	N	Bolt	2	1	3	LIP	N		6	1	
2382	45.2	55.6	-0.6562	0.0000	Y	N	10/6/2011	5	Y	OD	N	Scrap Metal	5	1	6	LIP	N		5	4	
2383	86.9	299.2	0.0000	-0.9843	Y	N	9/21/2011	8	Y	OD	N	Scrap Metal	8	2	20	LIP	N		10	8	
2384	87.6	110	0.0000	0.0000	Y	N	10/6/2011	9	Y	OD	N	Scrap Metal	9	1	5	LIP	N		6	6	
2385	1654.1	2412	0.1083	0.1640	Y	N	9/21/2011	4	Y	OD	N	Scrap Steel	4	1	50	LIP	N		30	4	
2386	6.5	14	0.0000	0.0000	Y	N	9/21/2011	6	Y	OD	N	Other	6	1	1000	LIP	N		36	36	
2387	32.2	76.9	0.0000	-0.2461	Y	N	10/6/2011	7	Y	OD	N	Scrap Metal	7	1	6	LIP	N		7	3	
2388	255.1	352	0.0000	-0.4528	Y	N	9/21/2011	1	Y	OD	N	Scrap Metal	1	1	5	LIP	N		7	5	
2389	33	72.8	0.0000	-0.1640	Y	N	10/14/2011	4	Y	OD	N	Scrap Metal	4	1	5	LIP	N		6	5	
2390	19.6	43.2	0.0000	0.0000	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	3	4	LIP	N		1	1	
2391	34.8	71.4	0.0000	-0.3281	Y	N	10/6/2011	5	Y	OD	N	Scrap Metal	5	1	4	LIP	N		3	1	
2392	9.5	14.3	-0.1903	-0.2461	Y	N	10/7/2011	6	Y	OD	N	Nails	6	1	1	LIP	Y	Y	3	0.1	
2393	331.9	1455	0.0000	0.3281	Y	N	9/21/2011	2	Y	OD	N	Scrap Metal	2	1	10	LIP	N		8	6	
2394	16.1	98.5	0.4921	0.0000	Y	N	9/21/2011	3	Y	OD	N	Scrap Metal	3	1	2	LIP	N		8	0.5	
2395	39.7	74.2	0.1903	-0.1903	Y	N	10/6/2011	3	Y	OD	N	Scrap Metal	3	2	5	LIP	N		6	3	
2396	208.2	248	0.0000	0.5741	Y	N	9/21/2011	6	Y	OD	N	Bolt	6	1	4	LIP	N		6	1	
2397	18.4	56.9	0.0000	0.3281	Y	N	9/21/2011	0	Y	OD	N	Scrap Steel	0	1	1	LIP	N		8	0.25	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
2398	21.8	84.2	0.9843	0.4199	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		6	5	
2399	50.1	697.8	0.0000	0.9843	Y	N	10/14/2011	1	Y	OD	N	Anchor, ground	1	1	10	LIP	N		72	0.5	
2400	8.8	10.5	-0.1640	0.2461	Y	N	10/6/2011	3	Y	OD	N	Scrap Metal	3	1	0.5	LIP	N		1	1	
2401	9.5	19.7	0.0000	0.1640	Y	N	10/6/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	Y	Y	2	1	
2402	6.1	26.4	0.4921	0.5741	Y	N	10/6/2011	9	Y	OD	N	Scrap Metal	9	1	1	LIP	N		2	1	
2403	12.8	116	0.4921	-0.9843	Y	N	10/6/2011	9	Y	OD	N	Scrap Metal	9	5	14	LIP	N		8	5	
2404	9.1	22.4	0.5741	-0.4987	Y	N	10/6/2011	4	Y	OD	N	Scrap Metal	4	2	2	LIP	N		1	1	
2405	10.2	11.9	0.0000	0.0000	Y	N	10/6/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		1	1	
2406	12.6	23.1	0.0000	0.0000	Y	N	10/14/2011	3	Y	OD	N	Scrap Metal	3	1	1	LIP	N		1	1	
2407	14.6	17.5	0.9843	0.0000	Y	N	10/14/2011	2	Y	OD	N	Bolt	2	1	2	LIP	N		6	0.25	
2408	10.2	17.1	-0.2461	0.4101	Y	N	10/14/2011	3	Y	OD	N	Scrap Metal	3	1	1	LIP	N		1	1	
2409	24	67	0.0000	0.0000	Y	N	10/14/2011	3	Y	OD	N	Fence Post	3	1	3	LIP	N		8	4	
2410	55	697.8	-0.3281	0.6562	Y	N	10/14/2011	1	Y	OD	N	Anchor, ground	1	1	10	LIP	N		72	0.5	
2411	8.4	221.2	0.5741	0.0000	Y	N	10/14/2011	4	Y	OD	N	Scrap Metal	4	1	5	LIP	N		8	4	
2412	52.8	171.4	0.0000	0.3281	Y	N	10/14/2011	6	Y	OD	N	Scrap Metal	6	3	7	LIP	N		3	2	
2413	58.8	92.1	-0.3281	0.6562	Y	N	10/14/2011	2	Y	OD	N	Scrap Steel	2	1	2	LIP	N		8	1	
2414	47.5	72.2	-0.1083	0.0820	Y	N	10/14/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	1	
2415	5.1	15.6	-0.2461	0.1640	Y	N	10/14/2011	2	Y	OD	N	Bolt	2	1	1	LIP	N		6	0.25	
2416	189.5	10843	0.0000	0.0000	Y	Y	9/21/2011	1	Y	OD	N	Cable	1	1	500	LIP	N		36	1	
2417	318	5038	0.0000	0.0000	Y	Y	9/21/2011	1	Y	OD	N	Cable	1	1	500	LIP	N		36	1	
2418	320.8	4500	0.0000	0.0000	Y	Y	9/21/2011	1	Y	OD	N	Cable	1	1	500	LIP	N		36	1	
2419	22	36	-0.6562	0.4921	Y	N	10/14/2011	2	Y	OD	N	Bolt	2	1	2	LIP	N		6	0.2	
2420	1092.3	6790	0.0000	0.0000	Y	Y	9/21/2011	1	Y	OD	N	Cable	1	1	500	LIP	N		36	1	
2421	23	1209	-0.9843	0.6562	Y	N	10/14/2011	1	Y	OD	N	Scrap Steel	1	1	5	LIP	N		4	18	
2422	9.4	20.9	-0.2461	0.4364	Y	N	10/14/2011	2	Y	OD	N	Scrap Metal	2	2	2	LIP	Y	Y	2	2	
2423	13.4	32.3	0.2198	-0.6562	Y	N	9/21/2011	2	Y	OD	N	Scrap Metal	2	2	11	LIP	N		1	1	
2424	17	38.9	0.7808	0.1903	Y	N	9/21/2011	0	Y	OD	N	Scrap Metal	0	1	0.5	LIP	N		1	1	
2425	29.2	46.2	0.1378	0.1903	Y	N	9/21/2011	0	Y	OD	N	Scrap Metal	0	1	2	LIP	N		8	1	
2426	22.3	41.3	0.0000	0.0000	Y	N	9/21/2011	2	Y	OD	N	Scrap Steel	2	1	0.5	LIP	Y	Y	8	0.25	
2427	23.4	141	0.2461	0.6562	Y	N	9/21/2011	2	Y	OD	N	Scrap Steel	2	1	2	LIP	N		8	1	
2428	7.9	22.9	0.0000	0.3281	Y	N	9/21/2011	1	Y	OD	N	Scrap Metal	1	1	1	LIP	N		3	1	
2429	8.3	11.6	0.3281	0.0000	Y	N	9/21/2011	2	Y	OD	N	Scrap Metal	2	2	1	LIP	N		1	1	
2430	5.6	14.8	0.2461	-0.4659	Y	N	10/7/2011	8	Y	OD	N	Scrap Metal	8	1	3	LIP	N		6	3	
2431	12.3	27.4	0.1083	0.1640	Y	N	9/21/2011	2	Y	OD	N	Scrap Metal	2	2	1	LIP	N		1	1	
2432	74.5	126.5	0.0000	0.0000	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	2	6	LIP	N		4	4	
2433	5.4	6.2	0.5741	-0.3839	Y	N	10/20/2011	2	Y	OD	N	Nails	2	5	0.5	LIP	N		3	0.1	
2434	49	68.9	0.0000	0.0000	Y	Y	9/21/2011	0	Y	OD	N	Other	0	1	100	LIP	N		96	12	
2435	258.1	476	0.3281	0.2723	Y	N	9/21/2011	4	Y	OD	N	Scrap Steel	4	1	6	LIP	N		24	1	
2436	50	67.8	0.3281	0.6562	Y	N	10/14/2011	1	Y	OD	N	Scrap Metal	1	1	1	LIP	N		1	1	
2437	45.8	278.2	-0.4364	0.2461	Y	N	10/14/2011	6	Y	OD	N	Rebar	6	2	10	LIP	N		72	0.5	
2438	19.4	33.5	0.0000	0.1378	Y	N	10/6/2011	5	Y	OD	N	Scrap Metal	5	1	3	LIP	N		4	3	
2439	125.8	150.8	-0.2461	0.9843	Y	N	10/14/2011	36	Y	OD	N	Pipe	36	1	1	LIP	N		36	3	
2440	137.3	262	0.3281	-0.6562	Y	N	9/21/2011	1	Y	OD	N	Bolt	1	1	1	LIP	N		4	0.25	
2441	70.3	585	0.1640	0.7382	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	5	5	LIP	N		1	1	
2442	14.5	36.6	0.3281	0.2461	Y	N	10/14/2011	4	Y	OD	N	Scrap Metal	4	2	5	LIP	N		3	2	
2443	22.3	28	0.0000	0.0000	Y	N	10/6/2011	7	Y	OD	N	Scrap Metal	7	1	3	LIP	N		6	2	
2444	30.8	75	-0.0558	-0.1903	Y	N	10/6/2011	2	Y	OD	N	Scrap Steel	2	1	2	LIP	N		7	1	
2445	8.7	11	0.0000	0.6955	Y	N	10/6/2011	3	Y	OD	N	Scrap Metal	3	1	0.5	LIP	N		1	1	
2446	10.1	9.8	0.0000	-0.3281	Y	N	10/6/2011	7	Y	OD	N	Scrap Metal	7	1	4	LIP	N		6	4	
2447	102.1	131	0.0000	0.0000	Y	N	10/14/2011	6	Y	OD	N	Bolt	6	1	4	LIP	Y	Y	14	0.75	
2448	26.8	97.5	0.0000	0.9022	Y	N	9/21/2011	12	Y	OD	N	Scrap Metal	12	10	8	LIP	N		2	2	
2449	95.3	199	0.2461	-0.1083	Y	N	10/14/2011	4	Y	OD	N	Scrap Metal	4	3	7	LIP	N		7	3	
2450	479.5	770	0.1640	0.4199	Y	N	9/21/2011	4	Y	OD	N	Cable	2	1	3	LIP	Y	Y	36	0.25	
2450	479.5	770	0.1640	0.4199	Y	N	9/21/2011	4	Y	OD		Scrap Steel	4	1	5	LIP	Y	Y	8	5	
2451	10.7	32.4	-0.1640	-0.9022	Y	N	10/6/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		2	1	
2452	42.4	67	0.4101	0.2461	Y	N	10/14/2011	4	Y	OD	N	Scrap Metal	4	3	5	LIP	N		6	3	
2453	16.5	38.2	0.2198	0.4528	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	5	5	LIP	N		1	1	
2454	29.1	65.1	0.0000	0.2461	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	5	5	LIP	N		1	1	
2455	762.4	1040	0.1378	0.1640	Y	N	9/21/2011	2	Y	OD	N	Scrap Steel	2	1	20	LIP	N		12	8	
2456	43.2	64.4	0.0000	0.0000	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	5	3	LIP	N		1	1	

