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TREATABILITY TEST WORK PLAN (SOIL SCREENING TESTING) AIRFIELD SMALL ARMS RANGE (SEAD-122B)

00348

Prepared For:

Seneca Army Depot Activity
Route 96
Romulus, NY

U.S. Army Corps of Engineers
Huntsville Engineering and Support Center

and

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Project Manager: _____ 8-26-03
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AUGUST 2003

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LIST OF ACRONYMS

ELECB	U.S. Army Corps of Engineers Environmental Laboratory, Environmental Chemistry Branch
HASP	Health and Safety Plan
LIMS	Laboratory Information Management Systems
MRD	Missouri River Division
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
PPE	Personal Protection Equipment
ppm	Parts Per Million
QAPP	Quality Assurance Project Plan
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
SAP	Sampling and Analysis Plan
SAR	Small Arms Range
SOP	Standard Operating Procedure
TCLP	Toxicity Characteristic Leaching Procedure
TWA	Time-Weighted Average
US	United States
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
WP	Work Plan

SECTION 1

INTRODUCTION

1.1 PURPOSE AND OBJECTIVES

This Work Plan (WP) details the scope of work, as contemplated in the *Characterization Report and Treatability Work Scope For The Airfield Parcel (SEAD-122B) Small Arms Range* (SAR) (Parsons, October 2002) at the Seneca Army Depot in Romulus, New York.

1.1.1 Purpose

The treatability work (excavation, screening, and confirmation sampling) will be done to explore the effectiveness of "dry screening", which is a method of treating soils in SAR's by reducing the total lead content. The soil will be chosen from isolated areas where concentrations of lead found during the investigation were greater than 400 parts per million (ppm). This WP outlines the work activities for completing a treatabilty study of the impacted soils.

1.1.2 Objectives

This treatability study will assess the effectiveness of mechanical removal (i.e. dry screening) of bullets from range soils to reduce lead concentrations in the soil. Effectiveness will be measured in recovery of lead bullets, cost of operation and soil quality following removal.

Following the dry screening, sampling will be conducted to assess the condition (soil quality) of the treated soils. The samples will be analyzed for total lead concentration.

Following the excavation, confirmation sampling will be conducted to assess the soil quality in excavated areas prior to backfilling. The confirmation samples will be analyzed for total lead concentrations.

The following guidance value will be used to assess soil quality:

- Total lead concentration; 400 ppm. Less than 400 ppm shall be considered reusable; greater than 400 ppm shall be considered non-reusable.

Following completion of this treatability study, the Army will prepare a report of the treatability study results. At that time, the Army expects to be well positioned to assess the further course of the RI/FS at this site and to recommend separately, with sufficient specificity, the balance of response activity appropriate for this site. As part of this document, the Army will propose, consistent with the proposed use of the site, whether and, if so, what kind of remedial or removal action should be performed at the site.

1.2 SCOPE

The anticipated scope of work does not include any experimental designs or procedures. The treatability study will utilize standard construction techniques, standard constuction equipment and will include the following tasks:

Mobilization/Site Preparation
Excavation – Approximately 750 cubic yards.
Lead/Bullet Particle Separation/Screening – Approximately 500 cubic yards.
Disposal – Dispose of soil with lead concentrations exceeding 400 ppm.
Site Restoration – Backfill and erosion control.

These tasks are fully described in Section 2.

1.3 GENERAL SITE DESCRIPTION

The Seneca Airfield SAR consists of two bermed small arms ranges, one used for small arms and the second for machine gun targeting (Figure 1). The small arms range and machine gun firing range berms are comprised of approximately 28 feet of brown to dark brown to gray, silt with clay with interbedded shale, and traces of fine sand and fine to medium gravel. The soil description is based on the drilling of seven soil borings from the top of the berms in June 2002 (Parsons, October 2002).

There have been modifications to the size and shape of the firing lanes and berms since initial construction by the Army in the 1940's. The current configuration consists of a 20-lane small arms range with protective wooden baffles, and a two-lane machine gun range. The berms form a horseshoe-shaped protective barrier around each range to trap stray rounds and to protect the bunker and airfield areas behind the range. The west-trending topographic gradient is relatively flat. The Airfield SAR has a network of footer drains along each baffle/target line. These drains collect runoff from the berms (maximum height 28 feet) to grassed expanses that convey surface water to the open area located west of the range. No obvious depressions where surface water could collect are apparent at this site.

1.4 HISTORIC OVERVIEW OF OPERATIONS

The Airfield SAR is located within the Seneca Army Depot, a 10,587 acre facility in Seneca County, Romulus, New York (Figure 2). The facility has been owned by the United States Government and operated by the Department of the Army since 1941. Since its inception in 1941, SEDA's primary mission was the receipt, storage, maintenance and supply of military items.

The Airfield SAR was operated by the Army, Navy and Air Force since the 1950's for small arms range qualification of base and security personnel.

1.5 PERFORMANCE STANDARDS AND REGULATIONS

The following have been identified as appropriate and relevant standards for this work:

- Soil – Criteria in accordance with the United States (US) Environmental Protection Agency (EPA) residential guideline for lead in soil.

- Solid Waste – Criteria in accordance with USEPA SW-846, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* (USEPA, 1996).

1.6 SUMMARY OF PREVIOUS INVESTIGATION

The Army performed a characterization study at the site in June-July 2002, similar to a Phase I Remedial Investigation. This study demonstrated no impacted groundwater at or adjacent to the site, but some elevated lead concentrations, in soil, were detected along portions of the berm perimeter and isolated areas on the range floor and drainage swale (Figure 3).

Lead was identified as the major constituent of concern. A soil treatability study was proposed. This work plan is based on the proposed treatability study work scope presented in the characterization report (Parsons, October 2002).

SECTION 2

WORK SCOPE

2.1 SOIL EXCAVATION

2.1.1 Mobilization/Site Preparation

Mobilization and site preparation will include the following tasks

- Demolition and off-site disposal of the existing range baffles and targets.
- Off-site disposal of the pea gravel and miscellaneous demolition debris.
- Clearing and grubbing, as necessary, the area between the shooter platform and the berm/backstop.
- Construction of a bermed and lined (10-mil poly) decontamination area.
- Conducting physical property and sieve analysis of the soils at an off-site laboratory.

2.1.2 Excavation Areas

Approximately two to three feet of soil (approximately 500 cubic yards) will be excavated from the impact berm areas. Approximately six inches of soil (approximately 100 cubic yards) will be excavated from the bottom of the drainage swale. Following the treatability study work, approximately three inches of soil (approximately 150 cubic yards) will be excavated from areas affected by the screening operations. See Figure 3 for proposed excavation areas. A hydraulic excavator will be used to mechanically excavate the soils.

2.1.3 Erosion Control

Temporary erosion control measures such as hay bales and silt fence may be used for erosion control. Water run-on and run-off is not expected to be a problem due to the short duration of the project and the flatness of topography. Erosion control measures shall be established during the excavation on an as-needed basis.

Silt fencing and/or hay bales will be placed around the perimeter of all temporary stockpiles. The stockpiles will be covered with 6-mil poly when not being actively worked on.

2.1.4 Dust Control

Water obtained from an on-site source (hydrant water) will be used, as necessary, to reduce dust emissions. Water will be applied to control fugitive emissions, but not cause excessive runoff. Generally, if dust levels are visible, dust suppression methods will be employed.

2.2 STOCKPILE AND SCREENING AREAS

Stockpile and screening areas will be set up within the confines of the SAR as shown on Figure 3. Soil berms will be constructed around the stockpile/screening area. Excavated soils

will be stockpiled into three (3) equally sized piles within the confines of this temporary work area.

