U.S. ARMY CORPS OF ENGINEERS
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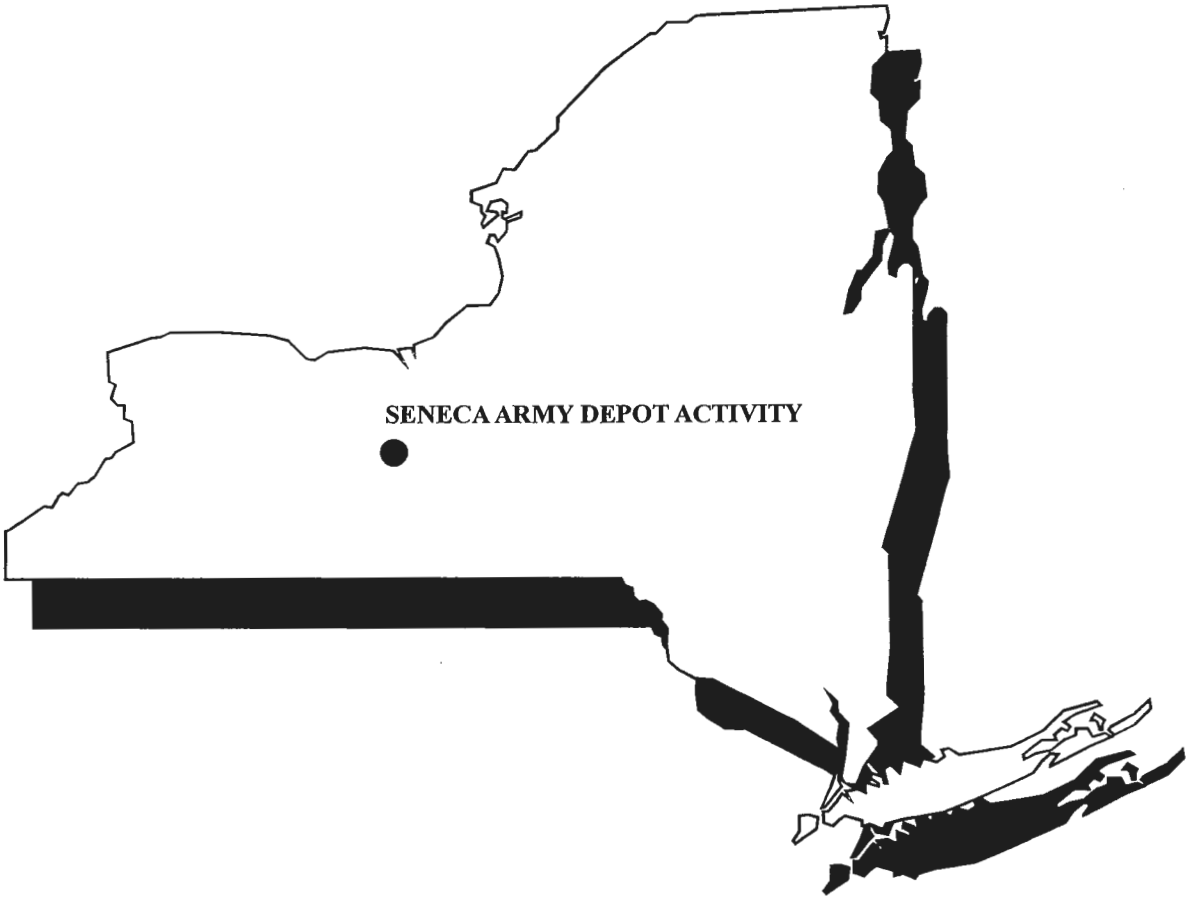

CHARACTERIZATION WORK PLAN FOR THE AIRFIELD PARCEL (SEAD-122B) SMALL ARMS RANGE, SENECA ARMY DEPOT ACTIVITY

JUNE 2002

CHARACTERIZATION WORK PLAN
SENECA ARMY DEPOT ACTIVITY
SMALL ARMS RANGE
AIRFIELD PARCEL (SEAD-122B)

Prepared For:

Seneca Army Depot Activity

and

U.S. Army Corps of Engineers
New York District

and

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

Prepared By:

PARSONS

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REVIEWED AND APPROVED BY:

Project Manager: _____ June 21, 2002
Date

JUNE 2002

(Revisions from March 2002 Draft Work Plan are highlighted.)