Table D-1 (continued)
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Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12,168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
2457	21.9	74.1	0.0000	0.5184	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	6	5	LIP	Y	Y	1	1	
2458	20.9	175	0.3281	-0.6562	Y	N	9/21/2011	3	Y	OD	N	Other	3	1	1000	LIP	N		36	36	
2459	26.3	39.2	0.0000	0.0000	Y	N	10/6/2011	7	Y	OD	N	Scrap Metal	7	1	1	LIP	N		3	1	
2460	20.9	46.3	0.0558	0.3281	Y	N	9/21/2011	4	Y	OD	N	Scrap Metal	4	5	5	LIP	N		1	1	
2461	15	42	0.3281	0.4921	Y	N	10/6/2011	6	Y	OD	N	Scrap Metal	6	2	2	LIP	N		3	1	
2462	9.8	43.6	0.0000	0.4101	Y	N	10/6/2011	7	Y	OD	N	Scrap Metal	7	4	5	LIP	N		3	1	
2463	37.6	80.2	-0.2461	-0.6562	Y	N	10/6/2011	5	Y	OD	N	Scrap Metal	5	1	6	LIP	N		8	4	
2464	61	96.7	0.1083	-0.1083	Y	N	10/6/2011	7	Y	OD	N	Scrap Metal	7	2	7	LIP	N		8	4	
2465	16.5	83.6	0.1640	-0.7940	Y	N	10/6/2011	7	Y	OD	N	Scrap Metal	7	4	8	LIP	N		5	5	
2466	82	274.2	0.2067	0.8465	Y	N	10/6/2011	3	Y	OD	N	Scrap Metal	3	1	20	LIP	N		11	10	
2467	40.1	70.5	0.0000	0.2461	Y	N	10/6/2011	9	Y	OD	N	Scrap Metal	9	1	7	LIP	N		9	4	
2468	18.9	30	-0.0820	-0.1903	Y	N	10/6/2011	6	Y	OD	N	Scrap Metal	6	2	3	LIP	N		4	1	
2469	106.6	142.9	0.1378	-0.1640	Y	N	10/6/2011	8	Y	OD	N	Scrap Metal	8	4	13	LIP	N		7	3	
2470	71.2	2472	0.0000	0.2461	Y	N	10/18/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	Y	Y	36	36	
2471	22.5	31.7	0.9843	0.0820	Y	N	10/20/2011	2	Y	OD	N	Bolt	2	1	2	LIP	N		4	0.75	
2472	7	15.8	0.9022	0.2461	Y	N	10/20/2011	1	Y	OD	N	Nails	1	3	0.3	LIP	Y	Y	4	0.1	
2473	51.9	127.8	0.0000	0.2461	Y	N	10/14/2011	4	Y	OD	N	Scrap Metal	4	1	8	LIP	N		8	5	
2474	10.1	100.1	0.6562	0.6562	Y	N	10/14/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		3	2	
2475	5	5.4	0.9843	0.0000	Y	N	10/20/2011	2	Y	OD	N	Nails	2	1	0.1	LIP	N		3	0.1	
2476	17.6	23.4	0.9843	0.3281	Y	N	10/14/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		3	2	
2477	159.9	200.6	-0.6562	0.0000	Y	N	10/14/2011	36	Y	OD	N	Pipe	36	1	1	LIP	N		36	3	
2478	48	165.3	0.0000	0.3281	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	1	5	LIP	N		6	6	
2479	15.5	60.3	0.3281	0.5741	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	1	0.5	LIP	N		4	0.25	
2480	41.8	46.9	0.0000	-0.2461	Y	N	10/6/2011	7	Y	OD	N	Scrap Metal	7	2	3	LIP	N		2	3	
2481	12.6	28.5	0.0000	0.0000	Y	N	9/20/2011	5	Y	OD	N	Scrap Metal	5	1	0.5	LIP	N		3	0.15	
2482	18.4	177	0.2723	0.5184	Y	N	9/20/2011	12	Y	OD	Y	Bolt	12	1	2	LIP	N		12	1	
2483	43.1	67.8	0.3018	-0.1148	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	2	2	LIP	N		4	4	
2484	70.5	139.7	0.3281	0.0820	Y	N	9/20/2011	12	Y	OD	N	Scrap Metal	12	1	5	LIP	N		5	6	
2485	6.8	10.5	0.6562	0.0000	Y	N	9/20/2011	4	Y	OD	N	Wire	4	1	0.5	LIP	N		5	0.1	
2486	41.1	60.9	0.2723	-0.2198	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	2	4	LIP	N		6	6	
2487	35.4	80.2	0.0820	0.1378	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		4	4	
2488	11.2	76.5	0.0558	0.3707	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		1	1	
2489	13.2	33.4	0.3281	0.0000	Y	N	9/20/2011	2	Y	OD	N	Wire	2	1	0.1	LIP	N		3	0.1	
2490	51.1	113.4	0.0000	0.0000	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	10	5	LIP	N		9	9	
2491	13.1	100	0.8760	0.0000	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		2	2	
2492	38.2	85.2	0.0000	0.0000	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		5	5	
2493	30.3	146.3	0.0000	-0.6562	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		8	1	
2494	100.5	155	0.0000	0.0000	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	2	4	LIP	N		8	1	
2495	26	318.8	-0.4429	0.9843	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		8	1	
2496	25.6	92.1	0.0000	0.6562	Y	N	9/21/2011	12	Y	OD	N	Scrap Metal	12	1	5	LIP	N		6	6	
2497	23.6	46.2	0.7808	-0.6562	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		3	3	
2498	40.1	70.7	0.0000	-0.2461	Y	N	10/6/2011	8	Y	OD	N	Scrap Metal	8	2	4	LIP	N		6	3	
2499	31.7	67.1	0.0000	0.0000	Y	N	10/6/2011	9	Y	OD	N	Scrap Metal	9	3	6	LIP	N		4	3	
2500	15.5	33.3	0.0000	0.1640	Y	N	10/6/2011	7	Y	OD	N	Scrap Metal	7	2	5	LIP	N		4	3	
2501	69.6	94.6	0.0000	0.0000	Y	N	10/6/2011	2	Y	OD	N	Scrap Metal	2	9	15	LIP	N		4	3	
2502	29.1	34.3	0.2461	-0.5741	Y	N	10/6/2011	4	Y	OD	N	Scrap Metal	4	2	2	LIP	N		3	1	
2503	32.6	101.9	0.0000	0.0000	Y	N	10/6/2011	7	Y	OD	N	Scrap Metal	7	1	5	LIP	N		4	2	
2504	20.7	72.4	0.0820	0.1640	Y	N	10/6/2011	7	Y	OD	N	Scrap Metal	7	2	5	LIP	Y	Y	4	4	
2505	41.5	70.4	-0.0820	0.0000	Y	N	10/6/2011	11	Y	OD	N	Scrap Metal	11	3	4	LIP	N		3	1	
2506	99.5	182.3	-0.3281	0.1903	Y	N	9/21/2011	12	Y	OD	N	Scrap Metal	12	20	10	LIP	N		24	24	
2507	5.2	26	0.0000	0.5741	Y	N	10/6/2011	6	Y	OD	N	Scrap Metal	6	1	0.5	LIP	N		1	1	
2508	12	22.2	0.1640	0.2461	Y	N	10/6/2011	7	Y	OD	N	Scrap Metal	7	2	5	LIP	N		3	2	
2509	519.3	804	0.0000	0.0000	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	1	5	LIP	N		12	6	
2510	24.1	40.4	0.0000	0.0000	Y	N	10/6/2011	5	Y	OD	N	Scrap Metal	5	1	1	LIP	N		3	2	
2511	15.6	292.5	0.0000	0.0000	Y	N	10/6/2011	6	Y	OD	N	Scrap Metal	6	2	5	LIP	N		4	2	
2512	18.2	39.8	0.0000	0.3281	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		1	1	
2513	37.7	48.1	0.0000	0.0000	Y	N	10/6/2011	3	Y	OD	N	Scrap Metal	3	2	1	LIP	N		4	1	
2514	484.9	666.6	-0.3281	0.2723	Y	N	9/21/2011	24	Y	OD	N	Scrap Metal	24	1	35	LIP	N		18	18	
2515	11.8	40	0.2461	-0.3018	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		1	1	
2516	17.2	32.3	-0.1640	-0.4101	Y	N	10/6/2011	6	Y	OD	N	Scrap Metal	6	2	3	LIP	N		4	1	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
2517	16.7	21.1	0.0000	0.0000	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	Y	Y	2	2	
2518	28.5	84.9	0.4921	0.0000	Y	N	10/6/2011	5	Y	OD	N	Scrap Metal	5	1	4	LIP	N		6	3	
2519	15.4	49.4	-0.2461	0.4921	Y	N	10/6/2011	5	Y	OD	N	Scrap Metal	5	2	3	LIP	N		4	1	
2520	57.7	188.2	0.0000	0.4921	Y	N	10/6/2011	3	Y	OD	N	Scrap Metal	3	4	9	LIP	N		8	5	
2521	30.6	121.2	0.3543	-0.6299	Y	N	10/6/2011	3	Y	OD	N	Scrap Metal	3	1	7	LIP	N		8	4	
2522	28.8	47.7	0.0000	0.0000	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		4	4	
2523	5.3	132.5	0.0000	0.9022	Y	N	10/6/2011	18	Y	OD	N	Scrap Metal	18	1	20	LIP	N		9	6	
2524	74.4	141.2	0.6562	0.3281	Y	N	10/14/2011	0	Y	OD	N	Scrap Steel	0	1	1	LIP	Y	Y	24	0.75	
2525	5.2	12.2	0.9843	-0.6562	Y	N	10/20/2011	2	Y	OD	N	Bolt	2	1	0.2	LIP	N		3	0.125	
2526	7.2	9.5	0.9843	0.3281	Y	N	10/20/2011	0	Y	OD	N	Scrap Metal	0	1	1	LIP	N		1	1	
2527	1136.8	4160	0.0000	0.6562	Y	N	9/20/2011	2	Y	OD	N	Scrap Metal	2	1	10	LIP	N		18	18	
2528	44.6	150	0.2461	0.4364	Y	N	9/20/2011	2	Y	OD	N	Pipe	2	1	2	LIP	N		7	3	
2529	9.5	45.9	0.1903	0.3281	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	1	0.5	LIP	N		2	2	
2530	18.4	41	0.0000	0.3281	Y	N	9/20/2011	4	Y	OD	N	Nails	4	1	0.5	LIP	Y	Y	3	0.15	
2531	166.1	1299	0.6004	0.0000	Y	Y											N				
2532	17.6	28.7	0.0000	0.3281	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	1	0.5	LIP	N		4	2	
2533	21.6	134.3	0.8760	0.6562	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		5	6	
2534	198.3	256	0.0000	0.0000	Y	N	9/20/2011	12	Y	OD	N	Rebar	12	1	10	LIP	N		24	1	
2535	43.4	65.4	0.0000	0.0000	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	2	4	LIP	N		4	4	
2536	8.2	96.7	0.2198	0.3871	Y	N	9/20/2011	6	Y	OD	N	Nails	6	2	0.5	LIP	N		3	0.1	
2537	117.4	222.1	0.0000	0.6562	Y	N	9/20/2011	6	Y	OD	Y	Scrap Metal	6	1	15	LIP	N		10	10	
2538	42.1	115.6	-0.1640	-0.2461	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	3	5	LIP	N		6	6	
2539	47.9	113.2	0.0000	0.9285	Y	N	9/20/2011	12	Y	OD	Y	Bolt	12	1	2	LIP	N		8	1	
2540	6.2	17.2	0.3281	0.3281	Y	N	9/20/2011	10	Y	OD	N	Scrap Metal	10	1	1	LIP	N		4	4	
2541	94.2	2472	0.0000	0.6562	Y	Y											N				
2542	191.4	247.3	0.0000	0.0000	Y	N	9/20/2011	12	Y	OD	Y	Scrap Metal	12	1	2	LIP	N		6	1	
2542	191.4	247.3	0.0000	0.0000	Y	N	9/20/2011	12	Y	OD	N	Scrap Metal	2	30	20	LIP	N		36	36	
2543	31	240.9	0.0000	0.8465	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	2	1	LIP	N		7	1	
2544	17.3	79	-0.9843	0.3281	Y	N	10/14/2011	2	Y	OD	N	Scrap Metal	2	1	4	LIP	N		6	3	
2545	11	53.5	0.5184	0.9843	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		6	6	
2546	44.8	164.2	-0.1640	0.6299	Y	N	10/6/2011	7	Y	OD	N	Scrap Metal	7	3	15	LIP	N		9	5	
2547	17.9	45.2	0.0000	0.0000	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	1	0.5	LIP	N		2	2	
2548	87.1	139.1	0.0000	0.5184	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	4	2	LIP	N		10	1	
2549	42.4	143.4	0.0000	0.5184	Y	N	9/20/2011	3	Y	OD	Y	Scrap Metal	3	1	2	LIP	N		6	1	
2550	28	66.3	-0.2723	-0.3281	Y	N	9/20/2011	12	Y	OD	N	Scrap Metal	12	1	1	LIP	N		6	6	
2551	51.5	64.5	0.1083	0.3281	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	2	2	LIP	N		7	1	
2552	125.7	184.9	0.0558	0.1083	Y	N	9/21/2011	12	Y	OD	N	Scrap Metal	12	20	10	LIP	N		24	24	
2553	41.9	52.6	0.1640	0.6988	Y	N	9/20/2011	3	Y	OD	N	Scrap Metal	3	2	1	LIP	N		6	1	
2554	15.5	63.9	0.0000	0.4921	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		4	4	
2555	114.7	166	0.0000	0.3281	Y	N	9/20/2011	10	Y	OD	N	Scrap Metal	10	19	5	LIP	N		24	24	
2556	7.3	39.3	0.0000	0.6562	Y	N	9/20/2011	3	Y	OD	Y	Nails	3	2	0.5	LIP	N		3	0.15	
2557	43.1	87.4	0.0000	0.0000	Y	N	9/20/2011	12	Y	OD	N	Scrap Metal	12	1	2	LIP	N		6	6	
2558	27.5	72.4	-0.4101	-0.7644	Y	N	10/6/2011	8	Y	OD	N	Scrap Metal	8	3	9	LIP	Y	Y	6	4	
2559	133.5	451	0.4364	0.6562	Y	N	9/20/2011	12	Y	OD	N	Scrap Metal	12	3	10	LIP	N		24	24	
2560	29.2	50.4	0.0000	0.0000	Y	N	9/20/2011	12	Y	OD	N	Scrap Metal	12	1	1	LIP	N		5	1	
2561	12.1	18.2	0.0000	0.0000	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		5	1	
2562	5.3	1.4	0.0000	0.0000	N	N	10/14/2011	0	N								N				
2563	23.8	83.4	0.0000	0.2723	Y	N	9/21/2011	12	Y	OD	N	Scrap Metal	12	1	2	LIP	N		8	1	
2564	23.4	38.9	0.0000	0.1083	Y	N	9/20/2011	4	Y	OD	N	Scrap Steel	4	1	0.5	LIP	N		5	1	
2565	29.4	71.1	0.0000	0.0000	Y	N	9/20/2011	8	Y	OD	N	Scrap Metal	8	1	1	LIP	N		3	3	
2566	26.5	74	0.5184	0.6004	Y	N	9/20/2011	1	Y	OD	N	Scrap Metal	1	1	1	LIP	N		3	3	
2567	48	50.7	-0.6562	-0.0820	Y	N	10/14/2011	36	Y	OD	N	Pipe	36	1	1	LIP	N		36	3	
2568	180.2	225.8	0.0000	0.0000	Y	N	9/20/2011	12	Y	OD	N	Scrap Metal	12	24	10	LIP	N		24	24	
2569	58.6	95.8	0.0000	0.0000	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	2	3	LIP	N		6	6	
2570	13.3	76	0.9843	0.0000	Y	N	10/17/2011	8	Y	OD	N	Scrap Metal	8	5	8	LIP	N		6	3	
2571	6.6	1.8	0.0000	0.0000	N	N	10/14/2011	0	N								N				
2572	49.1	76.1	0.0000	0.3281	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	2	5	LIP	N		7	7	
2573	28.1	111.2	0.3281	0.8760	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		3	3	
2574	5.3	1.6	0.0000	0.0000	Y	N	10/14/2011	0	N								N				
2575	53.8	58.2	0.0000	0.8760	Y	N	10/17/2011	6	Y	OD	N	Scrap Metal	6	3	6	LIP	N		4	2	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
2576	12.2	34	0.0000	0.0000	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		2	2	
2577	20.8	23.9	0.6562	0.0000	Y	N	9/20/2011	12	Y	OD	N	Scrap Metal	12	3	2	LIP	N		6	2	
2578	5.7	1.2	0.0000	0.0000	N	N	10/14/2011	0	N								N				
2579	14.7	15	0.0000	0.0000	Y	N	9/20/2011	3	Y	OD	N	Nails	3	1	0.5	LIP	N		3	0.15	
2580	175.7	218	0.0000	0.0000	Y	Y											N				
2581	18.9	107.3	0.0000	-0.9843	Y	N	10/20/2011	4	Y	OD	N	Scrap Metal	4	1	10	LIP	N		13	6	
2582	29.8	44	0.0000	0.0000	Y	N	9/20/2011	6	Y	OD	Y	Scrap Metal	6	1	2	LIP	N		6	1	
2583	5561.5	8620	0.0000	0.4199	Y	Y											N				
2584	13	169	0.2723	0.6562	Y	N	9/20/2011	2	Y	OD	Y	Nails	2	1	0.5	LIP	N		4	0.5	
2585	20	79.9	0.0000	0.1640	Y	N	9/20/2011	6	Y	OD	Y	Scrap Metal	6	1	1	LIP	N		6	1	
2586	9.5	30.4	0.0656	0.0656	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	1	0.5	LIP	N		1	1	
2587	21.9	1452	0.0000	0.9022	Y	Y											N				
2588	27.6	111.2	0.2198	0.1148	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		10	0.5	
2589	49.7	361.5	-0.9022	-0.9843	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		8	1	
2590	91.6	224.1	0.3281	0.5184	Y	N	9/20/2011	6	Y	OD	Y	Scrap Metal	3	1	1	LIP	Y	Y	6	1	
2590	91.6	224.1	0.3281	0.5184	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	Y	Y	3	3	
2591	15.6	38.3	0.3018	0.2067	Y	N	10/14/2011	3	Y	OD	N	Scrap Metal	3	1	3	LIP	N		3	2	
2592	33.4	90.7	0.0000	0.7940	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		3	3	
2593	31.5	65.5	0.0820	0.4364	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		4	4	
2594	49.3	2293	0.0000	0.9580	Y	Y											N				
2595	36.6	61.3	0.0000	0.1083	Y	N	9/20/2011	3	Y	OD	N	Scrap Metal	3	2	2	LIP	N		6	1	
2596	92.7	97.6	0.0000	0.0000	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	2	5	LIP	Y	Y	6	5	
2596	92.7	97.6	0.0000	0.0000	Y	N	9/20/2011	6	Y	OD		Other	6	1	1	LIP	Y	Y	36	36	
2597	21.9	2145	0.0000	0.9843	Y	Y											N				
2598	40.8	65.8	0.0000	0.2198	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	3	4	LIP	N		5	5	
2599	83.2	152.3	0.3281	0.3281	Y	N	10/14/2011	2	Y	OD	N	Scrap Metal	2	3	10	LIP	N		6	4	
2600	31.3	72.8	0.1083	0.6562	Y	N	9/20/2011	6	Y	OD	Y	Scrap Metal	6	1	2	LIP	N		6	1	
2601	21.1	28.7	0.1903	0.3839	Y	N	10/20/2011	4	Y	OD	N	Scrap Metal	4	5	1	LIP	N		36	36	
2602	60.5	107.3	0.6004	0.2461	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	1	5	LIP	N		8	8	
2603	37.5	57.2	0.0000	0.0000	Y	N	9/21/2011	6	Y	OD	N	Rebar	6	1	5	LIP	N		24	24	
2604	54.8	66.3	0.0558	0.3281	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	2	3	LIP	N		6	5	
2605	39.1	90.1	0.0000	0.0000	Y	N	9/20/2011	12	Y	OD	N	Scrap Metal	12	3	4	LIP	N		6	6	
2606	220.5	429.2	0.4921	-0.3281	Y	N	10/14/2011	4	Y	OD	N	Scrap Metal	4	5	25	LIP	N		10	8	
2607	38.5	76	-0.0558	0.6562	Y	N	10/14/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		36	36	
2608	37	67.3	0.0000	0.4921	Y	N	10/6/2011	5	Y	OD	N	Scrap Metal	5	2	12	LIP	N		6	4	
2609	116.8	147.2	0.0000	-0.3281	Y	N	9/21/2011	12	Y	OD	N	Scrap Metal	12	10	10	LIP	N		24	24	
2610	57.5	115.6	0.0000	0.0000	Y	N	9/20/2011	3	Y	OD	N	Scrap Metal	3	2	2	LIP	N		10	1	
2611	35.9	129.3	0.9843	0.9843	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	2	3	LIP	N		6	1	
2612	82.5	108.5	0.0000	0.0000	Y	N	9/21/2011	24	Y	OD	N	Scrap Metal	24	20	10	LIP	N		24	24	
2613	5.6	33	0.1083	0.1640	Y	N	9/20/2011	3	Y	OD	N	Scrap Metal	3	2	0.5	LIP	Y	Y	1	1	
2613	5.6	33	0.1083	0.1640	Y	N	9/20/2011	3	Y	OD		Scrap Steel	2	1	2	LIP	Y	Y	8	1	
2614	38.8	68.9	0.0000	0.0000	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	2	1	LIP	N		8	1	
2615	7	41.2	-0.1378	-0.6562	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	1	0.5	LIP	N		1	1	
2616	49.7	90.3	0.0000	0.0000	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	2	3	LIP	N		4	4	
2617	20	45.6	0.3543	-0.5741	Y	N	10/6/2011	6	Y	OD	N	Scrap Metal	6	1	5	LIP	N		3	2	
2618	54.3	111.2	0.0000	0.0000	Y	N	9/20/2011	6	Y	OD	N	Scrap Steel	6	6	6	LIP	Y	Y	8	1	
2619	17.7	57	0.0000	0.3018	Y	N	9/20/2011	5	Y	OD	N	Scrap Metal	5	1	0.5	LIP	N		1	1	
2620	34	172.4	0.3018	0.6562	Y	N	9/20/2011	6	Y	OD	Y	Scrap Metal	6	1	2	LIP	N		6	1	
2621	23	49.8	0.0000	0.0000	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	N		6	1	
2622	29.8	136.3	0.0558	0.4921	Y	N	9/21/2011	12	Y	OD	N	Scrap Metal	12	1	1	LIP	N		4	4	
2623	82.3	163.6	0.0000	-0.6562	Y	N	9/21/2011	2	Y	OD	N	Scrap Metal	2	2	2	LIP	N		8	1	
2624	59.6	85.9	0.0000	0.4101	Y	N	9/21/2011	6	Y	OD	N	Scrap Metal	6	3	3	LIP	N		6	6	
2625	30.4	134	-0.9843	-0.9843	Y	N	9/21/2011	12	Y	OD	N	Scrap Metal	12	3	3	LIP	N		4	4	
2626	10.5	65.5	0.9022	0.1148	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	1	0.5	LIP	N		6	1	
2627	21.4	22.4	0.1083	0.5741	Y	N	10/14/2011	36	Y	OD	N	Pipe	36	1	1	LIP	N		36	1	
2628	8	36.7	0.9843	0.4921	Y	N	10/20/2011	4	Y	OD	N	Scrap Metal	4	1	8	LIP	N		6	4	
2629	516.7	1402	0.0000	0.9843	Y	Y											N				
2630	3327.5	10369	0.3281	0.3281	Y	N	9/20/2011	0	Y	OD	N	Scrap Metal	0	1	50	LIP	N		72	6	
2631	28.7	74.7	0.0000	0.0000	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		4	3	
2632	168.8	316.2	0.5184	0.2461	Y	N	9/20/2011	1	Y	OD	N	Scrap Metal	1	1	10	LIP	N		48	1	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
2633	121	209	0.2461	0.0820	Y	N	10/14/2011	2	Y	OD	N	Scrap Steel	2	1	3	LIP	N		24	1	
2634	31.8	39.5	0.3281	-0.1640	Y	N	10/14/2011	8	Y	OD	N	Scrap Steel	8	3	5	LIP	N		6	1.5	
2635	65	77.1	-0.8202	-0.8202	Y	N	10/14/2011	36	Y	OD	N	Pipe	36	1	1	LIP	N		36	3	
2636	5.1	0.2	0.0000	0.0000	N	N	10/14/2011	0	N								N				
2637	26.8	63.2	0.2461	0.2461	Y	N	10/14/2011	4	Y	OD	N	Bolt	4	1	1	LIP	N		8	0.5	
2638	286.9	403	-0.1640	0.0820	Y	N	10/14/2011	1	Y	OD	N	Scrap Metal	1	5	15	LIP	N		8	4	
2639	69.4	211	0.3281	0.6562	Y	N	9/21/2011	3	Y	OD	N	Scrap Metal	3	1	1	LIP	N		8	1	
2640	87.8	274.6	0.3281	-0.1640	Y	N	10/14/2011	24	Y	OD	N	Rebar	24	1	3	LIP	Y	Y	48	0.5	
2641	21.8	64.2	0.3281	0.6562	Y	N	10/14/2011	3	Y	OD	N	Scrap Steel	3	1	2	LIP	N		12	0.75	
2642	120.1	180.2	0.0000	0.0000	Y	N	9/21/2011	3	Y	OD	N	Scrap Metal	3	2	2	LIP	N		10	1	
2643	29.4	44.2	0.0000	0.0000	Y	N	9/21/2011	12	Y	OD	N	Scrap Metal	12	2	3	LIP	N		6	6	
2644	34.5	47.2	0.0000	0.0000	Y	N	10/14/2011	3	Y	OD	N	Scrap Steel	3	1	2	LIP	N		12	0.75	
2645	54.7	65	-0.7382	0.5348	Y	N	10/14/2011	4	Y	OD	N	Scrap Metal	4	3	5	LIP	N		3	2	
2646	23.6	50.1	0.0000	0.0000	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	3	3	LIP	N		1	1	
2647	16.7	62.8	-0.1640	-0.6562	Y	N	10/14/2011	4	Y	OD	N	Scrap Steel	4	1	1	LIP	N		10	1	
2648	16.3	978	0.0000	-0.5741	Y	N	10/14/2011	3	Y	OD	N	Fence Post	3	1	3	LIP	N		12	3	
2649	147.1	260.8	0.0000	0.0000	Y	N	10/14/2011	4	Y	OD	N	Scrap Metal	4	5	20	LIP	N		36	36	
2650	19.6	44.4	0.0558	0.1083	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	3	5	LIP	N		2	2	
2651	17.2	26.8	0.0000	0.3018	Y	N	9/20/2011	2	Y	OD	N	Scrap Metal	2	1	0.5	LIP	N		1	1	
2652	27.4	60.5	0.5184	0.0000	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	3	3	LIP	N		1	1	
2653	9.3	12.4	-0.1640	0.3281	Y	N	10/14/2011	3	Y	OD	N	Wire	3	1	0.1	LIP	N		12	0.1	
2654	58.1	102.9	0.0000	0.0000	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	4	4	LIP	Y	Y	1	1	
2655	11.1	13.7	0.2461	0.0558	Y	N	10/14/2011	3	Y	OD	N	Wire	3	1	0.1	LIP	N		12	0.1	
2656	62.9	119.3	0.0000	0.2723	Y	N	9/20/2011	5	Y	OD	N	Scrap Metal	5	5	5	LIP	N		1	1	
2657	119.5	179	0.5184	0.2723	Y	N	9/20/2011	2	Y	OD	N	Scrap Steel	2	1	2	LIP	N		8	1	
2658	276	125.6	0.0000	0.0000	Y	N	9/20/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	1	
2658	276	125.6	0.0000	0.0000	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	1	9	LIP	N		8	8	
2659	233	408.6	0.1640	0.4199	Y	N	9/20/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	1	
2659	233	408.6	0.1640	0.4199	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	1	8	LIP	N		8	6	
2660	37.3	124.2	0.0000	0.0000	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	4	5	LIP	N		2	2	
2661	71.3	165.6	0.0000	0.3281	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	4	5	LIP	N		3	3	
2662	48.6	105.6	0.0000	0.0000	Y	N	9/20/2011	8	Y	OD	N	Scrap Metal	8	5	5	LIP	N		2	1	
2663	36	65.8	0.0000	0.0000	Y	N	9/20/2011	3	Y	OD	N	Scrap Steel	3	1	2	LIP	N		8	1	
2664	14	170	0.6562	0.3281	Y	Y	9/20/2011	0	Y	OD	N	Other	0	1	200	LIP	Y	Y	96	12	
2665	8	11.9	0.4921	-0.5741	Y	N	10/20/2011	4	Y	OD	N	Scrap Metal	2	1	0.25	LIP	Y	Y	0.5	0.5	
2665	8	11.9	0.4921	-0.5741	Y	N	10/20/2011	4	Y	OD		Scrap Metal	4	1	1	LIP	Y	Y	7	2	
2666	12.7	24.2	0.0000	0.0000	Y	N	9/20/2011	2	Y	OD	N	Scrap Metal	2	3	1	LIP	N		1	1	
2667	186	466.8	0.0000	-0.4199	Y	N	9/20/2011	3	Y	OD	N	Scrap Steel	3	2	2	LIP	N		8	1	
2667	186	466.8	0.0000	-0.4199	Y	N	9/20/2011	3	Y	OD	N	Scrap Metal	3	1	1	LIP	N		1	1	
2668	18.7	69.3	0.3281	0.9022	Y	N	9/20/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	1	
2669	54.4	126.8	0.0000	0.9843	Y	N	9/20/2011	6	Y	OD	N	Other	6	1	1000	LIP	N		36	36	
2670	30.6	129.8	0.0558	0.2461	Y	N	10/20/2011	4	Y	OD	N	Scrap Metal	4	1	10	LIP	N		8	8	
2671	5.9	5.8	-0.9843	0.5741	Y	N	10/20/2011	2	Y	OD	N	Nails	2	1	0.1	LIP	N		3	0.1	
2672	23.7	29.8	0.0820	-0.4101	Y	N	10/20/2011	0	Y	OD	N	Nails	0	1	1	LIP	N		4	0.1	
2673	190.3	1028	0.0000	0.6562	Y	N	9/20/2011	3	Y	OD	N	Scrap Steel	3	1	20	LIP	N		12	8	
2674	48	69.5	0.0000	0.5741	Y	N	9/20/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	1	
2675	53.3	106.1	0.0000	0.0000	Y	N	9/20/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	1	
2676	22.7	132.6	0.0000	0.6562	Y	N	9/20/2011	4	Y	OD	N	Other	4	1	100	LIP	N		96	8	
2677	260.2	300.2	-0.1903	-0.7119	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	3	5	LIP	N		2	1	
2678	59.3	73.2	0.2198	0.1378	Y	N	9/20/2011	3	Y	OD	N	Other	3	1	1000	LIP	N		36	36	
2679	33.9	111.4	0.3281	0.5184	Y	N	9/20/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	1	
2680	41.1	130.7	0.6562	0.5184	Y	N	9/20/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	1	
2681	47.4	844	0.0000	0.9843	Y	N	9/20/2011	3	Y	OD	N	Other	3	1	1000	LIP	N		36	36	
2682	5.9	14	0.0000	0.2723	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	Y	Y	1	1	
2683	6.1	48	-0.2461	-0.1640	Y	N	10/14/2011	2	Y	OD	N	Bolt	2	2	0.5	LIP	N		6	0.5	
2684	22	35.1	0.0000	0.0000	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	2	2	LIP	N		2	2	
2685	6.3	8.5	0.0000	0.0000	Y	N	10/6/2011	3	Y	OD	N	Scrap Metal	3	1	0.5	LIP	N		1	2	
2686	12.7	91.8	0.0000	0.2198	Y	N	9/20/2011	6	Y	OD	N	Scrap Steel	6	1	2	LIP	N		8	1	
2687	22.8	310.4	0.0000	-0.6562	Y	N	10/17/2011	3	Y	OD	N	Rebar	3	1	25	LIP	N		52	1	
2688	47.6	105.7	0.4921	0.9285	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	1	5	LIP	N		7	5	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12,168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