2.3 SCREENING OPERATIONS

Prior to the start of the excavations, soil from the proposed excavation areas will be collected and sent to an off-site laboratory for testing of physical properties. Physical property testing will include a sieve analysis, hydrometer analysis, Atterberg limits, natural moisture content, bulk soil density, specific gravity and separation and weighing of extraneous materials.

A commercially available power screen, such as a Nordberg SW348 or equivalent, will be used to screen the excavated soils (approximately 500 cubic yards). Three separate screen sizes will be tested to assess the effectiveness of each individual screen size. Soil will be placed onto the screen and shaken. The amount of soil that passes and does not pass each screen size will be recorded.

Oversize inert materials, (such as rocks, concrete, bricks, wood, debris, etc.) that do not pass the screens will be inspected for bullets. If there are no bullets, the rocks, concrete and bricks will be considered clean and re-usable as backfill. Wood and general debris will be disposed of off-site as non-hazardous debris.

Soil that does pass the screens will be stockpiled, separately from the oversize material, and inspected for bullets, bullet fragments and any evidence of contamination. Results of the inspection will be recorded. Whether bullets are observed or not, samples will be collected for analysis of total lead concentration.

Bullets that get screened out of the soil will be segregated and recycled and/or disposed of off-site, as appropriate.

2.4 SAMPLING OF EXCAVATED AND SCREENED SOILS

Following the excavation and prior to screening, samples will be collected from the stockpiles to assess the prescreened lead concentrations.

Following the screening operation, samples will be collected from the size-screened stockpiles.

Field procedures are described in Section 3.

2.4.1 Sample Type, Number and Location

One composite sample will be collected from each of the soil stockpiles prior to screening. Grab samples will be collected from five random locations in each stockpile and composited into one homogenized sample.

One composite sample will be collected from each of the screened soil stockpiles. Grab samples will be collected from five random locations in each stockpile and composited into one homogenized sample.

2.4.2 Analytical Parameters

Soil samples collected prior to screening and following the screening will be analyzed for total lead by EPA Method 6010B (Table 1).

2.5 SAMPLING OF REMAINING SOILS IN EXCAVATED AREAS

Following excavation of soils used for the treatability testing, soil excavated from the drainage swale and soils from the range floor under the temporary screening area, samples will be collected.

2.5.1 Sample Type, Number and Location

Nine (9) discrete confirmation samples will be collected from the excavation areas (Figure 3).

2.5.2 Analytical Parameters

Confirmation samples will be analyzed for total lead by EPA Method 6010B (Table 1).

2.6 SAMPLING OF SCREENED SOILS FOR DISPOSAL

If the screened soils exhibit total lead concentrations greater than 400 ppm, the soil will be disposed of off-site. Prior to off-site disposal, the soil will be sampled and analyzed for hazardous waste characteristics and other disposal parameters, as required by the selected disposal facility.

2.6.1 Sample Type, Number and Location

No new samples will be collected. Following lead concentration testing of the soil stockpiles (Section 2.4.1), samples with total lead greater than 400 ppm will be further analyzed for off-site waste disposal characteristics.

2.6.2 Analytical Parameters

Waste characterization samples will be analyzed for flammability, toxicity, reactivity and corrosivity. The proposed parameters and methods are listed on Table 1.

2.7 DATA ANALYSIS AND INTERPRETATION

2.7.1 Lead Standard

Screened soil will be analyzed for total lead concentration following each size screening. Total lead concentrations will be compared to the standard of 400 ppm. This is the EPA residential action level that is protective of human health.

Confirmation samples collected in the excavated areas will be analyzed for total lead concentration. Total lead concentrations will be compared to the standard of 400 ppm.

Soils that do not exceed 400 ppm total lead concentration will be considered reusable for on-site backfill.

Soils that exceed 400 ppm total lead concentration will be considered unusable for backfill. This soil will be considered contaminated, characterized for waste disposal parameters, and disposed of off-site.

2.7.2 Data Management

Data will be collected and analysed, as per the methods specified herein. Chain of custody documentation shall accompany all sample shipments. Data will be reviewed by the Project Manager for accuracy and completeness.

2.7.3 Quality Control

Data validation will be performed in accordance with the most current editions of the USEPA Region II SOPs HW-2 and HW-7, with consideration for the methodology and project requirements.

Quality control procedures are described in Appendix C of the *Generic Installation Remedial Investigation/Feasibility Study Work Plan for Seneca Army Depot Activity in Romulus, NY* (Parsons, June 1995 & Amendments in Appendix A).

2.8 DISPOSAL REQUIREMENTS

2.8.1 Soil and Miscellaneous Debris

Soil that contains 400 ppm or less of total lead will be used as site backfill. Soil containing greater than 400 ppm total lead will be properly characterized and disposed of off-site.

If the soil contains greater than 400 ppm total lead and during disposal characterization is found to contain leachable lead less than 5 mg/L, by TCLP test methods, the soil will be disposed of off-site as a non-hazardous waste.

If the soil contains greater than 400 ppm total lead and during disposal characterization is found to contain leachable lead greater than 5 mg/L, by TCLP test methods, the soil will be disposed of off-site as a hazardous waste.

Load, transport and dispose of lead contaminated soils excavated from the swale (100 cubic yards) and the floor of the range (150 cubic yards) at an off-site landfill.

Miscellaneous debris, such as wood and poly sheeting, will be disposed of off-site as a non-hazardous material.

Personal Protective Equipment (PPE) will be collected and disposed of off-site along with any contaminated soil.

2.8.2 Decontamination Water

Water generated during this project will be disposed of by sprinkling onto the soils that will be disposed off-site and/or drumming the water and transporting to a permitted off-site disposal facility.

2.9 DECONTAMINATION

A temporary decontamination area will be used for decontaminating equipment prior to demobilization. Equipment that has been contaminated by the operations, (i.e. heavy equipment, hand tools, etc.) will be washed with water in this area to remove accumulated debris. Wash waters will be collected and properly disposed of off-site. Debris removed while cleaning will be shipped off-site along with the contaminated soil. Contaminated consumable materials, such as PPE and other consumables will be disposed of off-site along with the contaminated soil.

2.10 SITE RESTORATION

Excavated areas will be backfilled with screened soils that contain total lead in concentrations less than 400 ppm.

An erosion control blanket will be placed over the berm/backstop and anchored into place to provide temporary erosion control until the site is transferred. Cover soil and seeding will not be required at this time.

2.11 HEALTH AND SAFETY

2.11.1 Dust Monitoring

Dust monitoring will be conducted with real-time aerosol monitors during field activities. The action level for total dust in air is 5 mg/m3. Dust will be periodically monitored, downwind of the work area at temporary particulate monitoring locations.

2.11.2 Lead Monitoring

In compliance with the Occupational Safety and Health Administration (OSHA) Lead in Construction Standard (29 CFR 1926.62), a written Lead Compliance Program (Appendix A) will be followed. During initial intrusive activities air samples will be collected daily, in the breathing zone, using an air sampling pump and filter cassette. Samples will be sent to Galson Laboratories in East Syracuse, NY for analysis. Samples will be compared to the action level (30 micrograms per cubic meter of air calculated as an 8-hour time-weighted average) for lead.

2.11.3 Community Air Monitoring Plan

Because the site is secluded and away from any community contact, a community air monitoring plan is not required. However, real-time air monitoring, for particulate levels will be done as described in 2.11.1.

2.12 SCHEDULE

Tasks 1-8 (field work) will be accomplished over a three month time frame as follows:

Task 1: Project notification requirement (30 days prior to start of excavation) – This WP shall be considered official notification of the start of the project.