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ACRONYMS

AAF	Army Air Field
ASTM	American Society for Testing and Materials
ATL	All-terrain Vehicle
BRAC	Base Realignment and Closure
CDAP	Chemical Data Acquisition Plan
CERCLA	Comprehensive Environmental Response, Compensation, and Liabilities Act
CLP	Contract Laboratory Program
DoD	Department of Defense
FSAP	Field Sampling and Analysis Plan
LRA	Land Reuse Authority
MS/MSD	Matrix Spike/Matrix Spike Duplicate
MW	Monitoring Well
NGVD	National Geodetic Vertical Datum
NPL	National Priorities List
NYSDEC	New York State Department of Environmental Conservation
Parsons	Parsons Engineering Science, Inc.
PPE	Personal Protective Equipment
RI/FS	Remedial Investigation/Feasibility Study
QC	Quality Control
QA/QC	Quality Assurance/Quality Control
SAR	Small Arms Range
SEDA	Seneca Army Depot Activity
SSHP	Site-Specific Safety and Health Plan
SOW	Statement of Work
SPLP	Synthetic Precipitation Leach Procedure
TAL	Target Analyte List
TCLP	Toxicity Characteristic Leaching Procedure
TOC	Total Organic Carbon
USACHPPM	United States Army Center for Health Prevention and Preventative Medicine
USCS	Unified Soil Classification System
USEPA	United States Environmental Protection Agency

SECTION 1

INTRODUCTION

1.1 GENERAL

The purpose of this work plan is to describe characterization activities that will be conducted for the Small Arms Range (SAR) at the Airfield Parcel (SEAD-122B) located within the Seneca Army Depot Activity (SEDA), Romulus, New York. The characterization activities will include collection/laboratory analysis of soil and groundwater samples and data analysis based on soil action levels included herein. The results and findings of the proposed characterization activities will be used to develop [redacted]

Field work described in this work plan will be conducted in accordance with the Generic Installation Remedial Investigation/Feasibility Study (RI/FS) Work Plan for the Seneca Army Depot Activity (Parsons, 1995a). The generic work plan describes characterization fieldwork procedures to be used.

1.2 PROJECT BACKGROUND

SEDA is a U.S. Army facility located in Seneca County, New York (Figure 1.1) which occupies approximately 10,700 acres. It is bounded on the west by State Route 96A and on the east by State Route 96. The cities of Geneva and Rochester are located to the northwest (14 and 50 miles, respectively); Syracuse is 53 miles to the northeast and Ithaca is 31 miles to the south. The surrounding area is generally used for farming.

SEDA was constructed in 1941 and has been owned by the United States Government and operated by the Department of the Army since that time. [redacted] Since the 1950's, the Navy, Air Force, and Army have operated the SAR located near the Airfield Parcel (Figure 1.2) for small arms qualification of base and security personnel. Any and every type of small arms ammunition has been used at this range including M16s, handguns, rifles, and some shotgun.

The Airfield SAR consists of two bermed small arms ranges, one used for small arms and the second for machine gun targeting. The berms are constructed of mostly sandy fill soils. There have been modifications to the size and shape of the firing lanes and berms since initial construction. 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.

On July 13, 1989, SEDA was listed on the USEPA National Priorities List (NPL), which brought the installation under the Federal Facilities provision of Section 120 of CERCLA. In 1995, SEDA became part of the nationwide BRAC program. As a result of the closure activities, potential arose to reuse the Airfield SAR area again as a small arms range. SEDA has been working with the Land Reuse Authority (LRA) to identify and transfer lands from the Army to other governmental and private beneficial reuses. The LRA is currently working with the New York State Police to transfer the Airfield Parcel, including the Airfield SAR, for state use. The state police and other state and local entities would use the airfield for training police in high-speed pursuits and driving skills, and use the Airfield SAR for target practice needed for qualification of enforcement agency staff (similar to past use of the Airfield SAR). The State's need for the land is immediate. Prior to transfer, the area must be [redacted] to meet the requirements of the Army covenant on transferring properties (i.e., the risk to the future worker must be controlled or mitigated). [redacted]

This work plan details activities that will be conducted to characterize environmental conditions at the Airfield SAR. Based on the results of the characterization activities, any remaining impacted soil at the Airfield SAR will be addressed in a manner to be determined that will facilitate transfer of the property for continued use as a small arms range.

1.3 PROJECT OBJECTIVES

The following objectives have been established for the characterization activities to be conducted at the Airfield SAR:

- Characterize the nature and extent of site-related contaminants in soil and groundwater at the Airfield SAR; and
- Provide the data necessary to [redacted].

The specific objectives of this Work Plan include the following:

- Describe the resources and methods to be used to more specifically characterize the nature and extent of site-related contaminants at the Airfield SAR; and
- Describe data to be collected that is needed to develop a strategy to cost-effectively prepare the property for transfer to the State of New York.