2689	75.2	967	0.0000	0.9843	Y	N	9/20/2011	2	Y	OD	N	Scrap Steel	2	1	24	LIP	N		12	8	
2690	22.2	32.3	-0.2461	0.1640	Y	N	10/6/2011	3	Y	OD	N	Scrap Metal	3	1	1	LIP	N		2	2	
2691	28.2	870	-0.9843	0.0000	Y	N	10/14/2011	2	Y	OD	N	Scrap Steel	2	1	4	LIP	N		12	5	
2692	73.5	517	-0.3018	-0.3281	Y	N	9/20/2011	12	Y	OD	N	Scrap Steel	12	1	22	LIP	N		12	8	
2693	61.5	718	0.1640	0.9843	Y	N	9/20/2011	4	Y	OD	N	Scrap Steel	4	1	20	LIP	N		12	8	
2694	8.4	19.2	0.0000	0.4921	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	1	1	LIP	Y	Y	36	36	
2695	49.6	70.7	0.2198	0.0820	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	5	5	LIP	N		1	1	
2696	35.3	45	0.0000	0.0000	Y	N	9/20/2011	1	Y	OD	N	Scrap Metal	1	2	1	LIP	N		1	1	
2697	333.6	868	0.4429	0.0558	Y	N	9/20/2011	3	Y	OD	N	Scrap Steel	3	1	20	LIP	N		12	8	
2698	53	87.1	0.0000	0.0000	Y	N	9/20/2011	2	Y	OD	N	Scrap Steel	2	1	2	LIP	N		8	1	
2699	32.2	51.3	0.0000	0.0000	Y	N	9/20/2011	1	Y	OD	N	Scrap Steel	1	1	0.5	LIP	N		8	0.25	
2700	76.7	156.2	0.6824	0.0558	Y	N	9/20/2011	12	Y	OD	N	Other	12	1	50	LIP	N		60	10	
2701	12.6	27.6	0.0000	0.0000	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	N		2	2	
2702	174	625.3	0.0000	0.9843	Y	Y	9/20/2011	0	Y	OD	N	Other	0	1	4000	LIP	N		72	60	
2703	176.3	554.6	0.0000	0.9843	Y	Y	9/20/2011	0	Y	OD	N	Other	0	1	4000	LIP	N		72	60	
2704	5.3	7.8	0.0000	0.0000	Y	N	10/12/2011	2	Y	OD	N	Nails	2	1	0.3	LIP	N		2	0.1	
2705	10.1	17	0.1083	-0.1640	Y	N	10/12/2011	6	Y	OD	N	Scrap Steel	6	1	1	LIP	N		4	2	
2706	18.7	42.1	0.3281	0.0820	Y	N	10/12/2011	5	Y	OD	N	Chain	5	1	4	LIP	N		4	2	
2707	162.3	214	0.0000	0.1640	Y	N	10/12/2011	4	Y	OD	N	Scrap Steel	4	1	10	LIP	N		7	4	
2708	30	46.1	0.9843	-0.9843	Y	N	10/12/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		5	2	
2709	15.6	22	0.0820	0.2067	Y	N	10/12/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		3	1	
2710	196.9	226.4	-0.0820	0.1640	Y	N	10/12/2011	5	Y	OD	N	Scrap Steel	5	2	6	LIP	N		8	3	
2711	305.4	419.4	-0.1083	0.1378	Y	N	10/12/2011	3	Y	OD	N	Bolt	3	4	7	LIP	N		13	1	
2712	202.1	318	0.0000	0.1640	Y	N	10/12/2011	7	Y	OD	N	Trash Pit	7	28	21	LIP	N		3	1	
2713	128.6	130.2	-0.2461	0.0000	Y	N	10/12/2011	3	Y	OD	N	Trash Pit	3	21	8	LIP	N		3	1	
2714	282.3	492.4	0.0000	-0.3281	Y	N	10/12/2011	8	Y	OD	N	Scrap Steel	8	1	15	LIP	N		14	6	
2715	6.2	11.8	0.7382	0.1378	Y	N	10/12/2011	3	Y	OD	N	Scrap Metal	3	1	1	LIP	N		2	1	
2716	198.8	318	0.6562	-0.6562	Y	N	10/12/2011	7	Y	OD	N	Scrap Steel	7	1	15	LIP	N		18	2	
2717	63.9	77.3	0.9843	-0.3839	Y	N	10/12/2011	2	Y	OD	N	Scrap Metal	2	1	3	LIP	N		7	3	
2718	20.3	49.8	-0.1640	0.4921	Y	N	10/12/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	Y	Y	6	1	
2719	1459.2	1224	0.0000	0.0000	Y	Y	9/19/2011	0	Y	OD	N	Bolt	0	8	5	LIP	Y	Y	12	0.5	
2720	73.3	113	-0.1640	-0.1640	Y	N	10/12/2011	1	Y	OD	N	Scrap Steel	1	2	2	LIP	Y	Y	11	1	
2721	21.6	402.5	0.0000	0.6562	Y	N	10/12/2011	4	Y	OD	N	Rebar	4	1	89	LIP	N		36	18	
2722	22.8	59.7	0.0000	0.0000	Y	N	9/20/2011	3	Y	OD	N	Scrap Metal	3	1	2	LIP	N		6	4	
2723	5.6	6.1	0.5741	0.0000	Y	N	10/12/2011	1	Y	OD	N	Wire	1	1	0.4	LIP	N		2	0.1	
2724	20.3	25.2	0.8202	0.1640	Y	N	10/12/2011	4	Y	OD	N	Nails	4	2	0.5	LIP	N		3	0.1	
2725	11.5	18.1	0.0000	-0.6562	Y	N	10/12/2011	1	Y	OD	N	Nails	1	3	0.5	LIP	N		3	0.1	
2726	8.3	15	0.0000	0.1378	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	2	1	LIP	N		1	1	
2727	23.6	28.5	0.0000	0.5184	Y	N	9/20/2011	8	Y	OD	N	Scrap Metal	4	3	2	LIP	Y	Y	1	1	
2727	23.6	28.5	0.0000	0.5184	Y	N	9/20/2011	8	Y	OD		Scrap Steel	8	1	3	LIP	Y	Y	16	0.75	
2728	33.4	169.8	0.1378	0.8465	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		8	6	
2729	26.9	38.2	0.2461	0.0000	Y	N	9/20/2011	1	Y	OD	N	Scrap Metal	1	1	1	LIP	N		3	2	
2730	138.9	239.2	0.0000	0.0000	Y	N	9/20/2011	1	Y	OD	N	Scrap Metal	1	3	3	LIP	N		1	1	
2731	14.6	42.6	0.0000	0.0000	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	2	1	LIP	N		1	1	
2732	9.8	26.8	-0.2461	-0.3281	Y	N	10/12/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		5	2	
2733	53	64	0.0000	0.3281	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	3	4	LIP	N		2	2	
2734	51.6	63	0.0820	0.0000	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	2	2	LIP	N		2	2	
2735	26.5	53.6	0.0000	0.0000	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	2	2	LIP	N		2	1	
2736	13.1	54.2	0.1378	0.3281	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		2	1	
2737	5.5	13.4	0.0000	0.0000	Y	N	9/20/2011	5	Y	OD	N	Scrap Metal	5	1	2	LIP	N		4	2	
2738	8.2	22.5	0.6988	0.2198	Y	N	9/20/2011	2	Y	OD	N	Scrap Metal	2	1	1	LIP	N		1	1	
2739	6.8	30	0.3281	0.0000	Y	N	9/20/2011	1	Y	OD	N	Scrap Metal	1	1	0.25	LIP	N		0.5	0.5	
2740	13.3	33.1	0.0558	0.5741	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	3	3	LIP	N		2	2	
2741	30.3	60.9	0.1378	0.0558	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	6	6	LIP	N		2	2	
2742	67.7	119	0.0000	0.0000	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	1	5	LIP	N		4	4	
2743	273.8	244	0.1903	0.7940	Y	N	9/20/2011	2	Y	OD	N	Scrap Steel	2	1	20	LIP	N		12	8	
2744	48	75.2	0.0000	0.0000	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	3	2	LIP	N		1	1	
2745	17.3	56.4	0.0000	0.9843	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	2	4	LIP	N		4	3	
2746	66.4	123	0.2723	0.1083	Y	N	9/20/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	1	
2747	13.1	14.3	0.3281	0.0000	Y	N	10/12/2011	5	Y	OD	N	Scrap Metal	5	1	1	LIP	N		4	1	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
2748	76.3	152.5	0.1903	0.1148	Y	N	9/20/2011	2	Y	OD	N	Other	2	1	1000	LIP	N		36	36	
2749	6.7	105.5	0.0000	0.6004	Y	N	9/20/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	1	
2750	97.2	119.6	0.0000	0.0000	Y	N	9/20/2011	1	Y	OD	N	Scrap Steel	1	1	2	LIP	N		8	1	
2751	6.7	11.7	0.0000	0.0000	Y	N	9/20/2011	3	Y	OD	N	Scrap Metal	3	3	2	LIP	N		1	1	
2752	28.8	90.4	0.0000	0.0000	Y	N	9/20/2011	1	Y	OD	N	Scrap Steel	1	1	0.5	LIP	N		8	0.25	
2753	29.6	152.4	0.0000	0.4364	Y	N	9/20/2011	3	Y	OD	N	Scrap Steel	3	1	2	LIP	N		8	1	
2754	114.8	175.1	0.4921	0.1083	Y	N	9/20/2011	8	Y	OD	N	Scrap Metal	8	5	9	LIP	N		3	2	
2755	11.4	18.2	0.0000	0.0000	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	2	1	LIP	N		1	1	
2756	90.4	169.3	0.0000	0.0000	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	1	5	LIP	N		8	4	
2757	126.3	154.6	0.1378	0.1903	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	2	20	LIP	N		14	6	
2758	27.8	101	0.3281	0.1083	Y	N	9/20/2011	3	Y	OD	N	Scrap Steel	3	1	2	LIP	N		8	1	
2759	17.9	52.6	0.0000	0.4921	Y	N	10/17/2011	5	Y	OD	N	Scrap Metal	5	2	4	LIP	N		6	2	
2760	96	182.2	0.0000	0.0000	Y	N	9/20/2011	3	Y	OD	N	Scrap Steel	3	2	3	LIP	N		8	1	
2760	96	182.2	0.0000	0.0000	Y	N	9/20/2011	3	Y	OD	N	Scrap Metal	3	3	3	LIP	N		1	1	
2760	96	182.2	0.0000	0.0000	Y	N	9/20/2011	3	Y	OD	N	Other	2	1	1000	LIP	N		36	36	
2761	46.2	76	0.0000	0.0000	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	N		3	2	
2762	47.2	65.6	0.0000	0.3281	Y	N	10/12/2011	2	Y	OD	N	Scrap Metal	2	2	3	LIP	N		5	2	
2763	274.5	371	0.5741	0.0000	Y	N	10/12/2011	3	Y	OD	N	Scrap Steel	3	1	20	LIP	N		42	2	
2764	7.6	30.2	0.1640	0.0820	Y	N	10/20/2011	4	Y	OD	N	Scrap Metal	4	5	1	LIP	N		36	36	
2765	4664.7	5000	0.1640	0.9843	Y	N	10/12/2011	34	Y	OD	N	Scrap Steel	34	1	400	LIP	N		200	26	
2766	18.7	18.9	0.4921	-0.4921	Y	N	10/12/2011	5	Y	OD	N	Scrap Metal	5	1	1	LIP	N		3	1	
2767	9.3	17.6	-0.3281	0.2461	Y	N	10/20/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		36	36	
2768	5.2	7.8	0.3281	0.9843	Y	N	10/12/2011	7	Y	OD	N	Pipe	7	1	1	LIP	N		4	1	
2769	20	44.1	-0.1378	-0.2461	Y	N	9/20/2011	8	Y	OD	N	Bolt	8	1	3	LIP	N		8	1	
2770	122	232	-0.0820	0.2461	Y	N	10/12/2011	3	Y	OD	N	Scrap Steel	3	1	20	LIP	N		42	2	
2771	193.2	402	0.2461	-0.1640	Y	N	10/12/2011	4	Y	OD	N	Pipe	4	1	15	LIP	N		22	2	
2772	9.3	10.8	0.1378	0.0000	Y	N	10/12/2011	3	Y	OD	N	Nails	3	3	0.45	LIP	N		4	0.1	
2773	32.8	333.5	0.4659	-0.9022	Y	N	10/12/2011	2	Y	OD	N	Scrap Steel	2	1	9	LIP	N		12	5	
2774	54.3	58.6	0.0000	0.0000	Y	N	10/12/2011	2	Y	OD	N	Pipe	2	1	2	LIP	N		8	0.75	
2775	14	26.6	0.0000	-0.1640	Y	N	10/20/2011	1	Y	OD	N	Wire	1	1	1	LIP	N		18	0.1	
2776	117	152	0.0000	0.0000	Y	Y											N				
2777	64.2	349.8	0.0000	-0.9843	Y	N	10/12/2011	1	Y	OD	N	Scrap Steel	1	1	23	LIP	N		18	7	
2778	45.3	120.2	-0.0820	-0.6562	Y	N	10/12/2011	6	Y	OD	N	Scrap Metal	6	1	8	LIP	N		6	5	
2779	28.4	108.2	0.0000	0.1640	Y	N	10/12/2011	5	Y	OD	N	Scrap Metal	5	3	4	LIP	N		6	2	
2780	6.7	36.4	-0.6562	0.6562	Y	N	10/12/2011	5	Y	OD	N	Scrap Metal	5	1	1	LIP	N		3	1	
2781	6.5	70.3	0.0820	0.9843	Y	N	10/12/2011	7	Y	OD	N	Scrap Metal	7	2	3	LIP	N		6	3	
2782	25.2	41.7	-0.1640	0.1640	Y	N	10/12/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	N		3	1	
2783	2967	3635	-0.3281	0.0820	Y	N	10/12/2011	26	Y	OD	N	Scrap Steel	26	1	400	LIP	N		200	25	
2784	23.7	44.3	0.0558	0.2461	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	4	2	LIP	N		1	1	
2785	18.6	177.6	0.2198	0.7119	Y	N	9/19/2011	2	Y	OD	N	Scrap Steel	2	1	2	LIP	N		8	1	
2786	86.7	145.2	0.0820	0.3018	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	2	6	LIP	N		8	4	
2787	30.8	44.7	0.0000	0.0000	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	5	5	LIP	N		2	2	
2788	35.8	35.6	0.0000	0.1640	Y	N	10/12/2011	6	Y	OD	N	Scrap Metal	6	2	2	LIP	N		5	2	
2789	35.3	56.2	0.1378	0.0820	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	4	3	LIP	N		1	1	
2790	25.9	27.4	0.0000	0.0000	Y	N	10/12/2011	6	Y	OD	N	Bolt	6	1	0.5	LIP	N		4	0.38	
2791	16.3	21.4	0.0820	-0.1640	Y	N	10/12/2011	7	Y	OD	N	Scrap Steel	7	1	1	LIP	N		3	1	
2792	27.3	68.3	0.1640	0.4364	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		4	4	
2793	18.2	69.8	-0.4199	-0.5184	Y	N	9/19/2011	4	Y	OD	N	Scrap Metal	4	3	4	LIP	N		4	4	
2794	10.8	71.4	0.4199	0.8760	Y	N	9/19/2011	4	Y	OD	N	Scrap Metal	4	6	5	LIP	N		1	1	
2795	9	14	0.0000	0.0000	Y	N	9/20/2011	0	Y	OD	N	Scrap Metal	0	1	1	LIP	N		1	1	
2796	186.8	249.5	0.0820	0.1378	Y	N	9/19/2011	3	Y	OD	N	Scrap Metal	3	1	15	LIP	Y	Y	16	5	
2797	280.4	465.6	0.0558	0.1640	Y	N	9/19/2011	8	Y	OD	N	Scrap Steel	8	1	15	LIP	N		10	4	
2798	92.2	151.3	-0.2198	-0.1378	Y	N	9/19/2011	3	Y	OD	N	Wire	3	1	0.1	LIP	N		18	0.2	
2799	45.5	58.2	0.1903	0.1378	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	1	5	LIP	N		4	4	
2800	22.8	85.6	-0.5741	-0.5741	Y	N	9/19/2011	4	Y	OD	N	Scrap Metal	4	2	2	LIP	N		1	1	
2801	57.5	80.5	0.1640	0.1378	Y	N	9/19/2011	8	Y	OD	N	Scrap Metal	8	1	2	LIP	N		2	2	
2802	24.2	64.1	0.1640	0.5184	Y	N	9/19/2011	8	Y	OD	N	Scrap Metal	8	1	5	LIP	N		6	5	
2803	370.5	4116	0.0000	0.7940	Y	N	9/19/2011	0	Y	OD	N	Scrap Steel	0	1	20	LIP	N		12	8	
2804	102.9	250.6	0.0000	0.0000	Y	N	9/19/2011	6	Y	OD	N	Scrap Metal	6	1	5	LIP	N	Y	10	4	
2805	39.6	57.6	0.0000	0.0000	Y	N	9/19/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		4	3	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
2806	46.2	81.8	0.0000	0.0000	Y	N	9/19/2011	5	Y	OD	N	Scrap Metal	5	1	5	LIP	Y	Y	3	4	
2807	70.7	100.9	0.0000	0.3281	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	1	6	LIP	N		12	4	
2808	37.8	56.4	-0.4921	-0.1640	Y	N	10/12/2011	8	Y	OD	N	Scrap Steel	8	1	1	LIP	N		6	0.75	
2809	25.1	51.8	0.1083	0.2198	Y	N	9/19/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		2	2	
2810	6.3	15.9	-0.1083	-0.4364	Y	N	9/19/2011	12	Y	OD	N	Scrap Metal	12	4	7	LIP	N		3	3	
2811	26.5	262.6	-0.1903	0.6004	Y	N	9/19/2011	4	Y	OD	N	Scrap Metal	4	1	20	LIP	N		18	5	
2812	25.8	41.8	0.0000	0.0000	Y	N	9/19/2011	12	Y	OD	N	Scrap Metal	12	4	4	LIP	N		2	2	
2813	17.1	45.2	0.0558	0.2461	Y	N	9/19/2011	3	Y	OD	N	Scrap Metal	3	1	3	LIP	N		4	2	
2814	89.9	176.1	0.0558	0.6299	Y	N	9/19/2011	8	Y	OD	N	Scrap Metal	8	1	5	LIP	N		8	6	
2815	12.2	27	0.1640	0.2198	Y	N	9/19/2011	8	Y	OD	N	Bolt	8	1	3	LIP	N		8	0.75	
2816	97.9	208.3	0.0000	0.5741	Y	N	9/19/2011	3	Y	OD	N	Scrap Metal	3	1	7	LIP	N		12	5	
2817	16.4	30.1	0.0000	0.0000	Y	N	9/19/2011	4	Y	OD	N	Scrap Metal	4	1	0.5	LIP	N		2	1	
2818	532.1	12127	0.0000	0.6562	Y	N	9/19/2011	0	Y	OD	N	Cable	0	1	30	LIP	N		120	0.5	
2819	51.1	80.9	0.9843	0.0000	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	5	5	LIP	N		2	2	
2820	39.4	88.8	0.0000	0.0000	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	6	4	LIP	N		1	1	
2821	26.3	73	0.1903	0.9580	Y	N	9/19/2011	6	Y	OD	N	Scrap Metal	6	1	4	LIP	N		4	4	
2822	1242.9	3090	0.0000	0.4921	Y	N	9/19/2011	0	Y	OD	N	Cable	0	1	30	LIP	N		120	0.5	
2823	22.6	91.4	-0.1640	-0.3281	Y	N	10/12/2011	7	Y	OD	N	Scrap Metal	7	5	4	LIP	N		4	2	
2824	18.1	80.9	0.2461	0.2198	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	2	3	LIP	N		1	1	
2825	5	18.2	0.0000	0.6562	Y	N	9/19/2011	8	Y	OD	N	Scrap Metal	8	1	3	LIP	N		2	2	
2826	60.8	82	-0.6562	0.0000	Y	N	10/12/2011	9	Y	OD	N	Chain	9	1	7	LIP	N		5	3	
2827	30.4	137.4	0.0000	0.9843	Y	N	9/19/2011	3	Y	OD	N	Scrap Metal	3	1	3	LIP	N		4	4	
2828	62.8	220	0.0000	0.0000	Y	N	10/12/2011	8	Y	OD	N	Scrap Steel	8	3	15	LIP	N		6	2	
2829	30.2	68	0.0820	0.4921	Y	N	9/19/2011	2	Y	OD	N	Scrap Steel	2	1	2	LIP	N		8	1	
2830	60.9	286.2	-0.3281	0.9022	Y	N	10/12/2011	4	Y	OD	N	Scrap Steel	4	2	16	LIP	N		6	3	
2831	37.1	78	0.0558	0.7382	Y	N	9/19/2011	3	Y	OD	N	Scrap Metal	3	3	14	LIP	Y	Y	8	6	
2832	67.8	167.1	0.0000	0.3281	Y	N	9/19/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	1	
2833	93.4	129	0.0000	0.1640	Y	N	10/12/2011	4	Y	OD	N	Scrap Steel	4	1	4	LIP	N		6	3	
2834	26.8	73.6	0.0000	0.6562	Y	N	9/19/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	1	
2835	10.8	43.5	0.1378	0.7644	Y	N	9/20/2011	5	Y	OD	N	Scrap Metal	5	1	1	LIP	N		1	1	
2836	79.2	139.8	0.0000	0.0000	Y	N	9/19/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	1	
2837	109.9	107.542	0.1378	0.4921	Y	N	9/19/2011	6	Y	OD	N	Scrap Metal	6	2	4	LIP	N		4	4	
2838	3710.7	11290	0.3281	0.0000	Y	Y											N				
2839	41.6	288.2	0.0558	0.8760	Y	N	9/19/2011	2	Y	OD	N	Scrap Steel	2	1	20	LIP	N		12	8	
2840	106.1	161.7	-0.0820	0.0000	Y	N	10/12/2011	7	Y	OD	N	Rebar	7	1	7	LIP	N		96	0.5	
2841	33.3	310.4	0.0000	0.0000	Y	N	10/12/2011	3	Y	OD	N	Scrap Steel	3	1	8	LIP	N		64	0.5	
2842	233.8	506	-0.4921	-0.3281	Y	N	10/12/2011	3	Y	OD	N	Scrap Steel	3	4	25	LIP	N		15	10	
2843	9.3	18.9	0.0000	0.5184	Y	N	9/19/2011	6	Y	OD	N	Scrap Metal	6	1	4	LIP	N		3	3	
2844	104	115.3	0.0000	0.0000	Y	N	9/19/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		2	2	
2844	104	115.3	0.0000	0.0000	Y	N	9/19/2011	4	Y	OD	N	Other	0	1	120	LIP	N		96	6	
2845	63.7	86	-0.3281	0.3281	Y	N	10/12/2011	48	Y	OD	N	Bolt	6	5	2	LIP	Y	Y	4	0.75	
2845	63.7	86	-0.3281	0.3281	Y	N	10/12/2011	48	Y	OD		Scrap Steel	48	1	40	LIP	Y	Y	72	0.75	
2846	67.1	228	0.3281	-0.3281	Y	N	10/12/2011	7	Y	OD	N	Rebar	7	1	4	LIP	N		36	0.45	
2847	38.9	96.6	-0.1640	-0.3281	Y	N	10/12/2011	6	Y	OD	N	Bolt	6	1	1	LIP	N		4	0.5	
2848	32.3	45.6	0.0000	0.0000	Y	N	10/12/2011	2	Y	OD	N	Scrap Steel	2	3	1	LIP	N		2	1	
2849	10.3	10.8	-0.6562	0.1378	Y	N	10/12/2011	3	Y	OD	N	Nails	3	2	0.3	LIP	N		2	0.1	
2850	14.6	75	0.3281	0.1640	Y	N	10/12/2011	1	Y	OD	N	Wire	1	1	1	LIP	N		56	0.1	
2851	12.4	2067	0.0820	0.9843	Y	Y											Y	Y			
2852	563.3	1812	0.0000	-0.1640	Y	N	10/12/2011	36	Y	OD	N	Fence Post	36	1	25	LIP	N		24	3	
2853	79.7	99.6	-0.9022	0.1083	Y	N	10/12/2011	9	Y	OD	N	Scrap Steel	9	3	6	LIP	N		4	3	
2854	5.5	5.4	0.1083	-0.1378	Y	N	10/12/2011	1	Y	OD	N	Nails	1	1	0.1	LIP	N		1	0.1	
2855	31.1	48.5	0.4921	0.0000	Y	N	10/12/2011	4	Y	OD	N	Nails	4	6	1	LIP	N		4	0.1	
2856	12	30.1	0.0000	0.3281	Y	N	10/12/2011	6	Y	OD	N	Nails	6	3	0.75	LIP	N		3	0.1	
2857	31.6	206.8	0.0820	0.3281	Y	N	10/12/2011	4	Y	OD	N	Scrap Steel	4	1	45	LIP	Y	Y	72	1	
2858	13.8	29.2	0.0000	0.0000	Y	N	10/12/2011	4	Y	OD	N	Nails	4	2	1	LIP	N		3	0.1	
2859	210.6	267	0.9843	-0.9843	Y	N	10/12/2011	8	Y	OD	N	Trash Pit	8	25	35	LIP	N		4	1	
2860	15.5	455	0.0000	0.5741	Y	N	9/19/2011	3	Y	OD	N	Nails	3	10	1	LIP	N		3	0.1	
2861	27.4	40.2	0.6562	-0.1640	Y	N	10/12/2011	6	Y	OD	N	Scrap Metal	6	2	1	LIP	N		3	1	
2862	211.9	406	0.0000	0.2461	Y	N	10/12/2011	9	Y	OD	N	Pipe	9	1	40	LIP	N		60	1	
2863	11.9	67.7	0.3281	0.7940	Y	N	9/19/2011	2	Y	OD	N	Scrap Steel	2	1	2	LIP	N		8	1	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
2864	41.7	75	0.0000	0.0000	Y	N	10/12/2011	2	Y	OD	N	Bolt	2	1	2	LIP	N		4	0.75	
2865	23.3	31	-0.1640	-0.1640	Y	N	10/12/2011	9	Y	OD	N	Scrap Metal	9	1	5	LIP	N		6	5	
2866	58.7	98.1	-0.9843	0.9843	Y	N	10/12/2011	8	Y	OD	N	Rebar	8	1	3	LIP	N		18	0.5	
2867	66.9	90.5	0.3281	-0.5741	Y	N	10/12/2011	6	Y	OD	N	Scrap Steel	6	1	5	LIP	N		9	0.75	
2868	89.1	134.8	0.3281	0.6562	Y	N	10/12/2011	7	Y	OD	N	Scrap Steel	7	1	7	LIP	N		30	0.75	
2869	9.1	14	0.0000	-0.2461	Y	N	10/12/2011	9	Y	OD	N	Scrap Metal	9	1	1	LIP	Y	Y	2	1	
2870	325	512.6	0.1378	-0.3281	Y	N	10/12/2011	5	Y	OD	N	Scrap Steel	5	2	25	LIP	N		40	1	
2871	32	46.5	0.0000	0.0000	Y	N	10/12/2011	7	Y	OD	N	Nails	7	5	1	LIP	N		3	0.1	
2872	23.3	25.6	0.1640	0.3281	Y	N	10/12/2011	7	Y	OD	N	Nails	7	1	1	LIP	N		3	0.1	
2873	24.8	71	0.1378	-0.4364	Y	N	10/12/2011	3	Y	OD	N	Wire	3	1	1	LIP	N		18	0.1	
2874	34.9	38.5	0.3281	0.5184	Y	N	9/19/2011	6	Y	OD	N	Scrap Metal	6	5	5	LIP	N		1	1	
2875	48	117.6	-0.2461	-0.2723	Y	N	9/19/2011	4	Y	OD	N	Scrap Metal	4	1	5	LIP	N		8	4	
2876	91.9	102.9	0.0000	0.0000	Y	N	9/19/2011	2	Y	OD	N	Scrap Metal	2	1	4	LIP	N		10	2	
2877	82	114.4	0.0000	0.0000	Y	N	9/19/2011	10	Y	OD	N	Scrap Metal	10	4	4	LIP	N		1	1	
2878	25.2	28.1	0.0820	0.1083	Y	N	9/19/2011	8	Y	OD	N	Scrap Metal	8	5	5	LIP	N		1	1	
2879	32.1	36.2	0.0820	0.0558	Y	N	9/20/2011	8	Y	OD	N	Scrap Metal	8	2	5	LIP	N		2	2	
2880	6.1	72.4	0.1903	0.9843	Y	N	9/20/2011	5	Y	OD	N	Scrap Metal	5	1	5	LIP	N		7	6	
2881	13.2	48.7	0.0000	0.5184	Y	N	9/16/2011	3	Y	OD	N	Scrap Steel	3	1	0.75	LIP	N		6	1	
2882	57.7	107.2	0.0558	0.8465	Y	N	9/20/2011	5	Y	OD	N	Scrap Metal	5	3	5	LIP	N		2	2	
2883	79.4	130.6	0.0000	0.0000	Y	N	9/19/2011	5	Y	OD	N	Scrap Metal	5	1	2	LIP	N		3	2	
2884	28.5	206.3	0.6562	0.8465	Y	N	9/19/2011	5	Y	OD	N	Scrap Steel	5	1	4	LIP	N		12	1	
2885	33.5	72.2	0.0000	0.0000	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	2	2	LIP	N		1	1	
2886	25.2	120.4	0.0820	0.7940	Y	N	9/19/2011	6	Y	OD	N	Scrap Metal	6	8	5	LIP	N		1	1	
2887	118.2	166	0.0000	0.0000	Y	N	9/19/2011	2	Y	OD	N	Scrap Steel	2	1	2	LIP	N		8	1	
2888	101.2	181.5	0.0000	0.0000	Y	N	9/20/2011	12	Y	OD	N	Scrap Metal	12	10	15	LIP	N		2	2	
2889	366.6	590	0.2461	0.0558	Y	N	9/20/2011	12	Y	OD	N	Scrap Steel	8	3	6	LIP	N		8	1	
2889	366.6	590	0.2461	0.0558	Y	N	9/20/2011	12	Y	OD	N	Scrap Metal	12	15	15	LIP	N		2	2	
2890	209.8	484	0.4101	0.6562	Y	N	9/19/2011	6	Y	OD	N	Scrap Metal	4	1	2	LIP	Y	Y	2	2	
2890	209.8	484	0.4101	0.6562	Y	N	9/19/2011	6	Y	OD		Scrap Steel	6	3	25	LIP	Y	Y	8	8	
2891	163.1	814	0.0558	0.9843	Y	N	9/20/2011	12	Y	OD	N	Scrap Steel	4	8	16	LIP	N		8	1	
2891	163.1	814	0.0558	0.9843	Y	N	9/20/2011	12	Y	OD	N	Scrap Metal	12	5	5	LIP	N		2	2	
2892	23.4	54.9	0.0000	0.0000	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	3	4	LIP	N		1	1	
2893	423.4	741.6	0.1903	0.0558	Y	N	9/20/2011	12	Y	OD	N	Scrap Steel	4	10	20	LIP	Y	Y	8	1	
2893	423.4	741.6	0.1903	0.0558	Y	N	9/20/2011	12	Y	OD	N	Scrap Metal	12	5	5	LIP	Y	Y	1	1	
2894	12.2	73.1	0.0000	0.7612	Y	N	9/19/2011	4	Y	OD	N	Nails	4	1	0.2	LIP	N		6	0.1	
2895	92.6	412.8	0.0820	0.4101	Y	N	9/19/2011	6	Y	OD	N	Scrap Metal	6	1	10	LIP	N		14	5	
2896	81.4	1199	0.0000	0.9022	Y	N	9/19/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	1	
2896	81.4	1199	0.0000	0.9022	Y	N	9/19/2011	4	Y	OD		Scrap Steel	4	1	20	LIP	N		12	8	
2897	13.6	24.2	0.0000	0.0000	Y	N	9/19/2011	3	Y	OD	N	Scrap Metal	3	1	1	LIP	N		1	1	
2898	32.7	57.1	0.7940	0.0558	Y	N	9/19/2011	2	Y	OD	N	Scrap Steel	2	1	2	LIP	N		8	1	
2899	7.2	24.9	0.0000	0.0000	Y	N	9/19/2011	3	Y	OD	N	Scrap Metal	3	1	1	LIP	N		3	2	
2900	80.5	134.2	0.0820	0.3281	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		8	2	
2901	20.4	37.8	-0.3281	-0.4364	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	5	5	LIP	N		1	1	
2902	15.5	77.2	0.0000	0.3281	Y	N	9/19/2011	3	Y	OD	N	Scrap Steel	3	1	0.25	LIP	N		6	0.25	
2903	74.1	94.2	0.0000	0.0000	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	3	5	LIP	N		2	2	
2904	123	184	0.0000	0.0000	Y	N	9/20/2011	12	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	1	
2904	123	184	0.0000	0.0000	Y	N	9/20/2011	12	Y	OD	N	Scrap Metal	12	10	20	LIP	N		2	2	
2905	16.8	30.5	0.0000	0.0000	Y	N	9/19/2011	8	Y	OD	N	Scrap Metal	8	2	4	LIP	N		3	2	
2906	59.6	129.4	-0.1903	-0.3281	Y	N	9/19/2011	4	Y	OD	N	Scrap Steel	4	4	0.2	LIP	N		3	1	
2907	80	122.9	0.1640	0.2723	Y	N	9/20/2011	6	Y	OD	N	Scrap Metal	6	2	10	LIP	N		8	4	
2908	27.2	56.7	0.0558	0.4364	Y	N	9/19/2011	8	Y	OD	N	Scrap Metal	8	1	6	LIP	N		5	5	
2909	2014.5	3232	0.9843	-0.3281	Y	Y											N				
2910	37	75	0.0820	0.5184	Y	N	9/20/2011	2	Y	OD	N	Scrap Metal	2	2	3	LIP	N		1	1	
2911	409.8	1634.6	0.0820	-0.9285	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	2	3	LIP	N		1	1	
2912	37.5	61	0.0000	0.0000	Y	N	9/19/2011	6	Y	OD	N	Scrap Metal	6	1	5	LIP	N		3	3	
2913	17	126.8	0.0000	0.4101	Y	N	9/19/2011	2	Y	OD	N	Scrap Steel	2	1	2	LIP	N		8	1	
2914	70.8	144	-0.1640	-0.4364	Y	N	9/20/2011	8	Y	OD	N	Scrap Metal	8	6	8	LIP	N		2	2	
2915	154.3	560	-0.1378	-0.5184	Y	N	9/19/2011	4	Y	OD	N	Scrap Steel	4	1	6	LIP	N		18	3	
2916	18.2	125.6	0.6562	0.6004	Y	N	9/19/2011	6	Y	OD	N	Scrap Metal	6	1	4	LIP	N		4	4	
2917	53.6	112.5	0.4199	0.8760	Y	N	9/19/2011	5	Y	OD	N	Scrap Metal	5	1	6	LIP	N		8	6	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
2918	18	62.3	-0.0558	0.3018	Y	N	9/19/2011	3	Y	OD	N	Scrap Steel	3	1	0.25	LIP	N		8	0.25	