Task 2: Mobilization/Site Preparation – 2 weeks for mobilization and 2 weeks for site preparation, anticipated start Mid October 2003;

Task 3: Excavation – 1 week following completion of Task 2;

Task 4: Lead/Bullet Screening – 1 week following completion of Task 3;

Task 5: Sampling – immediately following completion of Task 3 and Task 4;

Task 6: Analytical – 3 weeks following completion fo Task 5;

Task 7: Disposal – 2 weeks following completion of Task 6;

Task 8: Site Restoration –1 week following completion of Task 7.

Task 9: Treatability Study Report – 90 days after completion of Task 8.

2.13 COST

The estimated cost for performing this treatability work scope is $250,000. This cost is based on sound and reasonable engineering construction estimates for the various defined tasks.

2.14 PERSONNEL AND EQUIPMENT REQUIREMENTS

The following represents the major labor and equipment requirements for this treatability study.

2.14.1 Personnel

One Site Superintendent/Site Safety Officer, two to three heavy equipment operators and two to three laborers. In addition, there will be a field engineer assigned to take samples and ensure quality control.

2.14.2 Equipment

Standard construction equipment will include a track excavator, loader and power screen.

2.14.3 Temporary Facilities

Parsons maintains a project office at the site. The project office includes telephone, fax, project files, the Final Work Plan, and HASP. A field trailer and a hand and eye wash station will be temporarily stationed at the worksite. Small tools, PPE and other required materials will be kept in the field trailer.

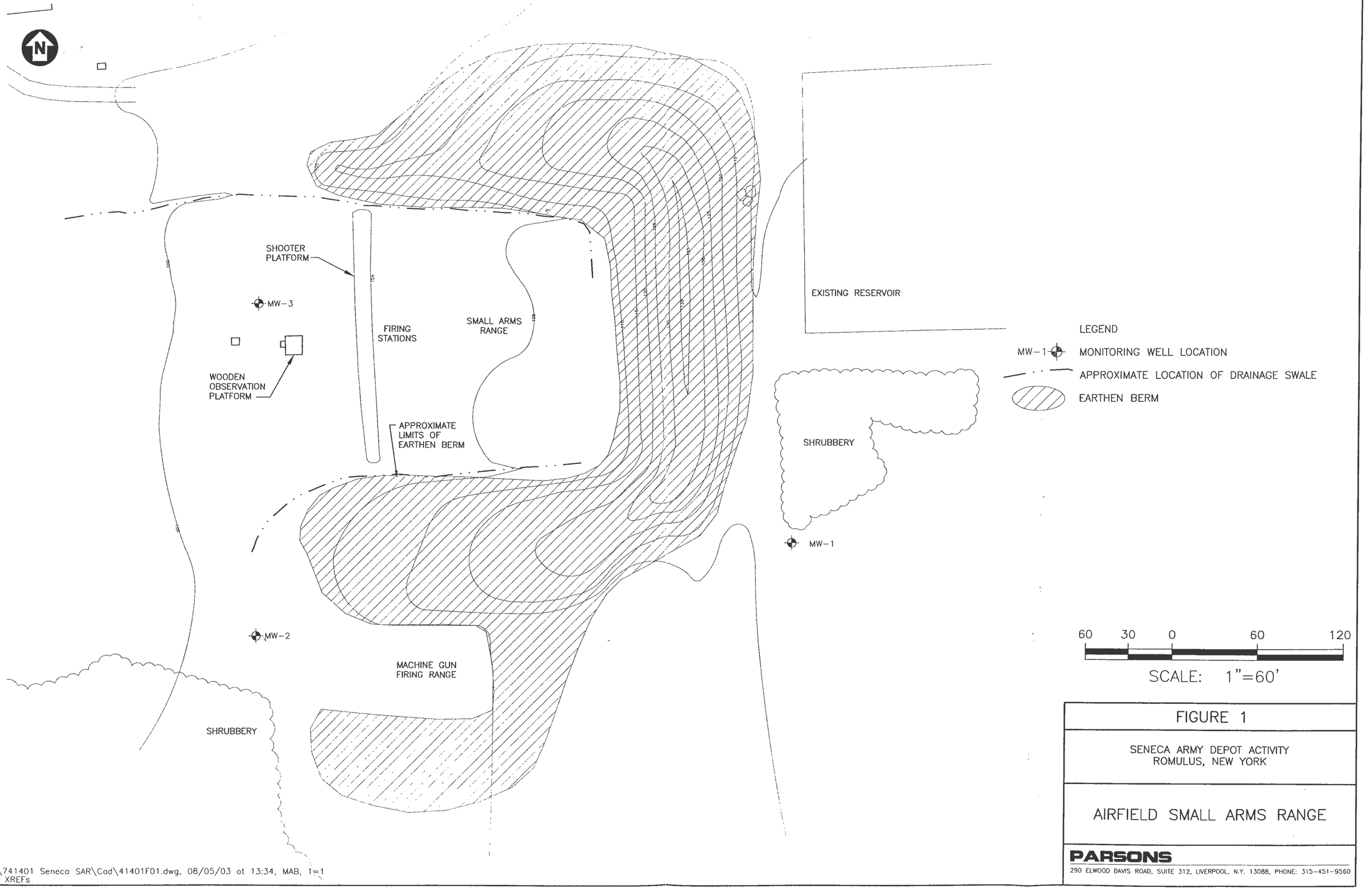

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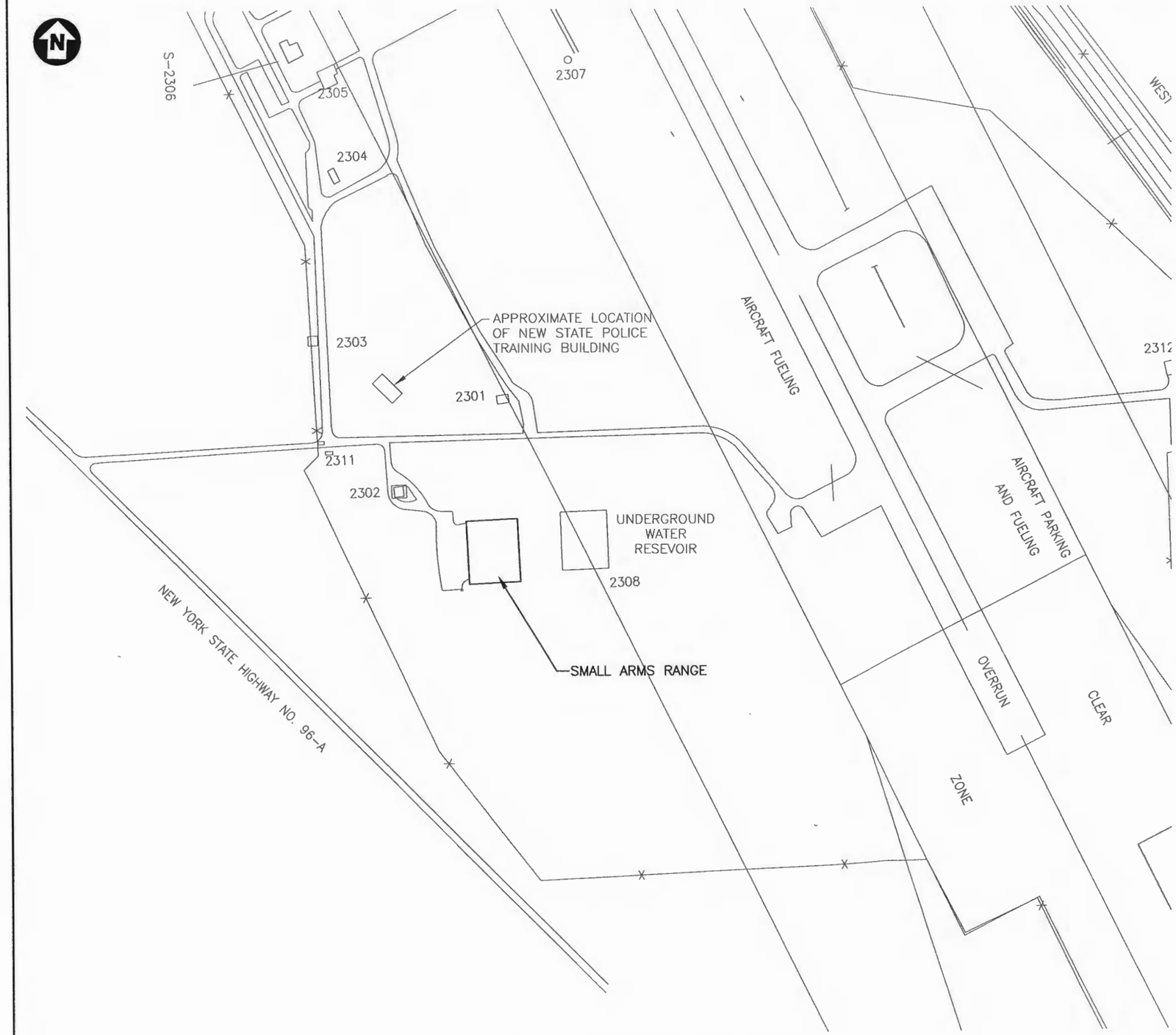
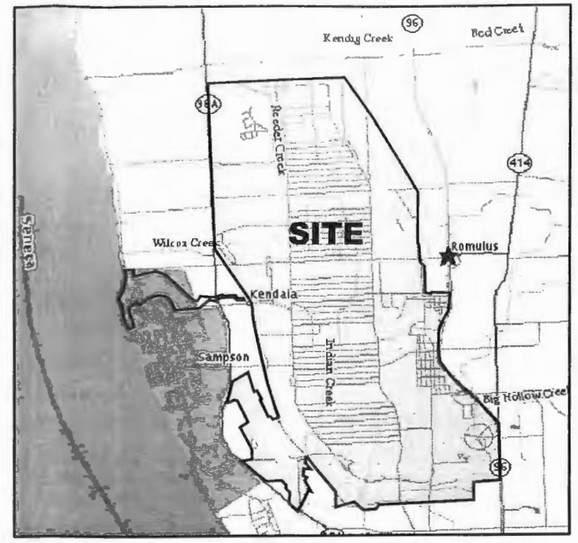
FIGURE 1