1.4 REFERENCED PLANS

The following plans from the Generic Installation RI/FS Workplan for Seneca Army Depot Activity (Parsons, 1995a) are incorporated by reference into this document:

- Appendix A - Field Sampling and Analysis Plan (FSAP);

- Appendix B - Site-Specific Safety and Health Plan (SSHP); and
- Appendix C - Chemical Data Acquisition Plan (CDAP).

1.5 PARSONS PROJECT TEAM

Appropriately trained and qualified Parsons professionals from Parsons perform this work. The project responsibilities of the Parsons team members are briefly described below.

Parsons Project Manager (PM) – Mr. David Babcock, P.E. will perform the duties of Parsons Project Manager. The PM will be responsible for managing all project activities. Mr. Babcock will also function as the primary client contact, and ensure that all project and client requirements are met.

Parsons Health and Safety Officer (HSO) – Mr. Ben McAlister will be the site HSO for Parsons. Mr. McAlister will advise the Parsons Project Manager on all aspects of health and safety on site. He has authority to stop work if any operation threatens worker or public health or safety.

Parsons Field Task Leader – Mr. Matt Biondolillo will serve as field team leader to lead the field characterization effort.

1.6 POINTS OF CONTACT

The following are the points of contact for the project. Parsons will keep Messrs. Greene, Healy, Battaglia, and Absolom informed as the work continues. Communications with Mr. Vazquez and Ms. Thorne will be through Mr. Absolom.

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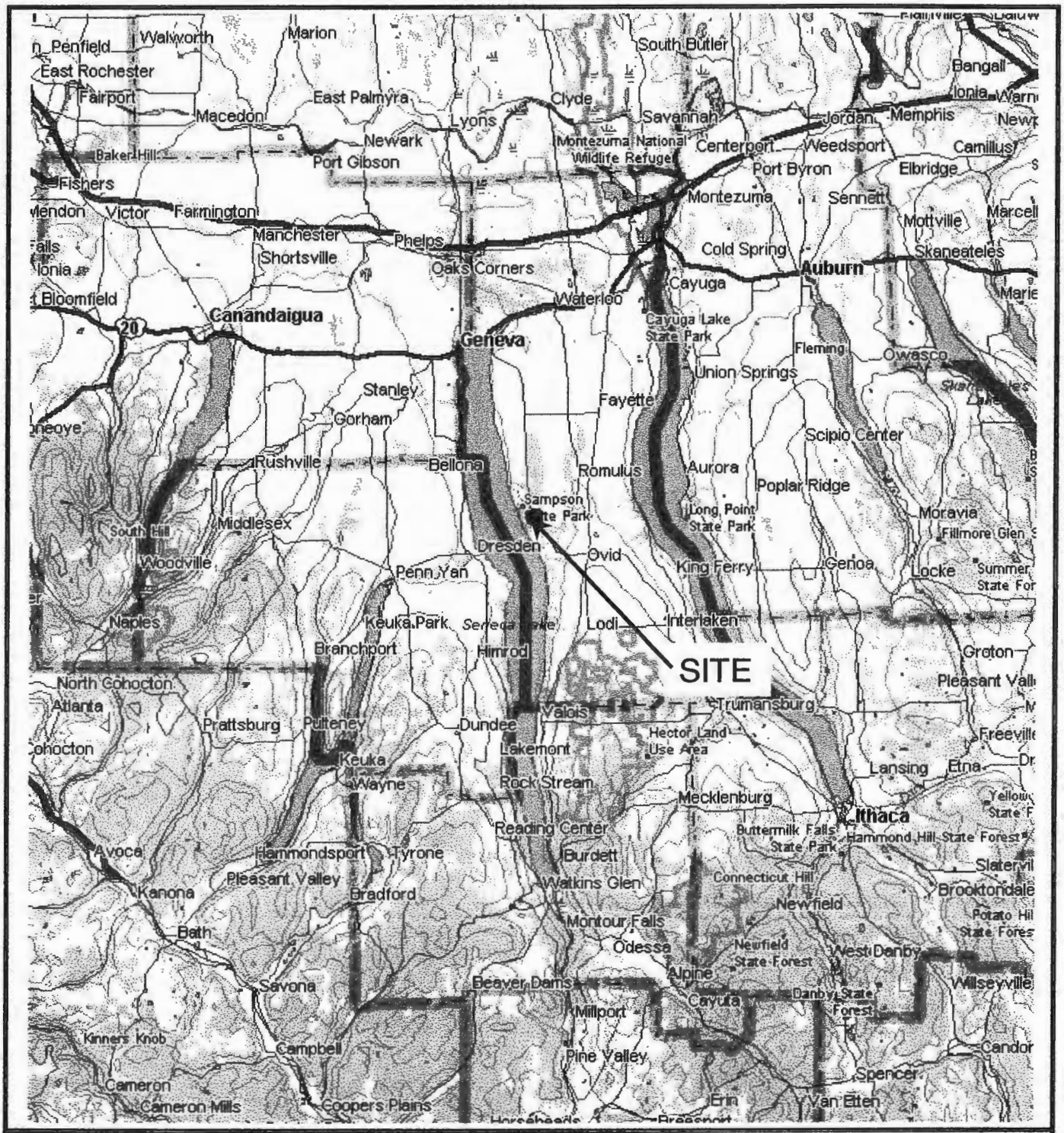
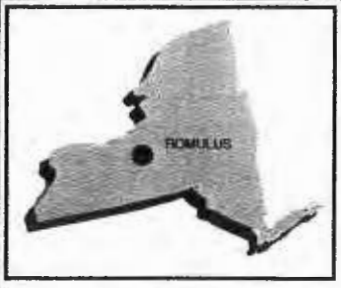
1.7 SUBCONTRACTOR MANAGEMENT