2918	18	62.3	-0.0558	0.3018	Y	N	9/19/2011	3	Y	OD	N	Scrap Steel	2	1	2	LIP	N		8	1	
2919	75.8	96.7	0.0000	0.0000	Y	N	9/20/2011	8	Y	OD	N	Scrap Metal	8	4	9	LIP	N		3	3	
2920	42.8	165.5	0.0000	0.4101	Y	N	9/19/2011	4	Y	OD	N	Scrap Metal	4	1	6	LIP	N		15	4	
2921	34.1	62.7	0.0000	0.0000	Y	N	9/20/2011	8	Y	OD	N	Scrap Metal	8	3	9	LIP	N		3	3	
2922	16.5	32.7	0.0558	0.4921	Y	N	9/20/2011	8	Y	OD	N	Scrap Metal	8	1	1	LIP	N		1	1	
2923	52.1	581.8	0.7382	0.8760	Y	N	9/20/2011	3	Y	OD	N	Other	3	1	1000	LIP	N		36	36	
2924	5	18.9	0.0000	0.0000	Y	N	9/19/2011	4	Y	OD		Scrap Metal	4	2	2	LIP	Y	Y	1	1	
2925	24.7	34.6	0.0000	0.0000	Y	N	9/19/2011	5	Y	OD	N	Scrap Metal	5	1	3	LIP	Y	Y	4	4	
2925	24.7	34.6	0.0000	0.0000	Y	N	9/19/2011	5	Y	OD		Scrap Steel	4	1	2	LIP	Y	Y	8	1	
2926	22.7	78.8	-0.1378	-0.7808	Y	N	9/19/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		4	3	
2927	14.5	22.6	0.0820	0.2461	Y	N	9/19/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		3	2	
2928	29.7	48.2	0.0000	0.4199	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	3	4	LIP	N		2	2	
2929	29.2	116.7	0.1903	0.1640	Y	N	9/20/2011	4	Y	OD	N	Scrap Metal	4	2	3	LIP	N		1	1	
2930	13.5	16.8	0.0000	0.0000	Y	N	9/19/2011	8	Y	OD	N	Scrap Metal	8	1	4	LIP	N		3	3	
2931	19.9	72.5	-0.0558	-0.5184	Y	N	9/19/2011	4	Y	OD	N	Scrap Metal	4	3	3	LIP	N		1	1	
2932	158	193.2	0.0000	0.0000	Y	N	9/20/2011	2	Y	OD	N	Scrap Metal	2	2	15	LIP	N		12	6	
2933	20.9	30.8	-0.1640	-0.1903	Y	N	9/19/2011	3	Y	OD	N	Scrap Metal	3	1	0.5	LIP	N		1	1	
2934	96.2	134	0.0820	0.1083	Y	N	9/19/2011	5	Y	OD	N	Scrap Metal	5	5	5	LIP	N		1	1	
2935	16.2	28	0.9843	0.0000	Y	N	10/12/2011	5	Y	OD	N	Bolt	5	1	3	LIP	N		4	0.75	
2936	759.6	880.5	0.4199	0.2461	Y	N	9/20/2011	12	Y	OD	N	Scrap Steel	2	1	20	LIP	N		12	8	
2936	759.6	880.5	0.4199	0.2461	Y	N	9/20/2011	12	Y	OD	N	Scrap Metal	12	10	20	LIP	N		6	4	
2937	21.6	53.4	-0.1640	0.0000	Y	N	9/20/2011	5	Y	OD	N	Scrap Metal	5	5	4	LIP	N		1	1	
2938	10	21.6	0.4199	0.6562	Y	N	9/19/2011	4	Y	OD	N	Wire	4	3	0.2	LIP	N		12	0.01	
2939	6.3	17.2	0.0000	0.0000	Y	N	9/19/2011	8	Y	OD	N	Scrap Metal	8	1	4	LIP	N		4	4	
2940	74	124.1	-0.2198	-0.4199	Y	N	9/19/2011	8	Y	OD	N	Scrap Metal	8	2	9	LIP	N		8	8	
2941	13.7	50.9	0.3281	0.3018	Y	N	9/19/2011	3	Y	OD	N	Scrap Steel	3	1	0.2	LIP	N		4	0.25	
2942	82.8	180.1	0.0000	0.0000	Y	N	9/20/2011	8	Y	OD	N	Scrap Metal	8	3	10	LIP	N		6	5	
2943	55.2	90.5	0.0000	0.0000	Y	N	9/19/2011	5	Y	OD	N	Scrap Metal	5	1	5	LIP	N		6	6	
2944	43.6	45	0.4101	0.3281	Y	N	10/12/2011	5	Y	OD	N	Scrap Metal	5	2	2	LIP	N		3	1	
2945	44	61.5	0.0000	-0.1903	Y	N	10/12/2011	8	Y	OD	N	Scrap Metal	8	1	5	LIP	N		5	3	
2946	27.5	91	-0.0820	0.2461	Y	N	10/12/2011	1	Y	OD	N	Nails	1	5	1	LIP	N		4	0.1	
2947	12.2	31.6	0.3281	-0.6299	Y	N	10/12/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		9	1	
2948	91	148.3	-0.4364	-0.4921	Y	N	10/12/2011	4	Y	OD	N	Rebar	4	2	2	LIP	N		15	0.7	
2949	146.2	331.3	-0.9843	0.9022	Y	N	10/12/2011	3	Y	OD	N	Wire	3	7	2	LIP	N		110	0.1	
2950	27.4	90.2	-0.4921	-0.3281	Y	N	10/12/2011	6	Y	OD	N	Scrap Steel	6	1	3	LIP	N		14	1	
2951	43.9	48.1	-0.9843	0.0000	Y	N	10/12/2011	6	Y	OD	N	Scrap Steel	6	1	3	LIP	N		14	1	
2952	6.3	1.4	0.0000	0.0000	N	N	10/12/2011	3	Y	OD	N	Wire	3	1	0.1	LIP	N		1	0.1	
2953	205	865	-0.2461	-0.3281	Y	N	10/12/2011	1	Y	OD	N	Wire	1	3	4	LIP	N		130	0.1	
2954	34.3	90.8	0.0000	-0.4101	Y	N	9/16/2011	12	Y	OD	N	Scrap Metal	12	1	6	LIP	N		10	4	
2955	33.7	38	0.0000	0.2723	Y	N	9/16/2011	4	Y	OD	N	Scrap Metal	4	2	4	LIP	N		2	2	
2956	75.4	285	0.1640	-0.5741	Y	N	10/12/2011	4	Y	OD	N	Wire	4	7	3	LIP	Y	Y	75	0.1	
2957	19.6	32.3	0.0000	-0.3281	Y	N	10/12/2011	5	Y	OD	N	Scrap Metal	5	1	2	LIP	N		4	3	
2958	9.1	61.1	0.0000	0.9285	Y	N	9/16/2011	6	Y	OD	N	Scrap Metal	6	1	4	LIP	N		4	4	
2959	23.5	137.5	-0.1640	0.6562	Y	N	10/12/2011	8	Y	OD	N	Scrap Metal	8	5	7	LIP	N		6	4	
2960	46.2	53.8	0.1640	0.2198	Y	N	9/16/2011	6	Y	OD	N	Scrap Metal	6	1	4	LIP	N		7	4	
2961	19.9	19	0.0000	0.0000	Y	N	9/16/2011	8	Y	OD	N	Scrap Metal	8	2	7	LIP	N		4	4	
2962	40.9	51.4	0.3281	0.0820	Y	N	9/16/2011	8	Y	OD	N	Scrap Metal	8	1	8	LIP	N		6	6	
2963	37.2	52.5	0.1903	0.5184	Y	N	9/16/2011	10	Y	OD	N	Scrap Metal	6	3	4	LIP	N		1	1	
2963	37.2	52.5	0.1903	0.5184	Y	N	9/16/2011	10	Y	OD	N	Scrap Metal	10	3	5	LIP	N		2	2	
2964	42.2	49.6	0.2461	0.0000	Y	N	9/16/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		6	4	
2965	34.3	54.7	0.4921	0.3281	Y	N	9/16/2011	2	Y	OD	N	Other	2	1	2000	LIP	N		36	36	
2966	18.3	36.2	0.0000	-0.5184	Y	N	9/16/2011	3	Y	OD	N	Scrap Metal	3	1	3	LIP	N		4	3	
2967	11.4	18.1	0.0000	0.0000	Y	N	9/16/2011	6	Y	OD	N	Scrap Metal	6	2	4	LIP	N		2	2	
2968	47.9	56.1	0.0000	0.0000	Y	N	9/16/2011	12	Y	OD	N	Scrap Metal	12	3	5	LIP	N		2	2	
2969	66.3	84.8	0.0000	0.3281	Y	N	9/16/2011	8	Y	OD	N	Scrap Metal	8	3	6	LIP	N		3	4	
2970	18.1	22.9	0.1378	0.0000	Y	N	9/16/2011	4	Y	OD	N	Scrap Metal	4	3	6	LIP	N		2	2	
2971	1160.5	1272	0.0000	0.0000	Y	N	10/12/2011	38	Y	OD	N	Pipe	38	1	100	LIP	N		65	4	
2972	11.5	13.7	0.0000	-0.3281	Y	N	9/16/2011	2	Y	OD	N	Scrap Metal	2	1	2	LIP	N		2	2	
2973	83	171.3	0.0000	0.4101	Y	N	9/16/2011	4	Y	OD	N	Bolt	4	1	3	LIP	N		10	0.75	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
2974	87.7	221.8	0.0000	0.4364	Y	N	9/16/2011	6	Y	OD	N	Scrap Metal	6	1	5	LIP	N		7	5	
2975	95.4	120	0.2198	0.0000	Y	N	9/16/2011	3	Y	OD	N	Scrap Metal	3	1	4	LIP	N		10	3	
2976	123.7	212.8	0.0000	0.0000	Y	N	9/16/2011	12	Y	OD	N	Scrap Metal	12	15	15	LIP	N		2	2	
2977	56.2	209	0.5184	0.5741	Y	N	9/16/2011	8	Y	OD	N	Scrap Metal	8	15	20	LIP	N		2	2	
2978	13	70.2	0.2461	0.3281	Y	N	9/16/2011	2	Y	OD	N	Other	2	1	1000	LIP	N		36	36	
2979	23.2	195	0.0558	0.4364	Y	N	9/16/2011	6	Y	OD	N	Scrap Metal	6	15	20	LIP	N		2	2	
2980	16.4	50.2	0.4364	0.5184	Y	N	9/19/2011	8	Y	OD	N	Scrap Metal	8	3	5	LIP	N		8	6	
2981	27.7	76.7	0.0000	0.0000	Y	N	9/19/2011	2	Y	OD	N	Scrap Steel	2	1	0.5	LIP	N		8	0.25	
2982	48.1	96.6	0.4364	0.5184	Y	N	9/16/2011	3	Y	OD	N	Scrap Metal	3	1	8	LIP	N		10	4	
2983	69.5	84.1	0.0000	-0.2461	Y	N	9/16/2011	4	Y	OD	N	Scrap Metal	4	1	6	LIP	N		8	3	
2984	1223.3	2467	0.0000	0.0000	Y	Y	9/16/2011	0	Y	OD	N	Other	0	1	1000	LIP	N		288	288	
2985	60.9	98.2	0.0000	0.0000	Y	N	9/16/2011	6	Y	OD	N	Scrap Metal	6	4	5	LIP	N		1	1	
2986	9677.8	11880	0.0000	0.0000	Y	Y	9/16/2011	0	Y	OD	N	Other	0	1	1000	LIP	N		288	288	
2987	3312	9834	0.0000	0.0000	Y	Y	9/16/2011	0	Y	OD	N	Other	0	1	1000	LIP	N		288	288	
2988	48.3	60.2	0.0000	0.2461	Y	N	9/16/2011	12	Y	OD	N	Scrap Metal	12	3	4	LIP	Y	Y	2	1	
2989	91.1	191.2	0.1378	0.5741	Y	N	9/16/2011	2	Y	OD	N	Other	2	1	1000	LIP	N		36	36	
2990	22.3	86.7	0.2198	0.9285	Y	N	9/16/2011	4	Y	OD	N	Scrap Metal	4	2	5	LIP	N		3	3	
2991	25.3	41.6	0.0000	0.2198	Y	N	9/16/2011	8	Y	OD	N	Scrap Metal	8	1	3	LIP	N		4	3	
2992	59.1	273.5	-0.3281	-0.6562	Y	N	9/16/2011	4	Y	OD	N	Other	4	1	1000	LIP	N		36	36	
2993	181.6	295.5	0.1378	0.0000	Y	N	9/16/2011	12	Y	OD	N	Scrap Steel	6	1	2	LIP	N		8	1	
2993	181.6	295.5	0.1378	0.0000	Y	N	9/16/2011	12	Y	OD	N	Scrap Metal	12	5	5	LIP	N		1	1	
2994	34.1	102	0.5184	0.5741	Y	N	9/16/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		4	4	
2995	30.1	65	0.4364	0.2198	Y	N	9/16/2011	3	Y	OD	N	Scrap Steel	3	1	0.5	LIP	N		8	0.25	
2996	35.2	51.4	0.0558	0.1083	Y	N	9/19/2011	6	Y	OD	N	Scrap Metal	6	2	2	LIP	N		2	2	
2997	31.5	100.4	0.2723	0.6562	Y	N	9/19/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		6	2	
2998	12.3	52.6	0.0000	-0.4101	Y	N	9/16/2011	5	Y	OD	N	Scrap Metal	5	1	2	LIP	N		3	2	
2999	67.3	151	0.0000	0.2198	Y	N	9/16/2011	8	Y	OD	N	Scrap Steel	8	1	2	LIP	N		8	1	
3000	29.6	243	0.3281	0.9843	Y	N	9/19/2011	10	Y	OD	N	Scrap Metal	10	3	5	LIP	N		2	2	
3001	5.9	14.1	0.0000	0.0000	Y	N	9/16/2011	8	Y	OD	N	Scrap Metal	8	3	3	LIP	N		1	1	
3002	162.8	420.6	0.0000	0.0000	Y	N	9/16/2011	12	Y	OD	N	Scrap Metal	12	15	20	LIP	Y	Y	2	2	
3003	19.1	48.4	0.6004	0.9843	Y	N	9/19/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		4	4	
3004	14.7	84	0.4101	0.7940	Y	N	9/19/2011	2	Y	OD	N	Scrap Steel	2	1	2	LIP	N		8	1	
3005	5.5	17.6	0.0820	0.1378	Y	N	9/19/2011	4	Y	OD	N	Scrap Metal	4	5	5	LIP	N		2	2	
3006	63	111.8	0.0000	0.0000	Y	N	9/19/2011	2	Y	OD	N	Scrap Steel	2	1	2	LIP	N		8	1	
3007	7.4	77	0.1083	0.6299	Y	N	9/16/2011	6	Y	OD	N	Scrap Metal	6	1	5	LIP	Y	Y	7	6	
3008	56.3	143.3	0.3018	0.0000	Y	N	9/16/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		2	2	
3009	156.6	284	0.2461	0.1640	Y	N	9/16/2011	4	Y	OD	N	Scrap Steel	4	1	4	LIP	N		24	0.75	
3010	9.5	22.4	0.0000	0.1640	Y	N	9/19/2011	2	Y	OD	N	Scrap Metal	2	1	1	LIP	N		1	1	
3011	17.4	182	-0.7382	-0.0820	Y	N	9/16/2011	4	Y	OD	N	Scrap Metal	4	3	3	LIP	N		1	1	
3012	14.5	71.6	0.0000	0.0000	Y	N	9/19/2011	0	Y	OD	N	Scrap Metal	0	1	3	LIP	N		3	4	
3013	63.4	122.3	0.0000	0.0000	Y	N	9/19/2011	3	Y	OD	N	Scrap Steel	3	1	2	LIP	N		8	1	
3014	7.7	16	0.0000	0.0000	Y	N	10/12/2011	3	Y	OD	N	Nails	3	3	0.5	LIP	N		2	0.1	
3015	40.9	55.4	0.1903	0.1083	Y	N	9/19/2011	3	Y	OD	N	Scrap Metal	3	3	2	LIP	N		1	1	
3016	56.1	368	0.3281	0.5184	Y	N	9/19/2011	3	Y	OD	N	Bolt	3	1	1	LIP	N		4	0.75	
3017	25	45.3	-0.1640	0.0000	Y	N	10/12/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		12	1	
3018	18	20.2	0.1640	-0.1640	Y	N	10/12/2011	6	Y	OD	N	Scrap Steel	6	1	2	LIP	N		12	1	
3019	54.2	362	0.0000	0.9285	Y	N	9/19/2011	0	Y	OD	N	Scrap Steel	0	1	0.5	LIP	N		1	1	
3020	9.6	69.5	0.0000	-0.3281	Y	N	10/12/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	N		5	4	
3021	39.2	51.4	-0.0820	0.0558	Y	N	10/12/2011	6	Y	OD	N	Pipe	6	1	6	LIP	N		9	4	
3022	82.3	125	0.3281	0.0000	Y	N	10/12/2011	7	Y	OD	N	Scrap Steel	7	5	4	LIP	N		6	1	
3023	38.3	52.2	-0.1640	0.3281	Y	N	10/12/2011	6	Y	OD	N	Scrap Steel	6	20	4	LIP	N		4	1	
3024	156.4	244	0.0000	0.0000	Y	N	10/12/2011	7	Y	OD	N	Scrap Steel	7	18	6	LIP	N		4	1	
3025	15.8	25.2	0.0000	0.0000	Y	N	10/12/2011	4	Y	OD	N	Scrap Steel	4	1	0.5	LIP	N		3	1	
3026	125.7	194.6	0.0000	0.0000	Y	N	10/12/2011	7	Y	OD	N	Scrap Metal	7	1	6	LIP	N		11	3	
3027	29.7	56.6	0.0000	0.0000	Y	N	9/15/2011	8	Y	OD	N	Scrap Metal	8	4	5	LIP	N		1	1	
3028	26.2	62.8	0.0000	0.6562	Y	N	9/15/2011	6	Y	OD	N	Scrap Steel	6	1	1	LIP	N		2	2	
3029	49.3	202.7	0.0000	0.0000	Y	Y											N				
3030	25	53.5	0.0000	0.0000	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	5	5	LIP	N		1	1	
3031	67.4	106.8	0.1378	0.0000	Y	N	9/15/2011	6	Y	OD	N	Scrap Metal	6	1	4	LIP	N		6	4	
3032	18.5	126.2	0.0000	-0.7119	Y	N	9/15/2011	8	Y	OD	N	Scrap Metal	8	1	2	LIP	N		7	4	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
3033	85.9	130	0.1083	0.2198	Y	N	9/15/2011	8	Y	OD	N	Scrap Steel	6	1	2	LIP	N		8	1	
3033	85.9	130	0.1083	0.2198	Y	N	9/15/2011	8	Y	OD	N	Scrap Steel	8	1	2	LIP	N		8	1	
3034	50.6	80.9	0.0000	0.3018	Y	N	9/15/2011	6	Y	OD	N	Other	6	1	1000	LIP	N		36	36	
3035	151.5	254	-0.2198	0.1378	Y	N	9/15/2011	2	Y	OD	N	Scrap Steel	2	1	2	LIP	N		8	1	
3036	60.7	84.7	0.0000	0.0000	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	5	5	LIP	N		1	1	
3037	52.9	92.1	0.0000	0.0000	Y	N	9/15/2011	10	Y	OD	N	Scrap Steel	10	1	2	LIP	Y	Y	4	1	
3037	52.9	92.1	0.0000	0.0000	Y	N	9/15/2011	10	Y	OD	N	Scrap Metal	10	1	5	LIP	Y	Y	4	4	
3038	68.7	106.8	0.0000	0.0000	Y	N	9/15/2011	5	Y	OD	N	Scrap Metal	5	1	6	LIP	N		8	4	
3039	230.3	10414	0.0000	0.9843	Y	Y											N				
3040	61.7	80.1	0.0000	0.0000	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	1	5	LIP	N		6	3	
3041	11.6	35.6	0.0000	0.2461	Y	N	9/15/2011	2	Y	OD	N	Scrap Steel	2	1	50	LIP	N		250	0.5	
3042	78.4	124.3	0.3281	0.3281	Y	N	9/15/2011	12	Y	OD	N	Bolt	4	1	1	LIP	N		6	0.5	
3042	78.4	124.3	0.3281	0.3281	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	5	5	LIP	N		1	1	
3043	21.9	51.3	0.0000	0.4101	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	5	5	LIP	N		1	1	
3044	330.4	541.9	0.0000	0.0000	Y	N	9/15/2011	4	Y	OD	N	Scrap Metal	4	1	15	LIP	N		8	4	
3045	92.9	125	0.0000	0.0000	Y	N	9/15/2011	6	Y	OD	N	Scrap Steel	6	1	2	LIP	N		8	1	
3046	13.9	158.2	0.0000	0.6299	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	1	5	LIP	N		1	1	
3047	10.3	50.3	0.1640	0.6004	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	5	5	LIP	N		1	1	
3048	9.8	82.9	0.9022	0.0000	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	7	6	LIP	N		1	1	
3049	18.9	31.7	0.0000	0.0000	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	4	3	LIP	Y	Y	1	1	
3050	7.6	14.4	0.0000	0.0000	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	6	5	LIP	N		1	1	
3051	21.2	34.5	0.3018	-0.2461	Y	N	9/15/2011	3	Y	OD	N	Scrap Steel	3	1	1	LIP	N		6	2	
3052	38.4	103.7	0.0000	0.5741	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	6	4	LIP	N		1	1	
3052	38.4	103.7	0.0000	0.5741	Y	N	9/15/2011	12	Y	OD	N	Scrap Steel	4	1	0.5	LIP	N		8	0.5	
3053	38.2	54.5	0.0000	0.0000	Y	N	9/15/2011	6	Y	OD	N	Scrap Steel	6	1	4	LIP	N		3	2	
3054	33.8	123.4	0.4101	0.8760	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	4	5	LIP	N		1	1	
3055	16.9	27.2	0.0000	0.4101	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	7	5	LIP	N		1	1	
3056	40.2	115.2	0.0000	0.4921	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	5	5	LIP	N		1	1	
3057	10.8	37.4	0.0000	0.6299	Y	N	9/15/2011	4	Y	OD		Other	4	1	2000	LIP	N		72	72	
3058	15.7	37.4	0.0000	0.0000	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	5	5	LIP	N		1	1	
3059	18	121.6	0.2198	0.4101	Y	N	9/15/2011	2	Y	OD	N	Scrap Steel	2	1	4	LIP	N		4	0.25	
3060	33.7	46.4	0.0000	0.2723	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	5	5	LIP	N		1	1	
3061	19.2	32.7	0.0000	0.4921	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	3	4	LIP	N		1	1	
3062	15.4	35.6	0.0000	0.8760	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	1	5	LIP	N		1	1	
3063	12.9	50	0.0000	-0.4101	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	5	5	LIP	N		1	1	
3064	57.8	98.6	0.0000	0.0919	Y	N	9/15/2011	6	Y	OD	N	Scrap Metal	6	1	5	LIP	N		4	4	
3065	14.3	60.8	-0.4101	0.6562	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	5	5	LIP	N		1	1	
3066	95.3	120.8	0.0000	0.1903	Y	N	9/15/2011	4	Y	OD	N	Scrap Metal	4	1	5	LIP	N		4	4	
3067	24.1	41.4	0.0000	0.1640	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	4	5	LIP	N		1	1	
3068	10.4	66.9	0.0000	0.4101	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	3	4	LIP	N		1	1	
3069	40.2	206.2	0.0000	0.5741	Y	N	9/15/2011	3	Y	OD	N	Scrap Steel	3	1	4	LIP	N		3	3	
3070	73.5	99.8	0.0000	0.6562	Y	N	9/15/2011	6	Y	OD	Y	Scrap Metal	6	1	4	LIP	N		4	3	
3071	115.7	171.5	0.0000	0.0000	Y	N	9/15/2011	3	Y	OD	N	Scrap Metal	3	1	7	LIP	N		4	5	
3072	55.1	124	0.0820	0.1640	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	5	5	LIP	N		1	1	
3073	47.2	299.2	0.6562	0.9022	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	6	5	LIP	N		1	1	
3074	31.4	63.5	0.0000	0.5184	Y	N	9/15/2011	8	Y	OD	N	Scrap Metal	8	1	5	LIP	N		4	1	
3075	66.4	112.9	0.0000	0.1903	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	5	5	LIP	N		1	1	
3076	21.6	89.4	0.0000	0.4101	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	5	5	LIP	N		1	1	
3077	17.6	96.6	0.0000	0.9843	Y	N	9/15/2011	33	Y	OD	N	Scrap Metal	33	3	2	LIP	N		1	1	
3078	89.5	111.2	0.0000	0.1903	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	5	5	LIP	N		1	1	
3078	89.5	111.2	0.0000	0.1903	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	3	3	LIP	N		1	1	
3079	88.9	93.4	0.9843	-0.3281	Y	N	10/12/2011	6	Y	OD	N	Scrap Steel	6	2	2	LIP	Y	Y	8	1	
3080	17.8	50.4	0.2461	0.3281	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	4	4	LIP	N		1	1	
3081	101.7	228.8	0.0000	-0.4232	Y	N	9/15/2011	6	Y	OD	N	Scrap Steel	2	2	4	LIP	Y	Y	8	1	
3081	101.7	228.8	0.0000	-0.4232	Y	N	9/15/2011	6	Y	OD		Scrap Metal	6	25	25	LIP	Y	Y	3	3	
3082	15.4	41.9	0.0000	0.5184	Y	N	9/15/2011	3	Y	OD	N	Scrap Steel	3	1	1	LIP	N		12	0.5	
3083	26.7	79.5	0.0000	0.4364	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	3	5	LIP	N		1	1	
3084	46.5	500.4	0.0000	0.7940	Y	N	9/15/2011	8	Y	OD	N	Scrap Steel	8	1	8	LIP	N		6	4	
3085	1134.2	1541	0.0000	0.2723	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	4	3	LIP	N		1	1	
3085	1134.2	1541	0.0000	0.2723	Y	N	9/15/2011	12	Y	OD	N	Scrap Steel	12	1	10	LIP	N		16	1	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
3086	20.7	56.7	0.1378	0.0000	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	6	5	LIP	N		1	1	
3087	33.4	180.4	0.6299	0.8760	Y	N	9/15/2011	6	Y	OD	N	Scrap Steel	6	1	2	LIP	N		36	0.5	
3088	11.9	92.7	0.9843	-0.4921	Y	N	9/15/2011	12	Y	OD	N	Scrap Steel	12	2	5	LIP	N		144	0.5	
3089	240.5	262	0.4199	0.0000	Y	N	9/15/2011	6	Y	OD	N	Scrap Metal	6	1	10	LIP	N		8	5	
3090	39.2	102	0.6562	0.0000	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	5	5	LIP	N		1	1	
3091	264.4	1110	0.0000	0.8465	Y	N	9/15/2011	6	Y	OD	N	Scrap Steel	6	1	20	LIP	N		12	8	
3092	60.8	90.7	0.0000	0.2723	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	8	8	LIP	N		1	1	
3093	18.4	74.3	0.0000	0.0000	Y	N	9/15/2011	2	Y	OD	N	Scrap Steel	2	1	2	LIP	N		8	1	
3094	97.5	151.6	-0.1378	0.2723	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	7	7	LIP	N		1	1	
3095	10.2	73.6	0.2198	0.9843	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	3	3	LIP	N		1	1	
3096	16.6	42.4	0.1640	0.1640	Y	N	10/12/2011	9	Y	OD	N	Scrap Metal	9	2	2	LIP	N		9	1	
3097	59.9	716	0.0000	0.8760	Y	N	9/15/2011	2	Y	OD	N	Scrap Steel	2	1	20	LIP	N		12	8	
3098	108.9	175.4	0.1640	0.2198	Y	N	9/15/2011	4	Y	OD	N	Scrap Metal	4	2	8	LIP	Y	Y	4	4	
3099	29.8	47.5	-0.9843	-0.9843	Y	N	10/12/2011	2	Y	OD	N	Nails	2	3	2	LIP	N		4	0.1	
3100	55.4	1232	-0.3018	-0.8465	Y	N	9/15/2011	8	Y	OD	N	Scrap Metal	8	1	5	LIP	N		4	8	
3101	7.4	30.2	0.0000	0.0000	Y	N	9/15/2011	3	Y	OD	N	Scrap Steel	3	1	1	LIP	N		4	1	
3102	39.9	85.1	0.2198	0.7382	Y	N	9/15/2011	10	Y	OD	N	Scrap Steel	10	1	2	LIP	N		8	1	
3102	39.9	85.1	0.2198	0.7382	Y	N	9/15/2011	10	Y	OD		Scrap Steel	8	1	0.5	LIP	N		10	0.25	
3103	7.8	11.2	0.0000	0.0000	Y	N	10/12/2011	4	Y	OD	N	Nails	4	1	0.2	LIP	N		3	0.1	
3104	23.2	29.2	0.2461	-0.0820	Y	N	10/12/2011	5	Y	OD	N	Scrap Metal	5	1	5	LIP	N		5	3	
3105	6.9	1.6	0.0000	0.0000	N	N	10/12/2011	5	Y	OD	N	Nails	5	1	0.1	LIP	N		2	0.1	
3106	247.4	341	0.3281	-0.3281	Y	N	10/12/2011	1	Y	OD	N	Wire	1	7	2	LIP	N		60	0.1	
3107	18.9	30.4	-0.6299	0.3018	Y	N	10/12/2011	8	Y	OD	N	Scrap Metal	8	1	2	LIP	N		3	1	
3108	6.1	6.2	0.4659	-0.6562	Y	N	10/12/2011	4	Y	OD	N	Scrap Metal	4	1	1	LIP	N		4	2	
3109	6.8	0.9	0.0000	0.0000	N	N	10/12/2011	7	Y	OD	N	Nails	7	1	0.1	LIP	N		2	0.1	
3110	7.6	13.5	-0.0820	0.4101	Y	N	10/12/2011	4	Y	OD	N	Scrap Steel	4	1	0.5	LIP	N		6	0.5	
3111	8.9	25.2	-0.1640	0.3281	Y	N	10/12/2011	6	Y	OD	N	Bolt	6	1	0.25	LIP	N		6	0.1	
3112	37.5	112.4	0.0000	0.0000	Y	N	10/12/2011	9	Y	OD	N	Scrap Metal	9	1	10	LIP	N		9	4	
3113	25.8	25.9	0.3281	0.3281	Y	N	10/12/2011	7	Y	OD	N	Scrap Steel	7	1	1	LIP	N		8	0.1	
3114	31.3	36	-0.3018	0.0000	Y	N	10/12/2011	4	Y	OD	N	Scrap Metal	3	1	1	LIP	Y	Y	9	1	
3114	31.3	36	-0.3018	0.0000	Y	N	10/12/2011	4	Y	OD		Scrap Steel	4	1	1	LIP	Y	Y	6	2	
3115	59.1	116.8	0.2198	0.6562	Y	N	9/15/2011	4	Y	OD	N	Scrap Metal	4	2	4	LIP	N		1	1	
3116	76.6	862.5	-0.2723	-0.8465	Y	N	9/15/2011	4	Y	OD	N	Scrap Steel	4	1	20	LIP	N		48	0.75	
3117	8.7	20.4	0.3839	-0.2461	Y	N	10/12/2011	4	Y	OD	N	Other	4	1	1	LIP	N		4	1	
3118	8.5	9.2	0.0000	0.3281	Y	N	10/12/2011	3	Y	OD	N	Wire	3	1	0.5	LIP	N		18	0.1	
3119	28.9	38	0.0000	0.0000	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	3	3	LIP	N		1	1	
3120	30.9	84.2	-0.1378	-0.9022	Y	N	9/15/2011	4	Y	OD	N	Chain	4	1	4	LIP	N		8	1	
3121	11.7	20.8	0.0000	0.0000	Y	N	9/15/2011	4	Y	OD	N	Scrap Metal	4	4	4	LIP	N		1	1	
3122	63.6	74	0.2461	-0.1640	Y	N	10/12/2011	5	Y	OD	N	Scrap Steel	5	1	5	LIP	N		14	1	
3123	37.7	62	0.0000	-0.1640	Y	N	10/12/2011	5	Y	OD	N	Scrap Steel	5	1	5	LIP	N		14	1	
3124	16.1	26.2	0.0000	-0.4199	Y	N	9/15/2011	6	Y	OD	N	Scrap Steel	6	1	3	LIP	Y	Y	8	1	
3125	18.9	69.4	-0.1640	-0.4921	Y	N	9/15/2011	6	Y	OD	N	Scrap Metal	6	1	6	LIP	N		4	8	
3126	430.7	1065	-0.2723	-0.7940	Y	N	9/15/2011	2	Y	OD	N	Scrap Steel	2	1	20	LIP	N		12	8	
3127	70.4	100.3	0.0000	0.1640	Y	N	9/15/2011	12	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	1	
3127	70.4	100.3	0.0000	0.1640	Y	N	9/15/2011	12	Y	OD		Scrap Metal	12	3	3	LIP	N		1	1	
3128	1159.4	1952	0.2461	0.5184	Y	N	9/15/2011	12	Y	OD	N	Other	12	1	200	LIP	N		36	18	
3129	15.5	27.7	0.0558	0.4921	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	5	5	LIP	N		1	1	
3130	17	27.2	-0.1378	0.0000	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	4	4	LIP	Y	Y	1	1	
3131	59.9	67.2	0.4101	-0.6299	Y	N	10/12/2011	12	Y	OD	N	Scrap Metal	12	1	3	LIP	N		6	3	
3132	15.5	30.5	-0.1378	-0.1083	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	3	3	LIP	N		1	1	
3133	35.9	80.2	0.0000	0.4199	Y	N	9/15/2011	6	Y	OD	N	Scrap Metal	6	1	5	LIP	N		5	3	
3134	99.7	121.3	0.1083	0.0820	Y	N	9/15/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	1	
3135	83.5	166.7	0.0000	0.0000	Y	N	9/15/2011	6	Y	OD	N	Scrap Metal	6	1	5	LIP	N		4	4	
3136	198.4	624	0.1640	0.6562	Y	N	9/15/2011	4	Y	OD	N	Scrap Steel	4	2	22	LIP	N		12	8	
3137	24.5	49.6	0.0000	0.0000	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	5	5	LIP	N		1	1	
3138	90.3	241.6	-0.2723	-0.5741	Y	N	9/15/2011	4	Y	OD	N	Scrap Metal	4	1	5	LIP	N		4	4	
3139	20.3	36	0.0000	0.0000	Y	N	9/15/2011	4	Y	OD	N	Scrap Metal	4	1	3	LIP	N		8	2	
3140	8.7	44.9	-0.4921	0.9580	Y	N	10/12/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	Y	Y	6	3	
3141	16.6	71.4	0.0000	-0.6004	Y	Y	9/15/2011	12	Y	OD	N	Scrap Metal	12	5	5	LIP	N		1	1	
3142	7.1	17	0.0000	-0.4364	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	1	5	LIP	N		1	1	