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

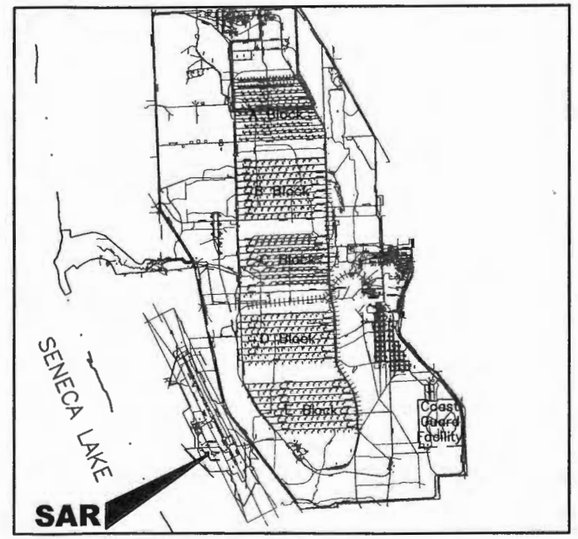
AIRFIELD SMALL ARMS RANGE

PARSONS
290 ELWOOD DAVIS ROAD, SUITE 312, LIVERPOOL, N.Y. 13088, PHONE: 315-451-9560





REGIONAL MAP
SCALE: 1 INCH=2.5 MILES
SOURCE: Mapquest.com



SITE MAP
SCALE: 1 INCH=10,000 FEET

FIGURE 2

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

SMALL ARMS RANGE
SITE LOCATION PLAN

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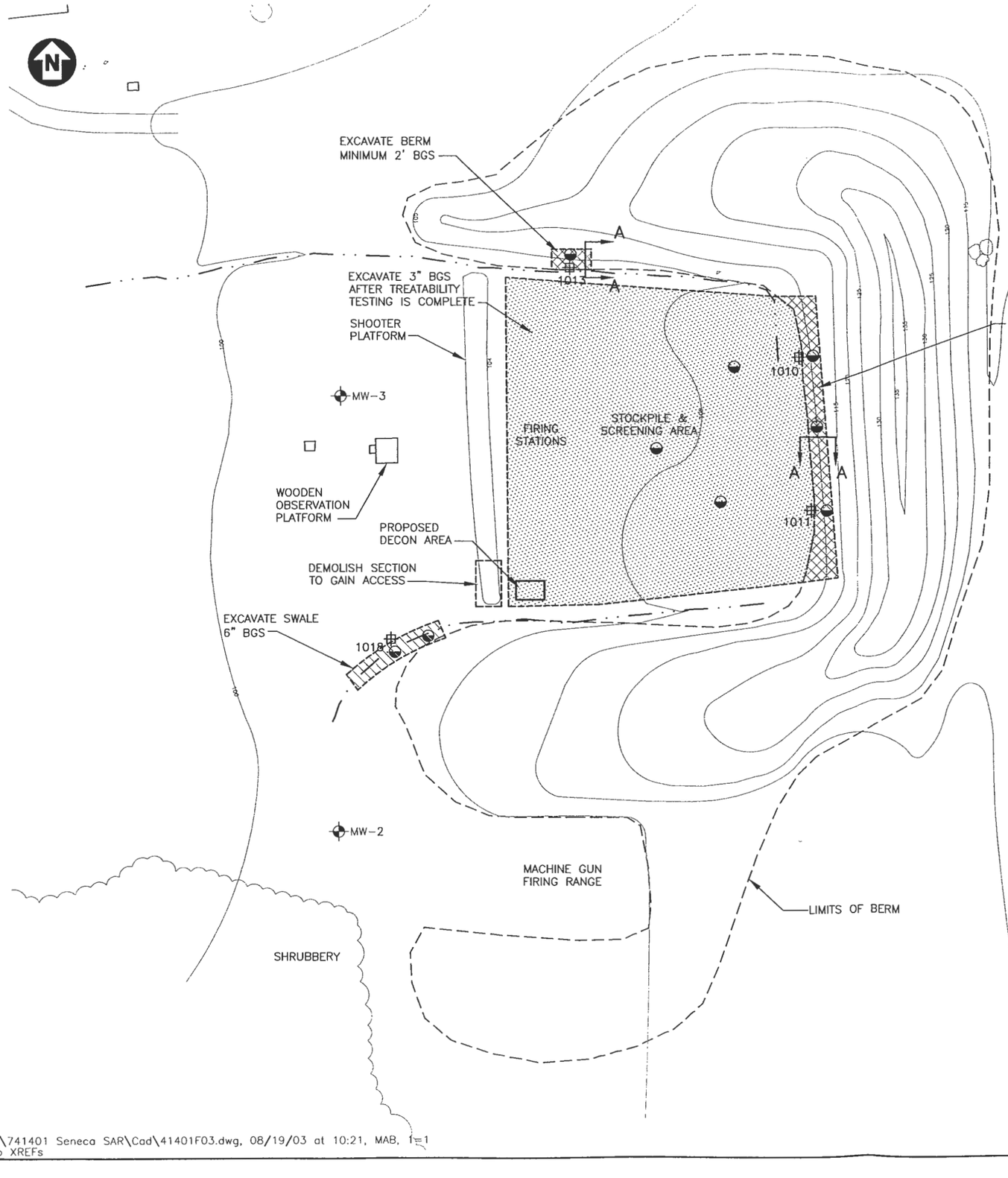