The Parsons project manager will procure, control and manage subcontractors in accordance with Parsons procurement procedures. These procedures include full integration of subcontractors into Parsons delivery order teams, clear and concise statements of work to be performed, designation of subcontractor personnel accountable for the work and clear identification of work products, delivery schedules and periodic reports.

Subcontractors to be used for site characterization activities shall include a driller to perform soil boring and well installations, a surveyor to survey sample locations, and a laboratory to perform sample analyses. The laboratory subcontractor will be an ELAP and COE-approved laboratory for the sample analyses to be conducted for this site.





New York Quadrangle

LATITUDE: N42° 42' 54"
LONGITUED: W76° 53' 18"

N

SOURCE: DeLORME 3-D TOPOQUAD PROGRAM

FIGURE 1.1

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

NEW YORK STATE VICINITY MAP

PARSONS
290 ELWOOD DAVIS ROAD, SUITE 312, LIVERPOOL, NY 13088 PHONE: (315) 451-9560

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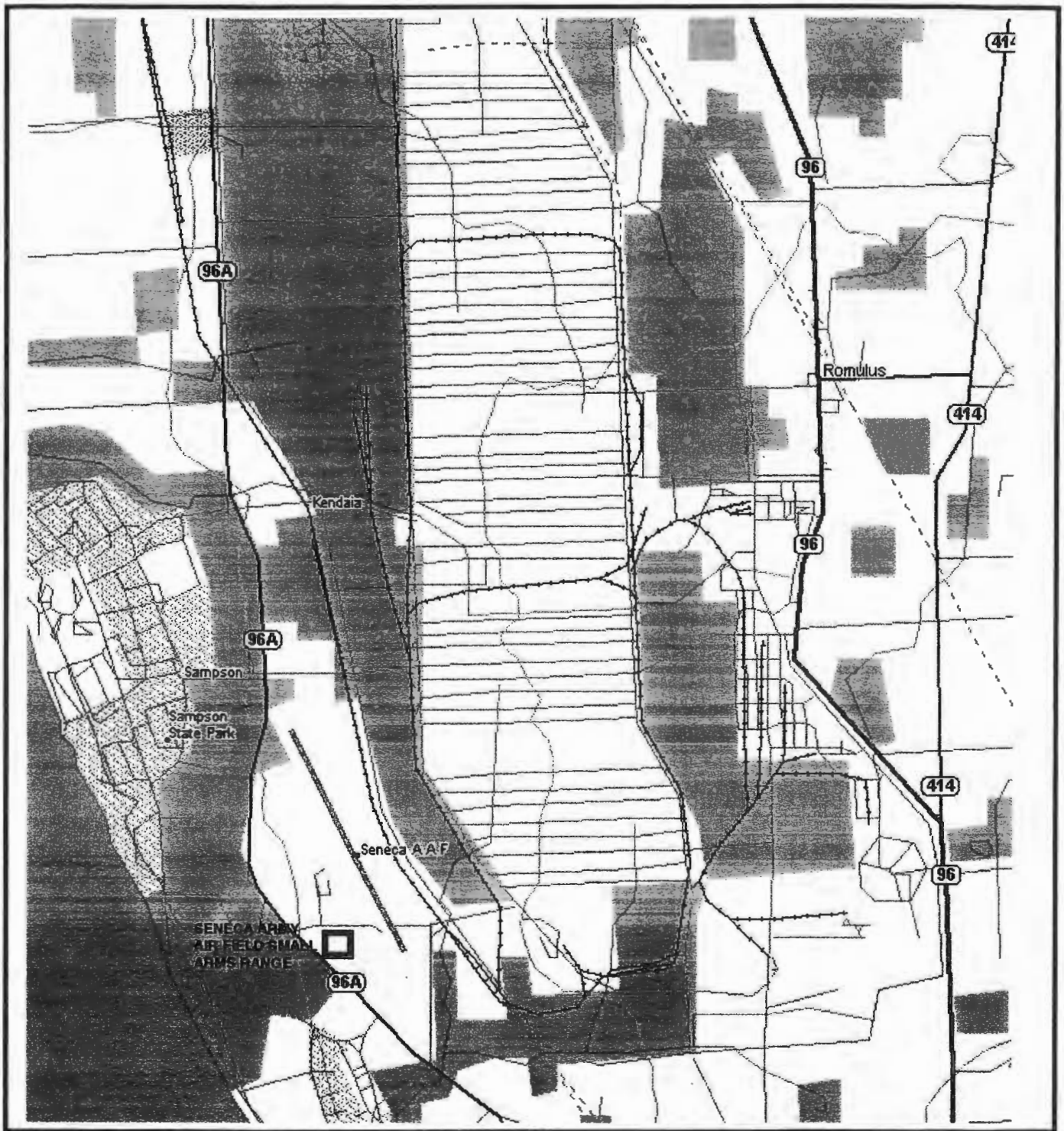