Table D-1 (continued)
Intrusive Investigation Results for Individual Target Anomalies
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~12.168 ea	~58,006 lbs

Anomaly ID	Initial Peak (Ch 2, mV)	Reac Peak (Ch 2, mV)	Reac Offset East (m)	Reac Offset North (m)	Reac Successful	Surface Item	Dig Initiated Date	Total Depth Dug (in)	Item Located	Anomaly Type*	Intact	Nomenclature (Description)	Item Depth (in)	Quantity	Weight (lbs)	Disposition**	Post Excavation QC Pick	QC Passed	Item Length (in)	Item Diameter/ Width (in)	Anomaly Comments
3143	63.6	287.5	0.0000	-0.3018	Y	N	9/15/2011	8	Y	OD	N	Scrap Metal	8	1	4	LIP	N		10	3	
3144	73.6	172	0.0000	0.0000	Y	N	9/15/2011	4	Y	OD	N	Scrap Metal	4	1	10	LIP	N		5	4	
3145	73	150	-0.5184	-0.6004	Y	N	9/15/2011	4	Y	OD	N	Scrap Metal	4	1	4	LIP	N		8	4	
3146	18.9	36.7	0.0000	0.0000	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	5	5	LIP	N		1	1	
3147	17.5	60.8	0.0000	0.7940	Y	N	9/15/2011	6	Y	OD	N	Scrap Metal	6	1	5	LIP	N		4	3	
3148	43.5	66.8	-0.0820	-0.5184	Y	N	9/15/2011	0	Y	OD	N	Scrap Metal	0	1	5	LIP	N		4	4	
3149	57.7	208.9	-0.0820	-0.5184	Y	N	9/15/2011	4	Y	OD	N	Other	4	1	1000	LIP	N		36	36	
3150	8.6	16.1	0.4199	0.3018	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	5	5	LIP	N		1	1	
3151	36.6	60.1	-0.1083	-0.3281	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	5	10	LIP	N		8	5	
3152	12.5	20.1	-0.1378	0.0000	Y	N	9/15/2011	12	Y	OD	N	Scrap Metal	12	3	3	LIP	N		1	1	
3153	271.9	358.2	-0.1903	-0.4199	Y	N	9/15/2011	12	Y	OD	N	Scrap Steel	12	1	40	LIP	N		24	4	
3154	35.7	81.8	0.2461	0.3018	Y	N	9/15/2011	4	Y	OD	N	Scrap Metal	4	1	5	LIP	N		8	5	
3155	65.2	81.9	0.0000	0.0000	Y	N	9/16/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		8	4	
3156	33.1	71.2	-0.0820	-0.4364	Y	N	9/16/2011	12	Y	OD	N	Scrap Metal	12	3	4	LIP	N		1	1	
3157	17.4	29.5	0.3281	-0.4199	Y	N	9/16/2011	4	Y	OD	N	Scrap Metal	4	1	2	LIP	N		2	2	
3158	110.1	141.6	0.0000	-0.5741	Y	N	9/16/2011	6	Y	OD	N	Scrap Steel	6	1	2	LIP	N		8	1	
3158	110.1	141.6	0.0000	-0.5741	Y	N	9/16/2011	6	Y	OD	N	Scrap Metal	6	1	3	LIP	N		4	4	
3159	38.9	61.6	0.0000	0.0000	Y	N	9/16/2011	6	Y	OD	N	Scrap Metal	6	1	2	LIP	N		5	1	
3160	42	112	0.0000	0.0000	Y	N	9/16/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	1	
3161	20.6	36.3	0.0000	0.3281	Y	N	9/16/2011	12	Y	OD	N	Scrap Metal	12	4	5	LIP	N		1	1	
3162	62.4	118.1	0.0000	-0.6004	Y	N	9/16/2011	6	Y	OD	N	Scrap Metal	6	1	5	LIP	N		8	3	
3163	35	85.9	0.1903	0.4199	Y	N	9/16/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	1	
3164	9.5	22.5	0.0000	-0.7940	Y	N	9/16/2011	12	Y	OD	N	Scrap Metal	12	5	5	LIP	N		1	1	
3165	84.9	98.5	0.0000	-0.2461	Y	N	9/16/2011	12	Y	OD	N	Scrap Metal	12	1	10	LIP	N		10	5	
3166	200.8	326.8	0.0000	-0.1903	Y	N	9/15/2011	7	Y	OD	N	Scrap Metal	7	1	9	LIP	N		10	4	
3166	200.8	326.8	0.0000	-0.1903	Y	N	9/15/2011	7	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	1	
3167	46.1	97.2	-0.1083	-0.4101	Y	N	9/16/2011	6	Y	OD	N	Scrap Metal	6	1	15	LIP	N		12	6	
3168	44.5	84.8	0.0000	0.4101	Y	N	9/16/2011	12	Y	OD	N	Scrap Metal	12	5	5	LIP	N		1	1	
3169	388.3	1143	-0.1640	-0.4364	Y	N	9/16/2011	2	Y	OD	N	Scrap Steel	2	1	20	LIP	N		12	8	
3170	34.8	121.4	-0.2723	-0.6299	Y	N	9/16/2011	12	Y	OD	N	Scrap Metal	12	6	6	LIP	N		1	1	
3171	48.4	94.9	0.0000	0.0000	Y	N	9/16/2011	2	Y	OD	N	Scrap Metal	2	1	2	LIP	N		8	1	
3172	7.8	22.6	0.0000	-0.2198	Y	N	9/16/2011	4	Y	OD	N	Scrap Steel	4	1	0.25	LIP	N		6	0.25	
3173	75.3	402.9	0.0000	0.7940	Y	N	9/16/2011	12	Y	OD	N	Scrap Metal	12	7	7	LIP	N		1	1	
3174	15	41.1	0.0000	0.0000	Y	N	9/16/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	1	
3175	105.2	149.3	-0.4364	-0.6562	Y	N	9/16/2011	8	Y	OD	N	Scrap Metal	8	1	10	LIP	N		5	5	
3176	987.3	1407	0.0000	0.3281	Y	N	9/16/2011	2	Y	OD	N	Scrap Steel	2	1	20	LIP	Y	Y	12	8	
3177	93.3	143.9	-0.1378	-0.1903	Y	N	9/16/2011	2	Y	OD	N	Other	2	1	2000	LIP	N		72	72	
3178	53.2	145	0.5184	0.5184	Y	N	9/16/2011	4	Y	OD	N	Scrap Steel	4	1	2	LIP	N		8	1	
3179	250.9	324.6	0.1378	0.1640	Y	N	9/15/2011	10	Y	OD	N	Scrap Metal	10	1	25	LIP	N		14	8	
3180	53.8	96.2	0.2461	0.1903	Y	N	9/16/2011	12	Y	OD	N	Scrap Metal	12	1	5	LIP	N		6	4	
3181	39.9	76.8	0.0000	0.0000	Y	N	9/16/2011	5	Y	OD	N	Scrap Steel	5	1	2	LIP	N		8	1	
3182	11.2	28	0.0000	-0.4921	Y	N	9/16/2011	12	Y	OD	N	Scrap Metal	12	5	5	LIP	N		1	1	
3183	19.7	49.2	0.0000	0.0000	Y	N	9/15/2011	6	Y	OD	N	Scrap Metal	6	2	6	LIP	N		2	2	
3184	9.4	80.9	0.0000	0.4101	Y	N	9/15/2011	6	Y	OD	N	Scrap Steel	6	1	2	LIP	N		8	1	
3185	19.3	50.7	0.0000	0.0000	Y	N	9/15/2011	8	Y	OD	N	Scrap Metal	8	3	7	LIP	N		1	1	