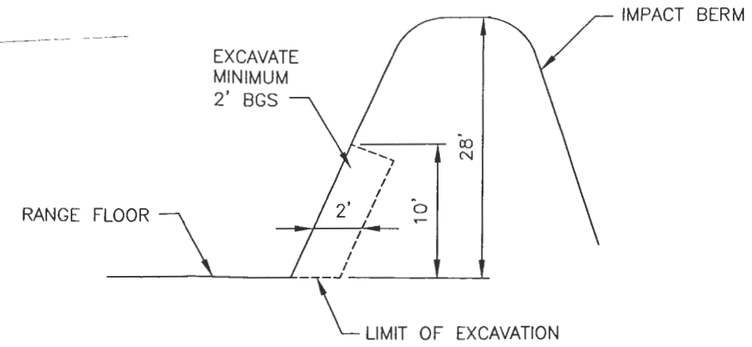

SECTION A–A
NOT TO SCALE

LEGEND

- MW–1 ⊕ MONITORING WELL LOCATION
- ⌗ SAMPLE LOCATIONS FROM CHARACTERIZATION REPORT > 400ppm TOTAL LEAD
- ◒ PROPOSED SURFACE SAMPLE LOCATION 0–6" BGS
- APPROXIMATE LOCATION OF DRAINAGE SWALE
- EXCAVATION AREA 2–3' BELOW GRADE SURFACE
- EXCAVATION AREA 6" BELOW GRADE SURFACE
- EXCAVATION AREA 3" BELOW GRADE SURFACE/ STOCKPILE SCREENING AREA

60 30 0 60 120

SCALE: 1"=60'

CHARACTERIZATION REPORT ANALYTICAL
> 400ppm TOTAL LEAD

SAMPLE #	TOTAL LEAD (ppm)
1010	13,100
1011	88,700
1013	1,190
1018	927

FIGURE 3

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

EXCAVATION AREAS
AIRFIELD SMALL ARMS RANGE

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SECTION 3

FIELD SAMPLING PLAN

This Field Sampling Plan describes the guidelines for screened soil stockpile sampling, confirmation sampling and waste characterization sampling. Specific field procedures are described in the Sampling and Analysis Plan (SAP) located in Appendix A of the *Generic Installation Remedial Investigation/Feasibility Study Work Plan for Seneca Army Depot Activity in Romulus, NY* (Parsons, June 1995 & Amendments in Appendix B).

3.1 SAMPLING OBJECTIVES

The sampling objectives for the project are as follows:

- Obtain lead concentrations of remaining soils in excavated areas;
- Obtain lead concentrations of screened soils excavated from the berm/backstop areas;
- Characterize the soils exceeding 400 ppm total lead for off-site disposal;
- Obtain dust levels at the work site perimeter and;
- Provide employee exposure monitoring for lead.

3.2 CONFIRMATION SAMPLING

After the proposed excavated soils are removed, soil samples will be collected from the bottom of the excavated areas. Discrete soil samples will be collected as shown on Figure 3. Confirmation sample locations will be taken in areas that had lead greater than 400 ppm prior to excavation and in areas affected by the treatabilty testing. Nine (9) discrete samples will be collected within the surface to 6-inch depth interval.

Manual sampling methods will be employed to collect samples. A stainless steel scoop will be used to collect individual aliquots.

The soil samples will be analyzed for total lead (analytical methods are specified on Table 1).

Laboratory turn-around-time will be field determined on an as-needed basis. The field supervisor will determine how critical is the time needed for results based on current and planned field operations. In general, three week turn-around-time is expected, but this can be expedited as necessary.

3.3 SCREENED SOIL SAMPLING

Screened soils will be stockpiled into three separate piles based on the screen size used. The stockpiled soils will be composite sampled. Grab samples from five random locations within each stockpile will be composited into one sample for analysis.

Manual sampling methods will be employed to collect samples. A stainless steel scoop will be used to collect individual aliquots. These aliquots will be placed into a stainless steel bowl for homogenizing by manual mixing.

A representative sample will be taken from the mixture and placed into an appropriate container.

The soil samples will be packaged and sent off-site. The samples will be analyzed for total lead (analytical methods are specified on Table 1).

If the results for total lead are less than 400 ppm, the soil will be visually inspected for contamination. If there is no evidence of contamination, the soil will be reused on-site for backfill. If there is evidence of contamination, the material will be considered a waste and disposed of off-site.

If the results for total lead are greater than 400 ppm, the composite sample will be analyzed off-site disposal parameters.

3.4 WASTE CHARACTERIZATION

3.4.1 Screened and Stockpiled Soils

Excavated soils will be screened into three separate stockpiles, based on screen size. If the screened soils exhibit lead concentrations greater than 400 ppm, the soils will be characterized for off-site disposal.

The soil samples will already be at the laboratory (see Section 3.3). The composite samples will be analyzed for hazardous waste characteristics including ignitability, corrosivity, reactivity and toxicity (analytical methods are specified on Table 1).

3.4.2 Oversize (>2-inch) Debris

Debris (i.e., material over two inches) is not contaminated. Therefore, material greater than two inches will be mechanically and/or manually separated. These materials will be inspected for loose soils and brushed, if necessary. No samples will be taken from the greater than 2-inch debris material.

3.5 AIR SAMPLING

3.5.1 Perimeter Air Monitoring

Air sampling will be conducted during the start of any new construction activities. One sample per day will be collected at a downwind location, at the Exclusion Zone perimeter. The sample will be analyzed for total lead. An air sampling pump (SKC-Aircheck 52 model vacuum

pump rated for 1-2 l/min of airflow through self enclosed canisters containing filter media or equivalent) will be used. Analytical results will be assessed and monitoring will continue or be discontinued following review of the results by Parsons Health and Safety Officer.

3.5.2 Personal Air Monitoring

Personal air monitoring to assess employee exposure will be performed using personal sampling pumps placed on job personnel simulating the greatest risk exposures. An exposure assessment will be conducted. PPE levels will be based on this exposure assessment. If a negative exposure assessment is obtained, personal monitoring will be stopped. See Appendix C for the Lead Compliance Program.

TABLE 1
SUMMARY OF SAMPLES AND ANALYTICAL REQUIREMENTS

POST-EXCAVATION CONFIRMATION SAMPLES

MEDIUM	TYPE	PARAMETER	ANALYTICAL METHODS
Soil	Discrete	Lead	SW846 6010B

SCREENED SOILS SAMPLES

MEDIUM	TYPE	PARAMETER	ANALYTICAL METHODS
Soil	Composite	Lead	SW846 6010B

WASTE CHARACTERIZATION SAMPLES (SOILS WITH LEAD >400 PPM)

MEDIUM	TYPE	PARAMETER	ANALYTICAL METHODS
Soil	Composite	TAL Metals	SW846 6010B
Soil	Composite	Mercury	SW846 7470A
Soil	Composite	TCL SVOC	SW846 8270C
Soil	Composite	TCL VOC	SW846 8260B
Soil	Composite	TCL PCB	SW846 8082
Soil	Composite	TCL Pesticides	SW846 8081A
Soil	Composite	TCLP Extraction	SW846 1311
Soil	Composite	Corrosivity (pH)	EPA 150.1 or SW846 9045C
Soil	Composite	Ignitability (Flashpoint)	SW846 1010 or 1020A
Soil	Composite	H2S Reactivity	SW846 9012A
Soil	Composite	HCN Reactivity	SW846 9034