in denotes inches.
mv denotes millivolts.
lbs denotes pounds.
LIP denotes left in place.
m denotes meter.

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Table D-2
Intrusive Investigation Results for Trench Locations
Atlas Scrap Yard MRS

Summary	Qty:	Estimated Weight:
Munitions Debris:	0 ea	~0 lbs
MPPEH:	0 ea	NA
Other Debris:	~560 ea	~12,851 lbs

Trench Number	Dig Date	Total Depth Dug (in bgs)	Depth of Result Type (in bgs)	Quantity	Weight (lbs)	Type	Description	Comments	Disposition	Condition
01-1	9/12/2011	24	24	1	50	OD	Pipe	utility pipe unknown length 24 inches native soil	LIP	Inert
01-2	9/12/2011	30	30	20	50	OD	Pipe	pipe and concrete. native soil at 30 inches	LIP	Inert
01-3	9/14/2011	18	18	50	50	OD	Pipe	pipe/wire/construction debris	LIP	Inert
02-1	9/12/2011	48	48	100	100	OD	Other	slag pipe construction debris	LIP	Inert
03-1	9/12/2011	36	36	100	100	OD	Other	hot rocks and slag	LIP	Inert
03-2	9/12/2011	48	48	50	50	OD	Pipe	pipe and slag	LIP	Inert
04-1	9/14/2011	24	24	25	100	OD	Pipe	water pipe; pipe; construction debris	LIP	Inert
05-1	9/13/2011	36	36	1	2000	OD	Hot rocks/soil	slag/ road bed found from surface to 24 inches. native soil encountered at 36 inches.	LIP	Inert
05-2	9/19/2011	36	36	25	2000	OD	Hot rocks/soil	slag found from surface to 12 inches. Native soil encountered at 36 inches.	LIP	Inert
05-3	9/13/2011	48	24	20	1000	OD	Other	20 railroad ties w/ bolts found buried from surface to a depth of 24 inches. native soil encountered at 48 inches.	LIP	Inert
05-4	9/13/2011	18	18	1	5	OD	Scrap Metal	10 foot long steel banding found between surface and 8 inches. slag and road base layer 6 inches thick found. native soil encountered at 18 inches.	LIP	Inert
06-1	9/13/2011	36	36	1	30	OD	Scrap Steel	steel 55 gallon drum found on surface. slag / road bed found from surface to 6 inches. native soil encountered at 36 inches	LIP	Inert
06-2	9/13/2011	48	48	1	5000	OD	Other	48" x 36" x 3" reinforced concrete slab found at 1 inch. slag/road bed found from surface to 6 inches. native soil encountered at 48 inches.	LIP	Inert
06-3	9/13/2011	48	4	1	10	OD	Scrap Steel	1" dia. x 48" long steel rod found at 4 inches. road bed slag found from surface to 6 inches. native soil encountered at 48 inches.	LIP	Inert
07-1	9/14/2011	24	12	1	10	OD	Fence Post	3 x fence post found at 12". house foundation remnants found from surface to 18". Native soil encountered at 24 inches	LIP	Inert
08-1	9/14/2011	12	8	1	30	OD	Other	20' long 3/4" water pipe found at 8 inches. native soil encountered at 12".	LIP	Inert
09-1	9/13/2011	36	12	2	5	OD	Scrap Metal	50' metal banding and metal ammo can lids found from surface to 12 inches. native soil encountered at 36"	LIP	Inert
10-1	9/14/2011	24	24	10	35	OD	Scrap Metal	metal posts; slag	LIP	Inert
10-2	9/14/2011	3	3	8	5	OD	Wire	wire; scrap metal ; slag	LIP	Inert
10-3	9/13/2011	36	24	1	30	OD	Other	wooden crates w/ hardware and banding found from surface to 6 inches. native soil encountered at 36 inches.	LIP	Inert
11-1	9/14/2011	6	6	10	10	OD	Scrap Metal	steel rod; tin; banding	LIP	Inert
12-1	9/14/2011	6	6	100	100	OD	Pipe	pipe; slag	LIP	Inert
12-2	9/14/2011	24	24	2	50	OD	Pipe	pipe; wire	LIP	Inert
13-1	9/14/2011	6	6	1	100	OD	Asphalt	concrete slab	LIP	Inert
13-2	9/14/2011	18	18	1	20	OD	Bolt	long bolt	LIP	Inert
14-1	9/13/2011	2	2	20	10	OD	Scrap Metal	wire; tin	LIP	Inert
14-2	9/14/2011	24	24	1	100	OD	Pipe	long pipe	LIP	Inert
40-1	9/12/2011	48	48	1	100	OD	Scrap Metal	trench dug to a depth of 48 inches before encountering native soil. various scrap metal found near surface.	LIP	Inert
40-2	9/12/2011	36	36	1	500	OD	Scrap Metal	copious amounts of scrap metal on surface. rebar just below surface. native soil encountered at 36 inches. no MD found.	LIP	Inert
40-3	9/12/2011	54	54	1	200	OD	Scrap Metal	10-12 metal ammo can lids on surface. metal pipes and steel encased in concrete found under surface. native soil encountered at 54 inches .	LIP	Inert
40-4	9/12/2011	48	36	1	1	OD	Scrap Metal	Metal container lids found from 0 to 12 inches. Water main pipes and steel cables found from surface to a depth of 36 inches. Native soil	LIP	Inert
40-5	9/12/2011	48	36	1	500	OD	Scrap Metal	Metal lids from surface to 12 inches. Water pipe at 36 inches. Native soil encountered at 48 inches. No MD.	LIP	Inert
40-6	9/12/2011	48	36	1	500	OD	Scrap Metal	steel pallets found on surface. ammo container lids found from surface to a depth of 12 inches. Water main pipes found at 36 inches. Native soil	LIP	Inert

in bgs denotes inches below ground surface.
lbs denotes pounds.
LIP denotes left in place.
MD denotes munitions debris.
OD denotes other debris.

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Appendix E
Munitions Response Site Prioritization Protocol
Worksheets

Table A

MRS Background Information

DIRECTIONS: Record the background information below for the MRS to be evaluated. Much of this information is available from DoD databases, such as RMIS. If the MRS is located on a FUDS property, the suitable FUDS property information should be substituted. In the MRS summary, briefly describe the UXO, DMM, or MC that are known or suspected to be present, the exposure setting (the MRS's physical environment), any other incidental non-munitions related contaminants found at the MRS (e.g., benzene, trichloroethylene), and any potentially exposed human and ecological receptors. Include a map of the MRS, if one is available.

Munitions Response Site (MRS) Name:	**Atlas Scrap Yard (RVAAP-050-R-01)**
Component:	US Army
Installation/Property Name:	**Ravenna Army Ammunition Plant**
Location (City, County, State):	Ravenna, Portage and Trumbull Counties, Ohio
UTM Coordinates (NAD83):	X = 495533.228229 Y = 4559646.312867
Site Name (RMIS ID):	OH213820736
Project Name (Project No.):	Ravenna Army Ammunition Plant Atlas Scrap Yard (RVAAP-050-R-01) Remedial Investigation
Date Information Entered/Updated:	2-Aug-2012
Point of Contact (Name/Phone):	

Project Phase ("X" only one):

	PA		**SI**	X	**RI**		**FS**		**RD**
	RA-C		**RIP**		**RA-O**		**RC**		**LTM**

Media Evaluated ("X" all that apply):

	Groundwater (human receptor)		**Sediment (human receptor)**
	Surface soil (human receptor)		**Surface water (ecological receptor)**
	Sediment (ecological receptor)		**Surface water (human receptor)**

MRS Summary

MRS Description: Describe the munitions-related activities that occurred at the installation, the dates of operation, and the UXO, DMM (by type of munition, if known) or munitions constituents (by type, if known) known or suspected to be present):

The Atlas Scrap Yard Munitions Response Site (MRS) is collocated with an Installation Restoration Program (IRP) Area of Concern (AOC) at the Ravenna Army Ammunition Plant (RVAAP) and encompassess approximately 66 acres of mostly open land with some wooded areas, two areas with significant amounts of construction debris and rail road ties that are piled on the ground surface, and a network of old roads. Originally used as a construction camp, the MRS became a storage area for non-explosive scrap starting in 1969 (RI Report, Section 1.3.2 and 1.4). The Historical Records Review (HHR) and the Archives Search Report (ASR) documents indicate that munitions made or stored at the RVAAP may have been disposed at the MRS. It was also from the U.S. Closed, Transferring, and Transferred (CTT) Inventory that unexploded ordnance (UXO) was uncovered in the southwest corner of the MRS and that munitions and explosives of concern (MEC) and munitions debris (MD) had been sorted and removed in 2003 (RI Report, Section 1.4 and 1.5.2). However, neither the UXO discovery nor the 2003 event could be confirmed or the types of MEC/MD identified during review of the applicable data bases and depositories (rvaap.org, the Ravenna Environmental Information System, and the RVAAP library). No MEC or MD has been found during the Site Inspection (SI) or Remedial Investigation (RI) field activities (RI Report, Section 1.5.2). Given that no MEC source has been identified during the SI or RI field activities it is anticipated that no explosive safety hazard is present at the MRS (RI Report, Section 4.2.1). The MRS is collocated with an IRP site; all chemical contamination is being addressed under the IRP. No munitions constituents (MC) sampling has been conducted during the SI or RI (RI Report, Section 1.5.3 and 4.3).

Description of Pathways for Human and Ecological Receptors:

Given that no MEC source has been identified to date and an explosive safety hazard is not anticipated to exist at the Atlas Scrap Yard MRS, there are no activity/access/receptor interactions ongoing or anticipated under future land use where a receptor may come into contact with MEC. As a result, the revised conceptual site model (CSM) for MEC identifies incomplete exposure pathways in surface soil, subsurface soil, surface water and sediment for all receptors having access to the MRS (RI Report, 4.2.5).

Description of Receptors (Human and Ecological):

Receptors (biota) are based on animal and aquatic species that are likely to occur in the terrestrial and aquatic habitats at the MRS. The primary MRS-specific biota identified for the MRS include aquatic biota, terrestrial invertebrates (earthworms), voles, shrews, rabbits, robins, foxes, hawks, muskrats, ducks, minks, and benthic invertebrates (insect larvae, crayfish, snails, clams and bivalves) (RI Report, Section 9.1.1).
Human receptors identified for the Atlas Scrap Yard MRS include both current and anticipated future land users. Human receptors associated with the current land use include facility personnel, contractors, and occasional trespassers. The National Guard Trainee has been identified as the Ohio Army National Guard future land use receptor. The National Guard Trainee is the most sensitive of the identified current and future human receptors that have the potential to be exposed to any potentially remaining MEC or MC at the MRS (RI Report, Section 9.1.1).

Table 1
EHE Module: Munitions Type Data Element Table

Directions: Below are eleven classifications of munitions and their descriptions. Annotate the score(s) that correspond with **all** munitions types known or suspected to be present at the MRS.

Note: The terms *practice munitions* , *small arms* , *physical evidence* , and *historical evidence* are defined in Appendix C of the MRSPP Primer (Draft, Dec 2005).

Classification	Description	Possible Score	Score
Sensitive	All UXO that are considered likely to function upon any interaction with exposed persons [e.g., submunitions, 40mm high-explosive (HE) grenades, white phosphorous (WP) munitions, high-explosive antitank (HEAT) munitions, and practice munitions with sensitive fuzes, but excluding all other practice munitions]. All hand grenades containing energetic filler. Bulk primary explosives, or mixtures of these with environmental media, such that the mixture poses an explosive hazard.	30	
High explosive (used or damaged)	All UXO containing a high-explosive filler (e.g., RDX, Composition B), that are not considered "sensitive." All DMM containing a high-explosive filler that have been damaged by burning or detonation, or deteriorated to the point of instability.	25	
Pyrotechnic (used or damaged)	All UXO containing pyrotechnic fillers other than white phosphorous (e.g., flares, signals, simulators, smoke grenades). All DMM containing pyrotechnic fillers other than white phosphorous (e.g., flares, signals, simulators, smoke grenades) that have been damaged by burning or detonation, or deteriorated to the point of instability.	20	
High explosive (unused)	All DMM containing a high-explosive filler that have not been damaged by burning or detonation, or are not deteriorated to the point of instability.	15	
Propellant	All UXO containing mostly single-, double-, or triple-based propellant, or composite propellants (e.g., a rocket motor). All DMM containing mostly single-, double-, or triple-based propellant, or composite propellants (e.g., a rocket motor) that are damaged by burning or detonation, or deteriorated to the point of instability.	15	
Bulk secondary high explosives, pyrotechnics, or propellant	All DMM containing mostly single-, double-, or triple-based propellant, or composite propellants (e.g., a rocket motor), that are deteriorated. Bulk secondary high explosives, pyrotechnic compositions, or propellant (not contained in a munition), or mixtures of these with environmental media such that the mixture poses an explosive hazard.	10	
Pyrotechnic (not used or damaged)	All DMM containing a pyrotechnic filler (i.e. red phosphorous), other than white phosphorous filler, that have not been damaged by burning or detonation, or are not deteriorated to the point of instability.	10	
Practice	All UXO that are practice munitions that are not associated with a sensitive fuze. All DMM that are practice munitions that are not associated with a sensitive fuze and that have not been damaged by burning or detonation, or are not deteriorated to the point of instability.	5	
Riot control	All UXO or DMM containing a riot control agent filler (e.g., tear gas).	3	
Small arms	All used munitions or DMM that are categorized as small arms ammunition [Physical evidence or historical evidence that no other types of munitions (e.g., grenades, subcaliber training rockets, demolition charges) were used or are present on the MRS is required for selection of this category.].	2	
Evidence of no munitions	Following investigation of the MRS, there is physical evidence that there are no UXO or DMM present, or there is historical evidence indicating that no UXO or DMM are present.	0	0
MUNITIONS TYPE	**DIRECTIONS:** Record **the single highest score** from above in the box to the right (maximum score = 30).		**0**

DIRECTIONS: Document any MRS-specific data used in selecting the ***Munitions Type*** classifications in the space below.

Following the RI field activities and considering the results of the previously conducted SI field activities, no physical evidence of UXO or DMM (in the form of MEC and/or MD) has been identified. An explosive safety hazard is not anticipated to exist at the Atlas Scrap Yard (RI Report, Section 9.1.1).

There is no physical evidence of UXO or DMM at the Atlas Scrap Yard MRS; as such, Tables 2-9 are not applicable and have been intentionally omitted according to active Army Guidance.

Tables 2 through 9 are intentionally omitted according to Army Guidance.

Table 10

Determining the EHE Module Rating

DIRECTIONS:		Source	Score	Value
	Explosive Hazard Factor Data Elements			
1. From Tables 01 - 09, record the data element scores in the **Score** boxes to the right.	Munitions Type	Table 01	0	0
	Source of Hazard	Table 02	0	
	Accessibility Factor Data Elements			
	Location of Munitions	Table 03	0	0
2. Add the **Score** boxes for each of the three factors and record this number in the **Value** boxes to the right.	Ease of Access	Table 04	0	
	Status of Property	Table 05	0	
	Receptor Factor Data Elements			
	Population Density	Table 06	0	0
	Population Near Hazard	Table 07	0	
3. Add the three **Value** boxes and record this number in the **EHE Module Total** box below.	Types of Activities/Structures	Table 08	0	
	Ecological and/or Cultural Resources	Table 09	0	
		EHE MODULE TOTAL		**0**

	EHE Module Total	EHE Module Rating
4. Identify the appropriate range for the **EHE Module Total** at right.	92 to 100	A
	82 to 91	B
	71 to 81	C
	60 to 70	D
5. Identify the **EHE Module Rating** that corresponds to the range selected and record this rating in the **EHE Module Rating** box at the lower right corner of this table.	48 to 59	E
	38 to 47	F
	less than 38	G
NOTE: An alternative module rating may be assigned when a module letter rating is inappropriate. An alternative module rating is used when more information is needed to score one or more data elements, contamination at an MRS was previously addressed, or there is no reason to suspect contamination was ever present at an MRS.	Alternative Module Ratings	Evaluation Pending
		No Longer Required
		No Known or Suspected Explosive Hazard
	EHE MODULE RATING	**No Known or Suspected Explosive Hazard**

Table 11

CHE Module: CWM Configuration Data Element Table

Directions: Below are seven classifications of CWM configuration and their descriptions. Annotate the score(s) that correspond to **all** CWM configurations known or suspected to be present at the MRS.

Note: The terms *CWM/UXO*, *CWM/DMM*, *physical evidence*, and *historical evidence* are defined in Appendix C of the MRSPP Primer (Draft, Dec 2005).

Classification	Description	Possible Score	Score
CWM, explosive configuration either UXO or damaged DMM	The CWM known or suspected of being present at the MRS is (a) explosively configured CWM that are UXO (i.e. CWM/UXO), or (b) explosively configured CWM that are DMM (i.e. CWM/DMM) that have been damaged.	30	
CWM mixed with UXO	The CWM known or suspected of being present at the MRS are explosively configured CWM/DMM that have not been damaged, or nonexplosively configured CWM/DMM, or CWM not configured as a munition, that are commingled with conventional munitions that are UXO.	25	
CWM, explosive configuration that are undamaged DMM	The CWM known or suspected of being present at the MRS are explosively configured CWM/DMM that have not been damaged.	20	
CWM, not explosively configured or CWM, bulk container	The CWM known or suspected of being present at the MRS is (a) nonexplosively configured CWM/DMM, or (b) bulk CWM/DMM (e.g., ton container).	15	
CAIS K941 and CAIS K942	The CWM/DMM known or suspected of being present at the MRS is CAIS K941(toxic gas set M-1) or CAIS K942 (toxic gas set M-2/E11).	12	
CAIS (chemical agent identification sets)	Only CAIS, other than CAIS K941 and K942, are known or suspected of being present at the MRS.	10	
Evidence of no CWM	Following investigation, the physical evidence indicates that CWM are not present at the MRS, or the historical evidence indicates that CWM are not present at the MRS.	0	0
CWM CONFIGURATION	**DIRECTIONS:** Record **the single highest score** from above in the box to the right (maximum score = 30).		**0**

DIRECTIONS: Document any MRS-specific data used in selecting the ***CWM Configuration*** classifications in the space below.

The RVAAP is listed on the Non-Stockpile CWM List as a site with known or possible buried CWM; however, there is no known historical or physical evidence of CWM being produced, stored, or used at the MRS. As such, Tables 12-19 are not applicable and have intentionally omitted according to active Army Guidance.

Tables 12 through 19 are intentionally omitted according to Army Guidance.

Table 20

Determining the CHE Module Rating

DIRECTIONS:		Source	Score	Value
1. From Tables 11 - 19, record the data element scores in the **Score** boxes to the right.	**CWM Hazard Factor Data Elements**			
	CWM Configuration	Table 11	0	0
	Sources of CWM	Table 12	0	
2. Add the **Score** boxes for each of the three factors and record this number in the **Value** boxes to the right.	**Accessibility Factor Data Elements**			
	Location of CWM	Table 13	0	0
	Ease of Access	Table 14	0	
	Status of Property	Table 15	0	
3. Add the three **Value** boxes and record this number in the **CHE Module Total** box below.	**Receptor Factor Data Elements**			
	Population Density	Table 16	0	0
	Population Near Hazard	Table 17	0	
	Types of Activities/Structures	Table 18	0	
	Ecological and/or Cultural Resources	Table 19	0	
	CHE MODULE TOTAL			**0**

	CHE Module Total	CHE Module Rating
4. Identify the appropriate range for the **CHE Module Total** at right.	92 to 100	A
	82 to 91	B
	71 to 81	C
	60 to 70	D
5. Identify the **CHE Module Rating** that corresponds to the range selected and record this rating in the **CHE Module Rating** box at the lower right corner of this table.	48 to 59	E
	38 to 47	F
	less than 38	G
NOTE: An alternative module rating may be assigned when a module letter rating is inappropriate. An alternative module rating is used when more information is needed to score one or more data elements, contamination at an MRS was previously addressed, or there is no reason to suspect contamination was ever present at an MRS.	Alternative Module Ratings	Evaluation Pending
		No Longer Required
		No Known or Suspected CWM Hazard
	CHE MODULE RATING	**No Known or Suspected CWM Hazard**

Table 21

HHE Module: Groundwater Data Element Table

Contaminant Hazard Factor (CHF)

Directions: Record the **maximum concentrations** of all contaminants in the MRS's groundwater and their **comparison values** (from Appendix B, Relative Risk Site Evaluation (RRSE) Primer, Summer 1997 - Revised) in the table below. Additional contaminants can be recorded on Table 27. Calculate and record the **ratios** for each contaminant by dividing the **maximum concentration** by the **comparison value**. Determine the **CHF** by adding the **ratios** for each medium together, including additional contaminants recorded on Table 27. Based on the **CHF**, use the **CHF Scale** to determine and record the **CHF Value**. If there is no known or suspected MC hazard present in the groundwater, select the box at the bottom of the table.

Note: Use dissolved, rather than total, metals analyses when both are available.

Contaminant [CAS No.]	Maximum Concentration (µg/L)	Comparison Value (µg/L)	Ratios
No samples have been collected at the MRS under the MMRP (RI Report)			
		Total from Table 27	
CHF Scale	**CHF Value**	**Sum the Ratios**	
CHF > 100	**H (High)**		
100 > CHF >2	**M (Medium)**		
2 > CHF	**L (Low)**		

$$CHF = \sum \text{([Max Conc of Contaminant] / [Comparison Value for Contaminant])}$$

CONTAMINANT HAZARD FACTOR	Directions: Record **the CHF Value** from above in the box to the right (maximum value = H).	

Migratory Pathway Factor

Directions: Annotate the value that corresponds most closely to the groundwater migratory pathway at the MRS.

Classification	Description	Value
Evident	Analytical data or observable evidence indicates that contamination in the groundwater is present at, moving toward, or has moved to a point of exposure.	H
Potential	Contamination in groundwater has moved only slightly beyond the source (i.e. tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.	M
Confined	Information indicates a low potential for contaminant migration from the source via the groundwater to a potential point of exposure (possibly due to geological structures or physical controls).	L
MIGRATORY PATHWAY FACTOR	Directions: Record **the single highest value** from above in the box to the right (maximum value = H).	

Receptor Factor

Directions: Annotate the value that corresponds most closely to the groundwater receptors at the MRS.

Classification	Description	Value
Identified	There is a threatened water supply well downgradient of the source and the groundwater is a current source of drinking water or source of water for other beneficial uses such as irrigation/agriculture (equivalent to Class I or IIA aquifer).	H
Potential	There is no threatened water supply well downgradient of the source and the groundwater is currently or potentially usable for drinking water, irrigation, or agriculture (equivalent to Class I, IIA, or IIB aquifer).	M
Limited	There is no potentially threatened water supply well downgradient of the source and the groundwater is not considered a potential source of drinking water and is of limited beneficial use (equivalent to Class IIIA or IIIB aquifer, or where perched aquifer exists only).	L
RECEPTOR FACTOR	Directions: Record **the single highest value** from above in the box to the right (maximum value = H).	

Place an "X" in the box to the right if there is no known or suspected Groundwater MC Hazard

Table 22

HHE Module: Surface Water - Human Endpoint Data Element Table

Contaminant Hazard Factor (CHF)

Directions: Record the **maximum concentrations** of all contaminants in the MRS's surface water and their **comparison values** (from Appendix B, Relative Risk Site Evaluation (RRSE) Primer, Summer 1997 - Revised) in the table below. Additional contaminants can be recorded on Table 27. Calculate and record the **ratios** for each contaminant by dividing the **maximum concentration** by the **comparison value**. Determine the **CHF** by adding the **ratios** for each medium together, including additional contaminants recorded on Table 27. Based on the **CHF**, use the **CHF Scale** to determine and record the **CHF Value**. If there is no known or suspected MC hazard present in the surface water, select the box at the bottom of the table.

Note: Use dissolved, rather than total, metals analyses when both are available.

Contaminant [CAS No.]	Maximum Concentration (µg/L)	Comparison Value (µg/L)	Ratios
No samples have been collected at the MRS under the MMRP (RI Report)			
		Total from Table 27	
		Sum the Ratios	

CHF Scale	CHF Value
CHF > 100	H (High)
100 > CHF >2	M (Medium)
2 > CHF	L (Low)

$CHF = \sum$ ([Max Conc of Contaminant] / [Comparison Value for Contaminant])

CONTAMINANT HAZARD FACTOR	Directions: Record **the CHF Value** from above in the box to the right (maximum value = H).	

Migratory Pathway Factor

Directions: Annotate the value that corresponds most closely to the surface water migratory pathway at the MRS.

Classification	Description	Value
Evident	Analytical data or observable evidence indicates that contamination in the surface water is present at, moving toward, or has moved to a point of exposure.	H
Potential	Contamination in surface water has moved only slightly beyond the source (i.e. tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.	M
Confined	Information indicates a low potential for contaminant migration from the source via the surface water to a potential point of exposure (possibly due to presence of geological structures or physical controls).	L
MIGRATORY PATHWAY FACTOR	Directions: Record **the single highest value** from above in the box to the right (maximum value = H).	