PERSONAL AIR SAMPLES

MEDIUM	TYPE	PARAMETER	ANALYTICAL METHODS
Air	Cassette	Lead	NIOSH 7300

APPENDIX A

AMENDMENTS TO APPENDIX C (QAPP) OF:

Generic Installation Remedial Investigation/Feasibility Study Work Plan for Seneca Army Depot Activity in Romulus, NY (Parsons, June 1995)

TABLE C-1

REQUIRED CONTAINERS, PRESERVATION AND HOLDING TIMES

	Containers[1]	Preservation	Maximum Holding Time from VTSR (see Note A)		
Soil, Asbestos, Other Solids, Oil, and Other Liquids					
Metals, except Mercury	G[5]	Cool, 4°C	180 days		
Volatiles	G[7]	Cool, 4°C	10 days		
Semi-Volatiles	G[6]	Cool, 4°C	10/40 days[4]		
Pesticides/PCBs	G[6]	Cool, 4°C	10/40 days[4]		
TCLP			From collection to TCLP extraction	From TCLP extraction to preparative extraction	From preparative extraction to analysis
Volatiles	G[7]	Cool, 4°C	14 days	NA	14 days
Semi-Volatiles	G[6]	Cool, 4°C	14 days	7	14 days
Mercury	G[5]	Cool, 4°C	28 days	NA	28 days
Metals, except Mercury	G[5]	Cool, 4°C	180 days	NA	180 days

Notes:

A VTSR = Verified Time of Sample Receipt
1 Polyethylene (P) or Glass (G)
4 5 days from VTSR/40 days from extraction to analysis
5 500 ml glass container with polyethylene liner
6 250 ml amber glass container with Teflon-lined cap or closed end tube (i.e. brass sleeve)
7 3 40 ml glass vial with Teflan-lined cap (water), glass container or closed end tube (soil)

This Table amends: *Generic Installation Remedial Investigation/Feasibility Study Work Plan for Seneca Army Depot Activity in Romulus, NY* (Parsons, June 1995)

TABLE C-2
PARAMETER LIST FOR INORGANIC AND ORGANIC ANALYSES

Soil and Sediment Analyses	Preparation Method	Analytical Method	CRQL Limits (ug/Kg)
Inorganics (TAL)[5]			
Lead	NYSDEC CLP	NYSDEC CLP	30
Organics			
TCL Volatile Organics	NYSDEC CLP	NYSDEC CLP	Table C-3
TCL Semivolatile Organics	NYSDEC CLP	NYSDEC CLP	Table C-4
TCL Pesticide/Arochlors	NYSDEC CLP	NYSDEC CLP	Table C-5
RCRA Characteristic Test			
Ignitability	1110	1010 or 1020A	Table C-9
Corrosivity Towards Steel	1110	9045C	Table C-9
Reactivity			Table C-9
Total Releasable CN	9010B	9012A	Table C-9
Total Releasable H_2S	9030	9034	Table C-9
Extraction Procedure Toxicity	1311		Table C-9
Toxicity Characteristic Leaching Procedure			Table C-9
TCL VOC	5035	8260B	Table C-9
TCL SVOC	3550B	8270C	Table C-9
PCB	3550B	8082	Table C-9
Pesticides		8081	Table C-9
Inorganics	3050B	6010B	Table C-9
Mercury	3050B	7471A	Table C-9

5. CRQL for inorganics in soil are reported as the contract required detection limit (CRDL) as specirfied in TAGM 4046

This Table amends: *Generic Installation Remedial Investigation/Feasibility Study Work Plan for Seneca Army Depot Activity in Romulus, NY* (Parsons, June 1995)

TABLE C-9
RCRA TARGET COMPOUND LIST
CONTRACT REQUIRED QUANTITATION LIMITS

Parameter	Contract Required Quantitation Limits ug/l
A. Ignitability (°C or °F)	NA
B. Corrosivity Towards Steel (pH units)	NA
C. Reactivity	
1. Total Releasable Cyanide as HCN	100,000
2. Total Releasable Sulfide as H_2S	100,000
D. Extraction Procedure Toxicity; (EP Tox) (concentrations in extract)	
1. Arsenic	1,000
2. Barium	10,000
3. Cadmium	100
4. Total Chromium	1,000
5. Lead	1,000
6. Mercury	50
7. Selenium	100
8. Silver	1,000
9. gamma-BHC (Lindane)	100
10. 2,4-Dichlorophenoxyacetic acid; (2,4-D)	1,000
11. Endrin	5
12. methoxychlor	1,000
13. 2,4,5-Trichlorophenoxy-propionic acid; (2,4,5-TP; Silvex)	
14. Toxaphene	100
E. Toxicity Characteristic Leaching Procedure (TCLP) (concentrations in extract)	
Metals	
1. Arsenic	1,000
2. Barium	10,000
3. Cadmium	100
4. Total Chromium	1,000
5. Lead	1,000
6. Mercury	50
7. Selenium	100
8. Silver	1,000

TABLE C-9
RCRA TARGET COMPOUND LIST
CONTRACT REQUIRED QUANTITATION LIMITS

Parameter	Contract Required Quantitation Limits ug/l
Volatiles	
1. Benzene	10
2. 2-Butanone (Methylethylketone)	10
3. Carbon tetrachloride	10
4. Chlorobenzene	10
5. Chloroform	10
6. 1,2-Dichloroethane	10
7. 1,1-Dichlroethylene	10
8. Tetrachloroethylene	10
9. Trichloroethylene	10
10. Vinyl chloride	10
Semi-Volatiles	
1. 1,4-Dichlorobenzene	10
2. 2,4-Dinitrotoluene	10
3. Hexachorobenzene	10
4. Hexachorobutadiene	10
5. 2-Methylpenol (o-Cresol)	100
6. 3-Methylpheno (m-Cresol)	10
7. 4-Methylphenol (p-Cresol)	10
8. Nitrobenzene	10
9. Pentachlorophenol	5
10. Pyridine	100
11. 2,4,5-Trichlorophenol	10
12. 2,4,6-Trichlorophenol	10
Pesticides	
1. gamma-BHC (Lindane)	10
2. Chlordane	10
3. 2,4-Dichlorophenoxyacetic acid; (2,4-D)	100
4. Endrin	0.5
5. Heptachlor	0.5
6. Heptachlor epoxide	0.5
7. Methoxychlor	100
8. 2,4,5-Trichlorophenoxy-propionic acid; (2,4,5-TP; Silvex)	10
9. Toxaphene	10

This Table amends: *Generic Installation Remedial Investigation/Feasibility Study Work Plan for Seneca Army Depot Activity in Romulus, NY* (Parsons, June 1995)

TABLE C-10

Precision, Accuracy, and Completeness Goals for Laboratory Data

Measurement Parameter	Method Reference	Precision RPD			Accuracy % Rec.		Completeness
TCL-VOC[1]	NYSDEC CLP Statement of Work	Water	Soil		Water	Soil	
Dichloroethene		14	22		61-145	59-172	90%
Trichloroethene		14	24		71-120	62-137	
Benzene		11	21		76-127	66-142	
Toluene		13	21		76-125	59-139	
Chlorobenzene		13	21		75-130	60-133	
VOCs	Method 524.2	20	-		80-120	-	90%
TCL-SVOC[1]	NYSDEC CLP Statement of Work	Water	Soil	Water	Soil		
Phenol		42	35		12-110	26-90	90%
2-Chlorophenol		40	50		27-123	25-102	
1,4-Dichlorobenzene		28		27	36-97	28-104	
N-Nitroso-di-n-Propylamine		38	38	41-116	41-126		
1,2,4 Trichlorobenzene		28		23	39-98	38-107	
4-Chloro-3-Methylphenol		42		33	23-97	26-103	
Acenaphthene		31	19		46-118	31-137	
4-Nitrophenol		50	50		Oct-80	11-114	
2,4-Dinitrotoluene		38		47	24-96	28-89	
Pentachlorophenol		50		47	9-103	17-109	
Pyrene		31	36		26-127	35-142	
TCL-PESTICIDES/Arochlors[1]	NYSDEC CLP Statement of Work	Water	Soil		Water	Soil	
Gamma-BHC		15	50		56-123	46-127	90%
Heptachlor		20	31		40-131	35-130	
Aldrin		22	43		40-120	34-132	
Dieldrin		18	38		52-126	31-134	
Endrin		21	45		56-121	42-139	
4,4'-DDT		27	50		38-127	23-134	
TAL METALS[2]	NYSDEC CLP Statement of Work	Water	Soil		Water	Soil	
23 Metals and Cyanide		50	100		75-125	75-125	90%