Receptor Factor

Directions: Annotate the value that corresponds most closely to the surface water receptors at the MRS.

Classification	Description	Value
Identified	Identified receptors have access to surface water to which contamination has moved or can move.	H
Potential	Potential for receptors to have access to surface water to which contamination has moved or can move.	M
Limited	Little or no potential for receptors to have access to surface water to which contamination has moved or can move.	L
RECEPTOR FACTOR	Directions: Record **the single highest value** from above in the box to the right (maximum value = H).	

Place an "X" in the box to the right if there is no known or suspected Surface Water (Human Endpoint) MC Hazard	

Table 23

HHE Module: Sediment - Human Endpoint Data Element Table

Contaminant Hazard Factor (CHF)

Directions: Record the **maximum concentrations** of all contaminants in the site's sediment and their **comparison values** (from Appendix B, Relative Risk Site Evaluation (RRSE) Primer, Summer 1997 - Revised) in the table below. Additional contaminants can be recorded on Table 27. Calculate and record the **ratios** for each contaminant by dividing the **maximum concentration** by the **comparison value**. Determine the **CHF** by adding the **ratios** for each medium together, including additional contaminants recorded on Table 27. Based on the **CHF**, use the **CHF Scale** to determine and record the **CHF Value**. If there is no known or suspected MC hazard for human endpoints present in the sediment, select the box at the bottom of the table.

Note: N/A

Contaminant [CAS No.]	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
No samples have been collected at the MRS under the MMRP (RI Report).			
		Total from Table 27	
CHF Scale	**CHF Value**	**Sum the Ratios**	
CHF > 100	**H (High)**		
100 > CHF >2	**M (Medium)**	CHF = $\sum$ ([Max Conc of Contaminant] / [Comparison Value for Contaminant])	
2 > CHF	**L (Low)**		
CONTAMINANT HAZARD FACTOR	Directions: Record **the CHF Value** from above in the box to the right (maximum value = H).		

Migratory Pathway Factor

Directions: Annotate the value that corresponds most closely to the surface water migratory pathway at the MRS.

Classification	Description	Value
Evident	Analytical data or observable evidence indicates that contamination in the sediment is present at, moving toward, or has moved to a point of exposure.	H
Potential	Contamination in sediment has moved only slightly beyond the source (i.e. tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.	M
Confined	Information indicates a low potential for contaminant migration from the source via the sediment to a potential point of exposure (possibly due to presence of geological structures or physical controls).	L
MIGRATORY PATHWAY FACTOR	Directions: Record **the single highest value** from above in the box to the right (maximum value = H).	

Receptor Factor

Directions: Annotate the value that corresponds most closely to the surface water receptors at the MRS.

Classification	Description	Value
Identified	Identified receptors have access to sediment to which contamination has moved or can move.	H
Potential	Potential for receptors to have access to sediment to which contamination has moved or can move.	M
Limited	Little or no potential for receptors to have access to sediment to which contamination has moved or can move.	L
RECEPTOR FACTOR	Directions: Record **the single highest value** from above in the box to the right (maximum value = H).	

Place an "X" in the box to the right if there is no known or suspected Sediment (Human Endpoint) MC Hazard	

Table 24

HHE Module: Surface Water - Ecological Endpoint Data Element Table

Contaminant Hazard Factor (CHF)

Directions: Record the **maximum concentrations** of all contaminants in the MRS's surface water and their **comparison values** (from Appendix B, Relative Risk Site Evaluation (RRSE) Primer, Summer 1997 - Revised) in the table below. Additional contaminants can be recorded on Table 27. Calculate and record the **ratios** for each contaminant by dividing the **maximum concentration** by the **comparison value**. Determine the **CHF** by adding the **ratios** for each medium together, including additional contaminants recorded on Table 27. Based on the **CHF**, use the **CHF Scale** to determine and record the **CHF Value**. If there is no known or suspected MC hazard for ecological endpoints present in the surface water, select the box at the bottom of the table.

Note: Use either dissolved or total metals analyses.

Contaminant [CAS No.]	Maximum Concentration (µg/L)	Comparison Value (µg/L)	Ratios
No samples have been collected at the MRS under the MMRP (RI Report)			
		Total from Table 27	
		Sum the Ratios	

CHF Scale	CHF Value	
CHF > 100	**H (High)**	
100 > CHF >2	**M (Medium)**	CHF = $\sum$ **([Max Conc of Contaminant] / [Comparison Value for Contaminant])**
2 > CHF	**L (Low)**	

CONTAMINANT HAZARD FACTOR	Directions: Record **the CHF Value** from above in the box to the right (maximum value = H).	

Migratory Pathway Factor

Directions: Annotate the value that corresponds most closely to the surface water migratory pathway at the MRS.

Classification	Description	Value
Evident	Analytical data or observable evidence indicates that contamination in the surface water is present at, moving toward, or has moved to a point of exposure.	H
Potential	Contamination in surface water has moved only slightly beyond the source (i.e. tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.	M
Confined	Information indicates a low potential for contaminant migration from the source via the surface water to a potential point of exposure (possibly due to presence of geological structures or physical controls).	L
MIGRATORY PATHWAY FACTOR	Directions: Record **the single highest value** from above in the box to the right (maximum value = H).	

Receptor Factor

Directions: Annotate the value that corresponds most closely to the surface water receptors at the MRS.

Classification	Description	Value
Identified	Identified receptors have access to surface water to which contamination has moved or can move.	H
Potential	Potential for receptors to have access to surface water to which contamination has moved or can move.	M
Limited	Little or no potential for receptors to have access to surface water to which contamination has moved or can move.	L
RECEPTOR FACTOR	Directions: Record **the single highest value** from above in the box to the right (maximum value = H).	

Place an "X" in the box to the right if there is no known or suspected Surface Water (Ecological Endpoint) MC Hazard	

Table 25

HHE Module: Sediment - Ecological Endpoint Data Element Table

Contaminant Hazard Factor (CHF)

Directions: Record the **maximum concentrations** of all contaminants in the MRS's sediment and their **comparison values** (from Appendix B, Relative Risk Site Evaluation (RRSE) Primer, Summer 1997 - Revised) in the table below. Additional contaminants can be recorded on Table 27. Calculate and record the **ratios** for each contaminant by dividing the **maximum concentration** by the **comparison value**. Determine the **CHF** by adding the **ratios** for each medium together, including additional contaminants recorded on Table 27. Based on the **CHF**, use the **CHF Scale** to determine and record the **CHF Value**. If there is no known or suspected MC hazard for ecological endpoints present in the sediment, select the box at the bottom of the table.

Note: N/A

Contaminant [CAS No.]	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
No samples have been collected at the MRS under the MMRP (RI Report)			
		Total from Table 27	
		Sum the Ratios	

CHF Scale	**CHF Value**
CHF > 100	**H (High)**
100 > CHF >2	**M (Medium)**
2 > CHF	**L (Low)**

$CHF = \sum$ ([Max Conc of Contaminant] / [Comparison Value for Contaminant])

CONTAMINANT HAZARD FACTOR	Directions: Record **the CHF Value** from above in the box to the right (maximum value = H).	

Migratory Pathway Factor

Directions: Annotate the value that corresponds most closely to the surface water migratory pathway at the MRS.

Classification	Description	Value
Evident	Analytical data or observable evidence indicates that contamination in the sediment is present at, moving toward, or has moved to a point of exposure.	H
Potential	Contamination in sediment has moved only slightly beyond the source (i.e. tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.	M
Confined	Information indicates a low potential for contaminant migration from the source via the sediment to a potential point of exposure (possibly due to presence of geological structures or physical controls).	L

MIGRATORY PATHWAY FACTOR	Directions: Record **the single highest value** from above in the box to the right (maximum value = H).	

Receptor Factor

Directions: Annotate the value that corresponds most closely to the surface water receptors at the MRS.

Classification	Description	Value
Identified	Identified receptors have access to sediment to which contamination has moved or can move.	H
Potential	Potential for receptors to have access to sediment to which contamination has moved or can move.	M
Limited	Little or no potential for receptors to have access to sediment to which contamination has moved or can move.	L

RECEPTOR FACTOR	Directions: Record **the single highest value** from above in the box to the right (maximum value = H).	

Place an "X" in the box to the right if there is no known or suspected Sediment (Ecological Endpoint) MC Hazard	

Table 26

HHE Module: Surface Soil - Data Element Table

Contaminant Hazard Factor (CHF)

Directions: Record the **maximum concentrations** of all contaminants in the MRS's surface soil and their **comparison values** (from Appendix B, Relative Risk Site Evaluation (RRSE) Primer, Summer 1997 - Revised) in the table below. Additional contaminants can be recorded on Table 27. Calculate and record the **ratios** for each contaminant by dividing the **maximum concentration** by the **comparison value**. Determine the **CHF** by adding the **ratios** for each medium together, including additional contaminants recorded on Table 27. Based on the **CHF**, use the **CHF Scale** to determine and record the **CHF Value**. If there is no known or suspected MC hazard present in the surface soil, select the box at the bottom of the table.

Note: N/A

Contaminant [CAS No.]	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
No samples have been collected at the MRS under the MMRP (RI Report)			
		Total from Table 27	
		Sum the Ratios	

CHF Scale	CHF Value	
CHF > 100	H (High)	CHF = $\sum$ ([Max Conc of Contaminant] / [Comparison Value for Contaminant])
100 > CHF >2	M (Medium)	
2 > CHF	L (Low)	

CONTAMINANT HAZARD FACTOR	Directions: Record **the CHF Value** from above in the box to the right (maximum value = H).	

Migratory Pathway Factor

Directions: Annotate the value that corresponds most closely to the surface soil migratory pathway at the MRS.

Classification	Description	Value
Evident	Analytical data or observable evidence indicates that contamination in the surface soil is present at, moving toward, or has moved to a point of exposure.	H
Potential	Contamination in surface soil has moved only slightly beyond the source (i.e. tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.	M
Confined	Information indicates a low potential for contaminant migration from the source via the surface soil to a potential point of exposure (possibly due to presence of geological structures or physical controls).	L
MIGRATORY PATHWAY FACTOR	Directions: Record **the single highest value** from above in the box to the right (maximum value = H).	

Receptor Factor

Directions: Annotate the value that corresponds most closely to the surface soil receptors at the MRS.

Classification	Description	Value
Identified	Identified receptors have access to surface soil to which contamination has moved or can move.	H
Potential	Potential for receptors to have access to surface soil to which contamination has moved or can move.	M
Limited	Little or no potential for receptors to have access to surface soil to which contamination has moved or can move.	L
RECEPTOR FACTOR	Directions: Record **the single highest value** from above in the box to the right (maximum value = H).	

Place an "X" in the box to the right if there is no known or suspected Surface Soil MC Hazard	

Table 27

HHE Module: Supplemental Contaminant Hazard Factor Table

Contaminant Hazard Factor (CHF)

Directions: **Only use this table if there are more than five contaminants present at the MRS.** This is a supplemental table designed to hold information about contaminants that do not fit in the previous tables. Indicate the **media** in which these contaminants are present. Then record all **contaminants**, their **maximum concentrations** and their **comparison values** (from Appendix B, Relative Risk Site Evaluation (RRSE) Primer, Summer 1997 - Revised) in the table below. Calculate and record the **ratio** for each contaminant by dividing the **maximum concentration** by the **comparison value**. Determine the **CHF** for each medium on the appropriate media-specific tables.

Note: For human exposures to groundwater and surface water, use dissolved, rather than total, metals analyses when both are available. Remember not to add ratios from different media.

Media	Contaminant [CAS No.]	Maximum Concentration	Units	Comparison Value	Units	Ratios
Surface soil			mg/kg		mg/kg	
Surface soil			mg/kg		mg/kg	
Surface soil			mg/kg		mg/kg	
Surface soil			mg/kg		mg/kg	
Surface soil			mg/kg		mg/kg	
Surface soil			mg/kg		mg/kg	
Surface soil			mg/kg		mg/kg	
Surface soil			mg/kg		mg/kg	
Surface soil			mg/kg		mg/kg	
Surface soil			mg/kg		mg/kg	
Surface soil			mg/kg		mg/kg	
Surface soil			mg/kg		mg/kg	
Surface soil			mg/kg		mg/kg	
					SUBTOTAL FOR SURFACE SOIL	**0**
Sediment			mg/kg		mg/kg	
Sediment			mg/kg		mg/kg	
Sediment			mg/kg		mg/kg	
Sediment			mg/kg		mg/kg	
Sediment			mg/kg		mg/kg	
Sediment			mg/kg		mg/kg	
Sediment			mg/kg		mg/kg	
Sediment			mg/kg		mg/kg	
Sediment			mg/kg		mg/kg	
Sediment			mg/kg		mg/kg	
Sediment			mg/kg		mg/kg	
Sediment			mg/kg		mg/kg	
Sediment			mg/kg		mg/kg	
					SUBTOTAL FOR SEDIMENT	**0**
Surface water			µg/L		µg/L	
Surface water			µg/L		µg/L	
Surface water			µg/L		µg/L	
Surface water			µg/L		µg/L	
Surface water			µg/L		µg/L	
Surface water			µg/L		µg/L	
Surface water			µg/L		µg/L	
Surface water			µg/L		µg/L	
Surface water			µg/L		µg/L	
Surface water			µg/L		µg/L	
Surface water			µg/L		µg/L	
Surface water			µg/L		µg/L	
Surface water			µg/L		µg/L	
					SUBTOTAL FOR SURFACE WATER	**0**
Groundwater			µg/L		µg/L	
Groundwater			µg/L		µg/L	
Groundwater			µg/L		µg/L	
Groundwater			µg/L		µg/L	
Groundwater			µg/L		µg/L	
Groundwater			µg/L		µg/L	
Groundwater			µg/L		µg/L	
Groundwater			µg/L		µg/L	
Groundwater			µg/L		µg/L	
Groundwater			µg/L		µg/L	
Groundwater			µg/L		µg/L	
Groundwater			µg/L		µg/L	
Groundwater			µg/L		µg/L	
					SUBTOTAL FOR GROUNDWATER	**0**

Table 28

Determining the HHE Module Rating

DIRECTIONS:

1. Record the letter values (H, M, L) for the **Contaminant Hazard**, **Migration Pathway**, and **Receptor Factors** for the media (from Tables 21 - 26) in the corresponding boxes below.
2. Record the media's three-letter combinations in the **Three-Letter-Combination** boxes below (three-letter combinations are arranged from Hs to Ms to Ls).

3. Using the reference provided below, determine each medium's rating (A - G) and record the letter in the corresponding **Media Rating** box below.

Medium (Source)	Contaminant Hazard Factor Value	Migratory Pathway Factor Value	Receptor Factor Value	Three-Letter Combination (Hs-Ms-Ls)	Media Rating (A - G)
Table 21 - Groundwater					
Table 22 - Surface Water (Human Endpoint)					
Table 23 - Sediment (Human Endpoint)					
Table 24 - Surface Water (Ecological Endpoint)					
Table 25 - Sediment (Ecological Endpoint)					
Table 26 - Surface Soil	L				
			HHE MODULE RATING		

DIRECTIONS (Continued):

4. Select the single highest **Media Rating** (A is the highest; G is the lowest) and enter the letter in the **HHE Module Rating** box below.

HHE Ratings (for reference only)

HHH	A
HHM	B
HHL	C
HMM	C
HML	D
MMM	D
HLL	E
MML	E
MLL	F
LLL	G
Alternative Module Ratings	Evaluation Pending
	No Longer Required
	No Known or Suspected MC Hazard

NOTE: An alternative module rating may be assigned when a module letter rating is used when more information is needed to score one or more media, contamination at an MRS was previously addressed, or there is no reason to suspect contamination was ever present at an MRS.

Table 29

MRS Priority

DIRECTIONS: In the chart below, enter the letter **rating** for each module recorded in Table 10 (EHE), Table 20 (CHE), and Table 28 (HHE). Enter the corresponding numerical **priority** for each module. If information to determine the module rating is not available, choose the appropriate alternative module rating. The MRS priority is the single highest priority; record this number in the **MRS or Alternative Priority** box at the bottom of the table.

NOTE: An MRS assigned Priority 1 has the highest relative priority; an MRS assigned Priority 8 has the lowest relative priority. Only an MRS with CWM known or suspected to be present can be assigned Priority 1; an MRS that has CWM known or suspected to be present cannot be assigned Priority 8.

EHE Rating	Priority	CHE Rating	Priority	HHE Rating	Priority
		A	1		
A	2	B	2	A	2
B	3	C	3	B	3
C	4	D	4	C	4
D	5	E	5	D	5
E	6	F	6	E	6
F	7	G	7	F	7
G	8			G	8
Evaluation Pending		Evaluation Pending		Evaluation Pending	
No Longer Required		No Longer Required		No Longer Required	
No Known or Suspected Explosive Hazard		No Known or Suspected CWM Hazard		No Known or Suspected MC Hazard	

Reference Table 10:		Reference Table 20:		Reference Table 28:	
EHE Module Rating	**Priority**	**CHE Module Rating**	**Priority**	**HHE Module Rating**	**Priority**
No Known or Suspected Explosive Hazard	No Known or Suspected Explosive Hazard	No Known or Suspected CWM Hazard	No Known or Suspected CWM Hazard	No Known or Suspected MC Hazard	No Known or Suspected MC Hazard

MRS or Alternative Priority	No Longer Required

Appendix F
Responses to Ohio EPA Comments

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Ohio EPA – Eileen Mohr (Received December 13, 2012)					
O-1	General		Pursuant to the CERCLA process, the property owner usually can provide the expected land uses to assist in ensuring that the investigation addresses all receptors for both current and future land uses. Be advised that due to land use uncertainty, Ohio EPA may require additional work in the future to address data gaps. It is incumbent upon the Army to finalize land use at Camp Ravenna as soon as possible, otherwise additional work and schedule slippage may result.	Response required from Army.	Based on direction provided by the Army following the February 28 land use discussion with Ohio EPA, the anticipated future land uses for the Group 8 MRS will be "military training". These activities are applicable for the anticipated future receptor that consists of the National Guard Trainee. In accordance with the Work Plan, a HHRA and ERA were not conducted for the anticipated future human or ecological land use receptors under the MMRP since no MEC source was found at the MRS during the RI and no MC sampling was required.
O-2	General		At some point in the text, please identify the members of the Project Team by name and organization.	Please add to revised text.	Reference to the "Project Team" will be removed from the document. All decisions made during the RI field activities were in accordance with the approved work plan or were based on the RI data results collected in the field.
O-3	General		Disclaimer Statement	Remove from final document	The Disclaimer Statement page will be removed from the document.
O-4	General		In a number of places in the text there is the reference that all debris was left in place. This	Please provide an explanation as to why the materials were left in place. Why wasn't the metal recycled or, if	The Scope of Work for the Remedial Investigation did not include the removal of non-munitions related debris and/or trash

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			debris was a total of 70,859 pounds. It makes no sense that this was not either recycled or disposed of properly in accordance with all applicable State and Federal rules, laws, and regulations. Especially in light of the fact that only 650 pounds were described as being metallic and several "trash pits" were referenced. Ex: ES-3/27, 3-7/7, 3-7/35, 4-8/32-33, 4-10/23, 10-2/34-35, 10-3/11.	considered a waste, handled appropriately? Army: what is the future disposition of these materials?	from the surface or subsurface of the Atlas Scrap Yard MRS. With regards to the future disposition of these materials, the debris is not eligible for removal under the MMRP since no MEC/MD has been found. Any HTRW material encountered under the IRP, if any, would require removal under that program. Otherwise, the remaining debris is non-hazardous waste that does not require immediate removal. It is expected that any remaining debris would be removed at the time that anticipated future activities begin to occur at the site as part of best management practices.
O-5	General		In several places, a "Decision Document" is referenced. Ex: pg. ES-6/25, 10-6/14.	Change all occurrences of this term to "Record of Decision."	Decision Document will be changed to Record of Decision in the following locations: Executive Summary (ES-6) and Section 10.5 (10-6)
O-6	General		On all figures that contain the RVAAP boundary. In the past, the fence-line north of SR 5 has been used as the boundary.	Please confirm that the intent was to include all Federal property on these maps.	The intent was to include all Federal property on the figures and maps in the report. For Figure 1-5 and 1-6 that are the only figures that depict the facility boundary, it appears the SR 5 symbol and facility boundary (i.e., the fence line) are reversed. These figures will be corrected.

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O-7	General		In several sections of the text, there is reference made to a sorting and removal action of MEC and MD from the MRS, yet no documentation can be found. Ex: 1-17 /36; 1-18/6-7, 1-20/1, 9-5/6-11.	A removal report should have been generated including how and where this material was disposed. Army: please find and provide the applicable report. Minimally, there should be documents that certify the materials as MDAS and recycling/scrap tickets. Where did this material go?	Shaw has reviewed the available data bases (i.e., RVAAP.org and REIMS) and has spoken with Gail Harris who manages the RVAAP library. No information regarding the 2003 removal action has been found to date. This is consistent with the previous historical review performed during the SI. Therefore, the Army is not able to provide the report as requested. Additionally, at the recommendation of the USACE, Shaw contacted Tom Chanda to verify if any such activities occurred at the MRS. Mr. Chanda was only aware of the removal of the ammo boxes that were previously stored at the Atlas Scrap Yard and the presence of two unfuzed 90mm rounds that were found in the cans. Mr. Chanda was not aware of any UXO that was buried at the MRS and felt that buried UXO was out of perspective with the historical use of the area that was used for cantonment activities; e.g. housing, offices, hospital, gas stations, vehicle maintenance, utility infrastructure, baseball fields, pheasant pens, roads & grounds maintenance, etc. Following the Atlas Scrap Yard and Load Line #1 MMRP Technical Meeting between CB&I, ARNG, OHARNG, USACE and the Ohio EPA on March 7, 2013, Ohio EPA provided photographs to the Army of the MD and potential MEC piles that were at the Atlas Scrap Yard prior to the 2003 removal

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					activities. Reference to the photographs that document the debris previously stored at the MRS has been included in sections ES.1 and 1.4 of the RI Report.
O-8	General		In all instances where "Vista" is referenced, please change to "VISTA."		Based on revisions to the text, reference to VISTA has been removed from the document. Therefore, this comment no longer applies.
O-9	Typos		a. iii/12 b.vi/14 c. ES-1/2 d. ES-1/13 e. 1-11/3 f. 1-15 g. 1-17/20 h. 4-2/22 i. Fig 4-3 j 10-1/22 k. App A, 1-1/16 l. App A/5-4/30 m. App A/6-1/9 n. App B/B-9/pho 16	a. Change "Course" to "Coarse." b. Correct SAIC acronym definition. c. Change "finding" to "findings." d. Add the acronym NCP. e. Add "of' between "level" and "deposition." f. Change "Shinning" to "Shining." g. Change "AOC" to "AOCs." h. Change "rational" to "rationale." i. Change "Course" to "Coarse." j. Remove the word "information" (i.e. repetitive). k. Change "metals scraps" to "metal l. Add the word "and" between "trenching" and "individual."	a. "Course" will be change to "Coarse" on page iii Figure table of contents and on Figure 4-3 legend title block. b. SAIC acronym definition will be changed to "Science Applications International Corporation" c. ES, Line 2, "finding" changed to "findings". d. The acronym for NCP is not included in the Executive Summary since it is only mentioned once in the ES. e. Section 1.3.6, page 1-11. Sentence corrected to "Due to erosion and because the land surface was above the level of deposition, the Pottsville Formation…" f. Table 1-3, page 1-15. "Shinning ladies-tresses" corrected to "Shining ladies-tresses" g. Section 1.4, page 1-17. Sentence corrected

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			o. App D/D-1 in receptor description.	m. Change "regards" to "regard." n. Change "at" to "at." o. Change to read: " ... at the RVAAP and that may be ... "	to “Other areas of concern (AOCs) present at RVAAP include…” h. Section 4.1.2, page 4-2. Text corrected to “Further discussion of the anomalies identified and the rationale for investigation…” i. Title block to Figure 4-3 will be corrected from “course” to “coarse”. j. Section 10-1, page 10-1. Sentence corrected to “The sources of this information were obtained during previous investigations…” k. Appendix A, Section 1-1. Sentence corrected to “In addition, debris piles comprised of construction debris, dunnage, and metal appear…” l. Appendix A, Section 5.2. Sentence corrected to “The results of the exploratory trenching and individual…” m. Appendix A, Section 6.0. Sentence corrected to “The data interpretation for the MRS was performed with regard to the…” n. Appendix B, photo 16. Title text corrected to “Slag and metal OD consisting of posts found in Trench 10-1 at the southeast corner of the Atlas Scrap Yard MRS.” o. Appendix D, MRSPP Table A, Description of Receptors (Human and Ecological). Last sentence of the first paragraph corrected to

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					"Unlisted mammal, bird, and wetland species may be present on either a permanent or transient basis."
O-10	ES-1/23-25		The text indicates that previous data collected during the IRP were reviewed, but not considered applicable.	Please provide an explanation. Minimally, IRP data should have been utilized to populate the MRSPP.	The text in ES-1 will be revised as follows: "Previous data collected at the MRS under the IRP was also reviewed, but were not considered applicable as no MEC was identified during the RI field effort and no MC sampling was conducted for the RI. Additionally, contamination at the Atlas Scrap Yard MRS continues to be addressed under the IRP." The issue regarding the use of IRP data in the MRSPP was discussed during the Atlas Scrap Yard and Load Line #1 MMRP Technical Meeting between CB&I, ARNG, OHARNG, USACE and the Ohio EPA on March 7, 2013. Following the discussion, the consensus was that Brett Merkel from ARNG would request input from his contacts at the MRSPP Board regarding the applicability of using IRP data in the MMRP. The resulting decision from that inquiry is that at MRSs where analytical samples were collected under the MMRP, the IRP samples (of the same constituents) are applicable for inclusion in the MRSPP, if they are (1) metals above background, or (2) the rest of the MC suite, if they are above the detection limit (Not UJ). Based on this rationale, use

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					of the IRP data for the Atlas Scrap Yard MRS is not applicable since there was no reason to collect samples under the MMRP (i.e., no MEC or MD was found during the RI field activities).
O-11	ES-3		"Other debris" is referenced on lines i16 and 23. Also pg. 4-8/31,401/21 and 23, 10-3/7, 10-3/9, App A/6-2/30, App A/6-3/9, etc. (Not all inclusive.)	Please provide a description of I "other debris."	"Other Debris" can represent any form of debris determined not to be munitions related, including scrap metal, hot rocks (i.e., slag), nails, pipe, and construction debris. Additional text stating such will be incorporated into the document and each appendix where the term is first used. A full description of "Other Debris" for each anomaly intrusively investigated and each trench excavated is included in Appendix C.
O-12			There is a potential discrepancy between the number of single point anomalies detailed here and that on ES-2/31.	Please clarify the apparent discrepancy.	The Executive Summary (ES.2) states that 3,621 single-point anomalies were identified. Section 4 (Table 4-1) further states that of the 3,621 single-point anomalies, 3,185 were selected for intrusive investigation by hand digging. The selection of the 3,185 single-point anomalies was based on the 5mV threshold applied to the DGM results and is discussed in detail in Section 4.1.2.3. Additional text will be added to ES.2 to state that only 3,185 single-point anomalies were intrusively investigated.
O-13	ES-4/30-31		The text states the following: "The future land use for the MRS is	Please cross-reference the first general comment in this table. The text in this	Agreed. This sentence will be removed from

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			considered as authorized activities that will access surface and subsurface soils.”	section does not provide enough information to determine reasonably anticipated future land use. Response required from the Army.	the text.
O-14	ES-5/20-21		Clarification requested.	The 2007 MKM report indicates that there were various metals (that could be munitions related), nitrocellulose and 2-Amino-4,6 Dinitrotoluene present in surface soils (and some of the same constituents in sediment). The explosive and propellant are munitions related. Additionally, Propellant can/ammo can lids were found in various trenches. On what basis was the decision made to not sample for MC and to state that the contaminants are not munitions related?	As stated in the Work Plan, sampling for MC was proposed only if concentrated areas of MEC or MD were found. No such MEC or MD was found (i.e., ammo can lids with no evidence of residue are not considered as MD) and no sampling for MC was performed.
O-15	Fig 1-1		Location Map	Please revise to indicate that the scale presented is solely for the upper map presented on this page.	Figure 1-1 will be revised to indicate that the scale presented is solely for the upper map.
O-16	1-4/20-21		The text states that future land use will include "military training."	Please cross-reference the first general comment in this table. The text in this section does not provide enough information to determine reasonable anticipated future land use. Response required from the Army	Please see response to Comment O-1

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O-17	1-11/28		Clarification requested	Please clarify that a "semi-improved administration area" is considered a habitat.	Reference to "semi-improved administration areas" as a habitat will be removed from line 28.
O-18	1-16/7		The text indicates that no cultural or archaeological surveys have been conducted in this area; then indicates that it is likely that they are present on the MRS.	On what basis is this statement made?	The text in Section 1.3.9 was provided by the Army during their review of the document. The text will be revised as follows to provide a basis for the statement: "The Atlas Scrap Yard MRS has not been previously surveyed for cultural or archaeological resources; however, due to the disturbed nature of the ground from former activities, it is unlikely that cultural/archaeological resources exist at the MRS."
O-19	1-18/14-20		This section of the text discusses 11 AOCs that were identified in the ASRs potentially containing MEC. Yet the text lists 12 AOCs.	Rectify the disconnect.	Section 1.5.1. The ASR identified 14 AOCS and 4 additional areas with the potential for MEC. Based upon the ASR 12 of those areas were identified as potential MRSs. Text will be clarified to: "Based on the ASR 12 of the 15 AOCs/locations with potential for MEC were identified as potential MRSs containing MEC. The potential MRSs based on the ASR were Ramsdell Quarry Landfill, Erie Burning Grounds, Open Demolition Area #1, Load Line 12 and Dilution/Settling Pond, Building 1200 and Dilution/Settling Pond, Quarry Landfill/Former Fuze and Booster Burning Pits, 40mm Firing Range, Building 1037–

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					Laundry Waste Water Sump, Anchor Test Area, Atlas Scrap Yard, Block D Igloo, and Tracer Burning Furnace.”
O-20	1-19/18-19		Format edit requested.	Make Group 8 a separate bullet.	Section 1.5.2. “Areas Between Buildings 846 and 849 (RVAAP-063-R-01) (now identified as “Group 8”) made into a separate bullet point between Water Works #4 Dump and Field at the Northeast Corner of Intersection.
O-21	1/20/Table 1-4 and line 26		In the Table, the MRSPP is listed as a 3; in the text it is listed as a 6.	Please rectify the discrepancy.	The SI MRSPP assigned the Atlas Scrap Yard MRS with a priority of 3. The text will be corrected to: “The Atlas Scrap Yard was assigned a Munitions Response Site Prioritization Protocol (MRSPP) priority of 3.”
O-22	2-4/17-25		The text references ARARs, TBCs, etc., and indicates that they will be provided in future CERCLA documents.	Provide Ohio EPA with a timeframe for receipt.	The requested timeframe for the submission of ARAR, TBCs, etc. is not known at this time. The purpose of the RI report is to provide the results of the RI field activities for further evaluation. The Army will address the concerns for submission of the ARARs, TBCs, etc. based on recommendations made following the evaluation of the RI results and conclusions by the stakeholders.
O-23	3-3/8-10		Clarification requested.	The text indicates that Ohio EPA did not permit vegetation removal in the NW	Email traffic will be included as Appendix B to the revised report. Subsequent appendices

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			Also: pages 4-1 to 4-2/32-4	corner wetland. Please provide in the revised report the email traffic that confirms this text. Additionally, please add to the text that due to potential damage to the wetland and/or inaccessible terrain the DGM data was not collected. Specifically, strengthen this portion of the text as to why DGM data was not collected in this portion of the MRS.	will be renamed accordingly. Reference to new Appendix C will be added to Section 3.1.1.2 where first referenced and again in Section 4.1.2. Stronger text describing the rationale behind not collecting DGM data in specific areas was added to Section 3.1.1.2 and Section 4.1.2 as follows: "The wetland at the northwest corner of the MRS is an environmentally sensitive area and vegetation removal at this portion of the MRS was not permitted per direction from the Ohio Environmental Protection Agency (Ohio EPA). The dense vegetation limited the ability for the DGM equipment to access the area and no DGM data were acquired at this portion of the MRS in order to avoid impacting the sensitive areas. In the southeast section of the MRS, no DGM data were acquired due to the presence of a debris pile and associated wetlands area that obstructed data collection. In the north-central section of the MRS, a debris pile consisting primarily of stacked railroad ties prevented DGM data collection at this location. Correspondence with the Ohio EPA regarding the protection of the environmental sensitive area at the MRS is provided in **Appendix B**." Figures 4-1 through 4-4 will show the location of the inaccessible areas at the MRS including the wetland area.

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O-24	Fig 3-1		Clarification requested	Clarify whether or not the areas that were not covered by DGM should be depicted. Specifically, was this map generated prior to the determination that there were wetlands and debris piles which made the areas inaccessible? If so, it can stay as it is, if not, please revise to depict the inaccessible areas.	Figure 3-1 was developed during the Work Plan stage and the proposed transects were placed prior to the determination that the presence of wetlands and debris piles would prevent the collection of DGM data. The intent of the showing the figure here is to provide the originally planned transects as presented in the WP. The actual transects where the wetlands and debris piles limited transects are presented in Figures 4-1 through 4-4 in Section 4.0, Remedial Investigation Results.
O-25	Table 4-1		Footnote requested.	Add a footnote to the table to clarify the difference between the number of anomalies identified vs. the actual number of anomalies I investigated.	A footnote will be added to Table 4-1 directing the reader to Section 3.1.2 where the rationale behind intrusively investigating 3,185 of the 3,621 identified single-point anomalies is discussed in detail. In column three, last row: "3,185 single-point anomalies[3]" Footnotes: "[3]selection of 3,185 of the 3,621 single-point anomalies was determined based on an EM61-MK2 signal strength (Channel 2) greater than 8 mV (Section 3.1.2). Subsequent footnote numbers updated accordingly.
O-26	Fig 4-1		Map clarification requested.	More clearly delineate where the DGM data were not collected. For example, put this area in a different colored	Figure 4-1 will be revised to more clearly indicate the areas that were not investigated during the RI. These areas will be outlined

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				outline.	and labeled on the figure.
O-27	Fig 4-2		Map clarification requested.	More clearly delineate where the DGM data were not collected. For example, put this area in a different colored outline.	Please see response to comment A-26.
O-28	Fig 4-2		Map clarification requested.	In the SE portion of the MRS, there is an area that is mostly inaccessible due to debris piles and associated wetlands; yet, it is also depicted as a high anomaly density area. Please figure out a way to depict this, so that the reader of the document isn't left with the impression that a high density anomaly area was not investigated.	The portions of transects shown in the polygon indicated depict high density burial areas; however, it is not known if the high density burial area continues beneath the debris pile or extends into the wetland since this area could not be investigated. Therefore, the high density area boundary will be redrawn to exclude the portion of the MRS where no DGM data was collected due to the presence of wetlands and debris piles.
O-29	Fig 4-3		Map clarification requested.	In the SE portion of the MRS, there is an area that is mostly inaccessible due to debris piles and associated wetlands; yet, it is also depicted as a high anomaly density area. Please figure out a way to depict this, so that the reader of the document isn't left with the impression that a high density anomaly area was not investigated.	See response to comment A-28.
O-30	6-1/Section 6.0		This section needs strengthening.	Before the last sentence that starts on line 11, add the following text: Section	It is recommended that the sentence "The MEC HA addresses human health and safety

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				1.3 of the MEC HA guidance explicitly states: "The MEC HA addresses human health and safety concern associated with potential exposure to MEC at a MRS."	concerns associated with potential exposure to MEC at a MRS" be added to Section 6.0 before the sentence that begins on Line 8.
O-31	7-1/Section 7.0		Text addition requested.	Indicate that the HHRA is being handled under the IRP. [Note: there were explosives and propellants found during the MKM study. I have not received the PBA08 document to know want the results are from that effort.]	Text added following the last sentence: "A HHRA is being conducted under the IRP since site-related chemicals were detected during previous IRP investigations."
O-32	8-1/Section 8.0		Text addition requested.	Indicate that the SLERA is being handled under the IRP. [Note: there were explosives and propellants found during the MKM study. I have not received thePBA08 document to know want the results are from that effort.]	Text added following the last sentence: "A SLERA is being conducted under the IRP since site-related chemicals were detected during previous IRP investigations."
O-33	9-1/Section 9.1		Text addition requested.	Add a sentence that indicates there had been a cleanup at this MRS in 2003.	The following text will be added to Section 9.1.1 after the last sentence of the first paragraph: "As discussed in Section 1.4, the CTT Range/Site Inventory reported that a MEC and MD removal activity had occurred at the MRS in 2003. During the HRR and subsequent investigations the type, location, and disposal of the items could not be verified."

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O-34	9-2/26-28		The text in this section states that the future land use is considered to be "authorized activities."	This sentence provides no information as to the reasonably anticipated future land use. Be advised that due to land use uncertainty, Ohio EPA may require additional work in the future to address data gaps. It is incumbent upon the Army to finalize land use at Camp Ravenna as soon as possible, otherwise additional work and schedule slippage may result.	Agreed. This sentence will be removed from the text.
O-35	9-3/33-34		This sentence needs to be revised as minimally, the 14 AOC document determined that there were hits of explosives and propellants in the surface soil. The reason no MEC/MD was likely found on the surface was due to the 2003 cleanup. Additionally, please explain the presence of ammo can lids.	Text revision required.	The last paragraph on pg 9-3 will be revised as follows to address the detects in the 14 AOC document: "This is not intended to imply that chemical contamination associated with past munitions sources is not present at the MRS; however, it is difficult to relate the previously detected chemicals to material originating from munitions without a defined source. The previous IRP investigations at the MRS have identified contaminants consisting of semivolatile organic compounds and metals in soils, sediment, surface water, and groundwater that exceeded the PRGs, the screening criteria previously used at the RVAAP. Low concentrations of an explosive were detected in surface soil, sediment and surface water. A propellant was detected in surface soil only. Neither the explosive or propellant concentrations exceeded the PRGs screening criteria (MKM, 2007). Existing

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					evaluation for contamination at the Atlas Scrap Yard MRS continues to be addressed under the IRP." The ammo can lids are mostly likely items that were buried at the MRS at some point. No residues were observed on the lids and the lids themselves are not considered as MD. Therefore, there is no explosive safety hazard associated with the lids and they are considered as scrap metal only.
O-36	Fig 9-1		The figure lists 0-4' bgs as surface soil for the National Guard Trainee.	0-4'bgs is defined as "deep surface" at RVAAP.	The soil depths presented in Figure 9-1 are typical of the depths defined for the receptors for chemical exposure. Figure 9-1 will be revised to remove references to the receptor depths for MEC. Under the MMRP, MEC exposure in surface soil is defined any MEC lying on or partially buried in the ground. MEC exposure in subsurface soil is defined as MEC item that is completely buried.
O-37	9-5		Text addition requested.	At an appropriate place in the revised text, indicate that in the event that MEC/MD is found at the MRS that the Army is responsible for cleanup.	The following text will be added to the end of Section 9.3, "Uncertainties": "Although the potential for MEC/MD items to be present at the MRS is considered to be low, in the event that MEC/MD is found at the MRS in the future, the Army will be responsible for subsequent removal and cleanup."

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O-38	10-3/17-20		Text addition requested.	Add text to support why a MEC HA was not conducted, given that a component of the MEC HA is MC and that MC has been found at the MRS in previous studies.	A MEC HA was not prepared since no MEC/MD items were identified during the RI and no MEC source or explosive safety hazard is present at the MRS. Sampling for MC was not performed for the RI since no MEC or MD was found. Data collected under the IRP is not typically considered as MC. The text has been strengthened as follows to support why a MEC HA was not prepared: "The *Interim MEC HA Methodology* (EPA, 2008) addresses human health and safety concerns associated with potential exposure to MEC at a MRS under a variety of site conditions, including various cleanup scenarios and land use assumptions. If an explosive hazard is identified for this RI, the MEC HA evaluation will include the information available for the MRS up to and including the RI field activities and provide a scoring summary for the current and future land use activities. If no explosive hazard is found at the MRS, then there is no need to calculate a MEC HA score since there are no human health safety concerns. No MEC or MD items were identified at the MRS during either the 2007 SI or 2011 RI field activities, which indicate that no MEC source or explosive safety hazard is present at the MRS. Therefore, calculation of a MEC HA score was not warranted for the Atlas Scrap Yard MRS."

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O-39	10-4 after line 6.		Text addition requested.	At an appropriate place in the revised text, indicate that in the event that MEC/MD is found at the MRS that the Army is responsible for cleanup.	Please see response to Comment O-37.
O-40	10-4/19-20		The text in this section states that the future land use is considered as to the reasonably be "authorized activities."	This sentence provides no information as to the reasonably anticipated future land use. Be advised that due to land use uncertainty, Ohio EPA may require additional work in the future to address data gaps. It is incumbent upon the Army to finalize land use at Camp Ravenna as soon as possible, otherwise additional work and schedule slippage may result.	Agreed. This sentence will be removed from the text.
O-41	10-5/8-10		This sentence needs to be revised as minimally, the 14 AOC document determined that there were hits of explosives and propellants in the surface soil. The reason no MEC/MD was likely found on the surface was due to the 2003 cleanup. Additionally, please explain the presence of ammo can lids.	Text revision required.	Please see response to Comment O-35.
O-42	10-5/After		Text addition requested	At an appropriate place in the revised text, indicate that in the event that	Please see response to Comment O-37.

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	line 31			MEC/MD is found at the MRS that the Army is responsible for cleanup.	
O-43	11-1		Add reference.	Add the Director's Final Findings and Orders.	The *Director's Final Findings and Orders* will be added to the references in Section 11.0.
O-44	App A/2-1/19-22		Clarification requested.	Clarify if this mode (i.e., the 4" mode) is the most sensitive.	One mode is not more sensitive than the other. The "4" mode provides a later time gate than the differential ("D") mode which can help determine if there are larger pieces of metal in the ground as well as provide additional information by providing an additional reading to calculate decay rates between each time gate. This will be clarified in the document.
O-45	App A/2-2/31-32		Clarification requested.	Clarify if the transect endpoints being located within an accuracy of 1 meter had any impact on target reacquire.	There referenced text in Section 2.0 does not apply to target reacquire locations. This section is discussing the placing of transects for the DGM investigation. The referenced sentence is stating that the end points of each transect was placed within an accuracy of one meter. Target reacquisition is discussed in detail in Section 6.0 of the DGM Report. The EM61 was used to reacquire target peaks at each location, and anomalies of the expected amplitudes were observed within the specified target radius of 1.4 feet at all locations. All targets were successfully

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					reacquired.
O-46	App A/3-2/1-6		Clarification requested.	The text indicates that Ohio EPA did not permit vegetation removal in the NW corner wetland. Please provide in the revised report the email traffic that confirms this text. Additionally, please add to the text that due to potential damage to the wetland and/or inaccessible terrain the DGM data was not collected. Specifically, strengthen this portion of the text as to why DGM data was not collected in this portion of the I MRS.	Email traffic will be included as Appendix B to the revised report. Stronger text describing the rationale behind not collecting DGM data in specific areas was added to Section 3.1 as follows: "The wetland at the northwest corner of the MRS is an environmentally sensitive area and vegetation removal at this portion of the MRS was not permitted per direction from the Ohio Environmental Protection Agency (Ohio EPA). The dense vegetation limited the ability for the DGM equipment to access the area and no DGM data were acquired at this portion of the MRS in order to avoid impacting the sensitive areas. In the southeast section of the MRS, no DGM data were acquired due to the presence of a debris pile and associated wetlands area that obstructed data collection. In the north-central section of the MRS, a debris pile consisting primarily of stacked railroad ties prevented DGM data collection at this location."
O-47	App A/Table 5-1		Clarification requested.	Clarify if any of the tests that were repeatable to +/- 2 mV had any I impact on the validity of the 8 mV cut-off.	These are standard tests to be sure 1) the unit is functioning consistently within accepted standards and 2) that there are not external noise sources nearby that are affecting the electromagnetic signal. All data for this project fell within the acceptable metrics and

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					there is no effect on the 8 mV cut off.
O-48	App A 5-3/1-8		Clarification requested.	Clarify if any of the tests that were repeatable to +/- 2 mV had any I impact on the validity of the 8 mV cut-off.	Please see response to comment O-47.
O-49	App A/5-4/2		Please add definition.	Describe what is meant by "significant scalloping" to the revised text.	The following text will be added to the Latency Correction bullet: "Scalloping is similar to a chevron or a latency that occurs between the GPS reading and EM61 reading. If there is any significant latency it can be depicted as offsets on linear features in the data as the DGM paths are typically collected in opposite directions on each pair of lines. As latency was not an issue this data does not show any sign of this effect."
O-50	ATT 2		Attachment revision requested.	Put the entire memo including figures in this attachment. Add the email traffic that approves the proposed intrusive locations.	The entire attachment including the figures and the DGM QA forms that provide Army approval are included in the report but a separate by a tab labeled "Figures". These are the figures that are referenced in comments O-51, -52 and -53. This tab will be removed to avoid confusion.
O-51	Figures		Figure #1	The legend is not legible. Please provide a legible legend.	Figure 1 of DGM technical memo has been revised to make the legend legible.
O-52	Figures		Figure #2	The legend is not legible. Please provide	Figure 2 of DGM technical memo has been

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				a legible legend.	revised to make the legend legible.
O-53	Figures		Figure #3	The legend is not legible. Please provide a legible legend.	Figure 3 of DGM technical memo has been revised to make the legend legible.
O-54	App B	App C	B-1	Please revise the figure to indicate that there were 6 trenches in the suspected 40 mm burial area.	The figure is accurate. The six trenches at the suspected 40 mm burial area (the area defined in the work plan) include trenches 40-1 through 40-6. Trenches 40-3 through, 40-6 were conducted in the actual boundaries of the original anticipated suspected burial area. Trenches 40-1 and 40-2 were performed just outside and along the boundary of the suspected burial area and although these trenches are technically outside of the area, they were considered part of the suspected burial area investigation during the field activities. Photographs 10 and 11 in Appendix B (now Appendix C) will be revised to state that the trenches are outside of the suspected 40mm burial area. The text in the ES, Section 4.1.2, Table 4-1, Section 4.1.2.1, Section 4.1.3.1, Section 9.1.2, and Section 10.1 will be revised to indicate that four high density anomaly areas were identified within the suspected 40mm burial area and two high density anomaly areas were identified adjacent to the southeast.

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O-55	App B	App C	B-8/photo 14	Army: The picture depicts an ammo can lid. A cleanup of prop can lids will be done at Group 2. What is the plan for this area?	Please see response to Comment O-4 regarding future disposition of debris.
O-56	App B	App C	B-10/photo 18 depicts an empty 55 gallon drum.	Army: was this area sampled during the IRP? Why was this not removed?	During the IRP RI, this empty drum was seen within the ASY-086M ISM sample footprint (per SAIC). There were no contents to sample, so no discrete sample was collected. Without signs of a release, or the ability of the crushed drum to cause a release, there was no need to remove this scrap steel from the former scrap yard.
O-57	App C/C-53	App D	Trenches 09-1, 40-3, and possibly 40-4 and 40-5 reference ammo can lids.	Army: what is the plan for this area, given that Group 2 will be cleaned up for the same type of material?	Please see response to Comment O-4 regarding future disposition of debris.
O-58	App D/D-1	App D	In the MRS summary section, the text indicates that the 2003 event could not be confirmed.	Provide a list of personnel spoken with and references searched.	Shaw has reviewed the available data bases (i.e., RVAAP.org and REIMS) and has spoken with Gail Harris who manages the RVAAP library. No information regarding the 2003 removal action has been found to date. The text will be revised as follows: "However, neither the UXO discovery nor the 2003 event could be confirmed or the types of MEC/MD identified during review of the applicable data bases and depositories (RVAAP.org, the Ravenna Environmental Information System, and the RVAAP

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					library).
O-59	App D/D-1/MRS Summary	App E	The 14 AOC documented MC.	That should be reflected in this description and in the revised MRSPP.	Please see response to Comment O-10
O-60	App D/ Modules 21-28	App E	Were the results from the MKM 14 AOC document and the more recent Rl by SAIC used to come up with the HHE and ultimately the revised MRSPP?	If not, go back and rescore this MRS using the data available.	Please see response to Comment O-10.

Appendix G
Ohio EPA Approval Letter

Note: This is a placeholder page. CB&I Federal Services LLC will supply a signed authorization page to be inserted into the final hard copy document as soon as it becomes available. Replacement CDs that include the signed authorization page will also be supplied.

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