Notes:

1 Values from NYSDEC ASP (June 2000): Matrix Spike Recovery and Relative Percent Difference Limits

2 Values from EPA Region II Evaluation of Metals Data for the CLP Program (January 1992)

This Table amends: *Generic Installation Remedial Investigation/Feasibility Study Work Plan for Seneca Army Depot Activity in Romulus, NY* (Parsons, June 1995)

TABLE C-11
CALIBRATION CRITERIA

NYSDEC CLP	Jarrell-Ash	Calibration at the beginning of each analytical series	3-t initial calibration standards	correlation > 0.995
Statement of Work Metals by ICP	Enviro II	Calibration check every 10 samples		calibration check within 10% of true value

This Table amends: *Generic Installation Remedial Investigation/Feasibility Study Work Plan for Seneca Army Depot Activity in Romulus, NY* (Parsons, June 1995)

APPENDIX B

AMENDMENTS TO APPENDIX A (SAP) OF:

Generic Installation Remedial Investigation/Feasibility Study Work Plan for Seneca Army Depot Activity in Romulus, NY (Parsons, June 1995)

AMMENDMENTS TO APPENDIX A OF: FIELD SAMPLING AND ANALYSIS PLAN

Generic Installation Remedial Investigation/Feasibility Study Work Plan for Seneca Army Depot Activity in Romulus, NY (Parsons, June 1995).

1. **Section 2.1, Communications, Page A-3, Line 26:** DELETE paragraph "Field personnel must also contact the U.S. Army Corps of Engineers Missouri River Division (MRD) Laboratory in Omaha, Nebraska prior to the beginning of a field program if QA samples will be analyzed by MRD. The field personnel should obtain a LIMS number from the MRD sample custodian during this initial contact. MRD's phone number is (402) 697-2623."

   REPLACE with "*Field personnel must also contact the U.S. Army Corps of Engineers Environmental Laboratory, Environmental Chemistry Branch (ELECB) in Omaha, Nebraska prior to the beginning of a field program if QA samples will be analyzed by ELECB. The field personnel should obtain a Laboratory Information Management Systems (LIMS) number from the ECELB sample custodian during this initial contact. The point of contact and phone number for ECELB is Douglas Taggart 402.444.4300.*"

2. **Section 2.1, Communications, Bullet 2, Page A-3, Line 35:** DELETE "....contracted laboratory and MRD's laboratory prior to..."

   REPLACE with "*...contracted laboratory and ECELB's laboratory prior to...*"

3. **Section 2.2, Sample Integrity Issues, Paragraph 3, Page A-5, Line 26:** DELETE "*Specifications and Guidance for Obtaining Contaminant-Free Sample Containers*, published by EPA's Office of Emergency and Remedial Response in April 1990"

   REPLACE with: "*Specifications and Guidance for obtaining Contaminant-Free Sample Containers published by the Office of Emergency and Remedial Response (EPA/540/R-93/051, December 1992).*"

4. **Section 2.3, Quality Control Samples, Paragraph 3, Page A-6, Line 16:** DELETE "USEPA Region II CERCLA Quality Assurance Manual",

   REPLACE with "*USEPA Region II CERCLA Quality Assurance Manual, (October, 1989).*"

5. **Section 2.4, Sample Numbering Scheme, Paragraph 3, Page A-8, Line 19:** DELETE "The general components of the numbering scheme are 1) matrix, 2)SWMU #, 3) location, and 4) sample #,"

REPLACE with "*The general components of the numbering scheme are 1) matrix, 2) SWMU #, and 3) sample #.*"

6. **Section 2.4, Sample Numbering Scheme, Paragraph 3, Page A-8, Line 25:** DELETE "Matrix-SMWU #- Location #. Sample #,"

   REPLACE with *"Matrix-SMWU #- Sample #."*

7. **Section 2.4, Sample Numbering Scheme, Paragraph 3, Page A-8, Line 36:** DELETE line 36 which says "Location # is identified consecutively beginning with 1 for each matrix type."

8. **Section 2.4, Sample Numbering Scheme, Paragraph 3, Page A-8, Line 38:** DELETE "Sample # is identified consecutively beginning with .1 for each location,"

   REPLACE with: "*Sample # is identified consecutively where: Soil samples = 1000-1999, groundwater samples = 2000-2999, surface water samples = 3000-3999; and sediment samples are 4000-4999, Trip Blanks = 0001-0099, and field blanks = 0100-0199 (0999 available).*"

9. **Section 3.4.5, Health and Safety Procedures, Paragraph 2, Page A-34, Line 4:** RENAME this section *"Section 3.4.6 Health and Safety Procedures."*

10. **ADD a new Section 3.4.5 titled: *"Section 3.4.5 Soil Pile Sampling,"***

    Representative samples from excavated soil piles consisting of sludges or other solid or liquid waste mixed with soil shall be obtained from a predetermined depth based on the known characteristics of the waste pile. Homogenous soil piles resulting from known operations may not require as extensive a sampling protocol as a heterogeneous soil pile where the composition and contaminants within the pile are unknown. A representative sample shall be collected from the soil pile using simple random sampling or stratified random sampling as defined in the USEPA Environmental Response Team Standard Operating Procedure (SOP) #2017 (Revision 1.0, March 2002).

    Near surface samples shall be collected using a decontaminated shovel, trowel, scoop or spoon and depth samples with a decontaminated hand auger, sampling trier or grain sampler. Sampling equipment will be constructed of stainless steel, plastic or Teflon®. Equipment should be decontaminated in accordance with the Environmental Response Team/Response Engineering and Analytical Contract (ERT/REAC) SOP #2006, "*Sampling Equipment Decontamination,*" and the site-specific work plan.

    Composite samples will be collected and placed into inert containers that will not react with the contaminants, or interfere with the analyses (i.e. stainless steel or Teflon® lined). The samples will be thoroughly mixed (homogenous) before the sample aliquot is transferred to an appropriate sample container (with the exception of soils for VOC analysis). Soils for VOC analysis will be transferred to an appropriate sample container immediately after sample collection and before mixing the soil.

State regulations do not require a specified number of samples per quantity of soil stockpiled, therefore, a proposed sampling plan must be submitted on a site-specific basis.

Soil piles requiring hazardous waste characterization will be analyzed by SW-846 methods for Resource Conservation and Recovery Act (RCRA) toxicity arameters. If a sample contains any of the RCRA contaminants at concentrations equal to or greater than the specified regulatory limit, the sample is said to demonstrate the characteristics of toxicity and will be disposed of as a hazardous waste. In addition, if the sample demonstrates the characteristics of ignitability, corrosivity, or reactivity it will be disposed of as a hazardous waste.

11. **Section 5.2, Packing and Shipping hazardous Samples Excluding those from Closed Containers, Bullet 3, Page A-159, Line 2:** DELETE "49 CFR 171, 172, 173, or 178,"

    REPLACE with "*49 CFR parts 171 through 180.*"

APPENDIX C

LEAD COMPLIANCE PROGRAM

LEAD EXPOSURE COMPLIANCE PROGRAM

JOB NAME: AIRFIELD SMALL ARMS RANGE TREATABILITY STUDY
LOCATION: SENECA ARMY DEPOT ACTIVITY - ROMULUS, NY
JOB NO. 741401
DATE: AUGUST 20, 2003
PREPARED BY: DAN HOFFNER
APPROVED BY: WILLIAM BRADFORD

NOTE: THIS DOCUMENT IS BEING ISSUED IN CONFORMANCE WITH 29 CFR 1926.62. THE DOCUMENT IS ORGANIZED PER 29 CFR 1926.62(e)(2). IT IS TO BE USED IN CONJUNCTION WITH THE PROJECT HEALTH AND SAFETY PLAN (HASP) AND PROJECT WORK PLAN. IF RESULTS FROM PERSONAL AIR SAMPLING INDICATE THAT NO WORKERS HAVE BEEN OR WILL BE EXPOSED ABOVE THE OSHA PERMISSIBLE EXPOSURE LIMIT (PEL) AS AN 8-HOUR TIME-WEIGHTED AVERAGE (TWA), THE PROJECT HEALTH AND SAFETY MANAGER MAY DECLARE THIS DOCUMENT NO LONGER APPLICABLE.

1. DESCRIPTION OF ACTIVITIES WHERE LEAD MAY BE EMITTED:

- Excavation of contaminated soils/debris.
- Mechanical separation of soils/debris.
- Sizing and stockpiling of soils/debris.
- Power screening of soils/debris.
- Sampling of stockpiles.
- Taking confirmatory samples.
- Loading of trucks.

2. CONTROLS IN PLACE:

- Isolation of the work zone.
- Natural outdoor ventilation.
- Dust suppression measures.
- Personal Protective Equipment (PPE).

3. EMPLOYEE JOB RESPONSIBILITIES:

Project Manager

To ensure that all personnel involved with projects which involve exposure to lead, are supplied with the appropriate PPE, training, and controls (where feasible); and to ensure exposure to lead is below recommended levels.

Site Supervisor/Foreman

To distribute appropriate PPE, training, and implement controls where feasible; and to advise employees, subcontractors, visitors, and the project manager of changing site conditions.

Employee/Subcontractor/Visitor

Understand and abide by all applicable training; comply with all signage; advise appropriate personnel of deficiencies in the program and/or new hazards on-site; and follow ALL Health and Safety rules at the facility and meet all the Health and Safety requirements of their contracts.

Corporate Health and Safety Manager

To assist the project manager in the implementation of the lead exposure compliance plan; and to aid in the training and scheduling appropriate physicals.

4. CREW SIZE:

4-6 field workers

5. OPERATING PROCEDURES:

- To the greatest extent possible, lead contaminated soil will not be disturbed in such a way as to generate any airborne lead. This means that activities generating large volumes of airborne dust will not be done.
- Once preparatory activities with the potential to disturb lead begin, lead exposure assessments (air monitoring) shall be conducted.
- Respiratory protection will be worn until negative assessments are determined.
- Lead contaminated soil will be disposed of as a hazardous waste if the total lead is >400 ppm and the leachable lead is >5 mg/L.
- All workers will follow personal hygiene practices including washing hands and face before taking breaks and lunch.
- See Work Plan for Scope of Work and site specific procedures.

6. MEANS TO CONTROL EXPOSURE:

- Natural ventilation.
- Dust suppression measures, such as spraying of water on soil, may be used, as needed.
- PPE, as required.
- Worker rotation, if necessary.

7. REPORT OF TECHNOLOGY CONSIDERED IN MEETING THE PEL:

The Permissible Exposure Limit (PEL) for this project is 50 micrograms per cubic meter of air averaged over an 8-hour period. The control measures noted above, monitoring of total dust, use of personal air sampling pumps, and use of PPE.

8. AIR MONITORING DATA:

Since the area is vegetated and undisturbed, there currently are no air emissions. Once work activities are started, air monitoring will be conducted as described in the Work Plan.

9. SCHEDULE FOR IMPLEMENTING LEAD CONTROL PLAN:

Upon initiation of the above-mentioned activities (description of activities where lead may be emitted).

10. WORK PRACTICE PROGRAM/PROCEDURES:

Hygiene

A. There will be no consumption of food or beverages; no smoking; and no cosmetic application in areas where employees are exposed to lead at or above the action level.
B. Clean change areas will be provided for employees whose airborne exposure to lead is above the action level and as interim protection for employees whose exposures are being evaluated.
C. The change areas will be equipped with separate storage facilities for protective work clothing and equipment and for street clothes.
D. Employees will not leave the workplace wearing any protective clothing or equipment that is required to be worn during the work shift.
E. Employees will wash their hands and face at the end of the work shift, prior to leaving the site.
F. A lunch room/area will be designated on-site. All workers will exit the work zone for lunch. A clean area, free of lead contamination, outside of the work zone will be kept for drinking water.
G. All employees exposed to airborne lead will wash their hands and faces prior to eating, drinking, smoking, applying cosmetics, or leaving the site.

Personal Protective Equipment (PPE)

A. Respiratory Protection:

1. Respirator use will be necessary when air monitoring indicates that employee exposure is above the Action Level (30 micrograms per cubic meter of air averaged over an 8-hour time weighted average.
2. Respirators will be chosen on a task-specific basis based upon information in 29CFR1926.62. The selected respirator for this project is an approved ½ face air purifying respirator.
3. Until the lead exposure assessment has been performed, the employee will be treated as if their exposure is above the PEL.

B. Protective Clothing

1. Provision and Use:

Where an employee is exposed to lead above the PEL without regard to the use of respirators, where employees are exposed to lead compounds which may cause skin or eye irritation (i.e., lead arsenate, lead azide), and as an interim protection for employees performing tasks while the lead exposure assessment is being performed, employees will be provided with and required to wear appropriate work clothing and equipment that prevent the contamination of the employee and the employee's garments. The protective clothing may include:

a. Disposable coveralls or similar full-body work clothing;
b. Gloves, hats, and shoes or disposable shoe coverlets; and
c. Face shields and safety glasses, vented goggles, or other appropriate protective equipment.

2. Cleaning and Replacement:

a. Protective clothing and equipment will be repaired or replaced as needed to maintain their effectiveness;
b. Contaminated clothing will be placed in a closed container in the change area;
c. Containers of lead contaminated protective clothing will be properly labeled; and

d. The removal of lead from protective clothing or equipment by blowing shaking, or any other means which disperses lead into the air is prohibited.

Training

All personnel are required to review the HASP and Work Plan. The Site Superintendent will meet with workers daily, prior to beginning site activities, to emphasize health and safety considerations. A longer meeting will be held at the beginning of each work week.

Personal Air Sampling

See Work Plan.

Medical Surveillance

Medical surveillance is covered in HASP (Appendix B of the Seneca Army Depot Activity *Generic Installation RI/FS Work Plan*; Parsons, 1995). If Lead exposure exceeds 0.03 mg/m^3 (as lead), all affected employees will have the required OSHA blood tests as a baseline. Such tests will be repeated every 6 months and upon employee exiting the project until the site safety manger determines that lead exposure has ended. Within 5 working days after the receipt of biological monitoring results, each employee will be notified in writing of his or her blood lead levels and any temporary requirements that may apply. All air monitoring records will be kept in the Syracuse office in job file #741401. Once exposure has begun, a IH or CSP will review all monitoring data.

11. ADMINISTRATIVE CONTROL SCHEDULE:

A worker rotation schedule will be implemented if activities are shown to continually exceed the PEL.