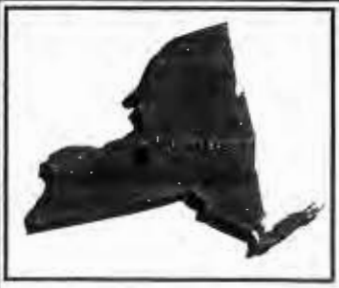

New York
Quadrangle

LATITUDE: N42° 42' 54"
LONGITUED: W76° 53' 18"

N

SOURCE: DeLORME 3-D
TOPOQUAD PROGRAM

FIGURE 1.2

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

SITE LOCATION MAP

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290 ELWOOD DAVIS ROAD, SUITE 312, LIVERPOOL, NY 13088 PHONE: (315) 451-9560

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SECTION 2

SCOPE OF CHARACTERIZATION

2.1 CONCEPTUAL SITE MODEL

2.1.1 Physical Site Characterization

The Airfield SAR is located in the southwest corner of SEDA adjacent to the SEDA Airfield Parcel (Figure 1.2). The elevation of the site is 600 to 640 feet above mean sea level (NGVD 1929). The land slopes gently towards Seneca Lake (elevation 445 feet above mean sea level), which is located approximately 5,000 feet to the west. The site is bounded on the north by the gorge of the Kendaia Creek and by Indian Creek on the south.

2.1.2 Site Geology

The Seneca Army Depot area is located in the Mohawk Section of the Appalachian Plateau Physiographic Province, in the floodplain of the Mohawk River. The floodplain is underlain by the Ordovician-age Utica Shale bedrock. These rocks are black, finely laminated, marine in origin, and contain occasional concentrations of pyrite. The Utica Shale is overlain by up to 150 feet of glacial sediments consisting of (progressing from deep to shallow) till, lacustrine sediments, and fluvial sediments.

Subsurface characterization activities conducted in the vicinity of the Airfield indicate that glacial till and calcareous black shale are the two major geologic deposits. The till is light brown and composed of silt and clay, and some black shale fragments. However, larger shale fragments (rip-up clasts) were observed at many locations near the till weathered shale contact. Some fine sand lenses were also observed. Weathered (oxidized) lenses were noted in the upper portions of the till.

Competent, calcareous black shale was encountered at depths between approximately 9 and 14 feet below the ground surface. The elevations of the competent bedrock determined during the drilling and seismic programs at nearby SEAD-11 (located to the east of the Airfield SAR) suggest that the bedrock surface slopes to the west, mimicking the land surface. The upper portion of the competent shale has a one to three-foot thick weathered zone. (Parsons, 1995b).

2.1.4 Site Hydrogeology

Estimated depth to groundwater at the Airfield SAR is approximately between 8 and 15 feet below ground surface, based on data collected at the nearby SEAD-11 (Parsons ES, 1995b). The nature of the groundwater flow at the Airfield SAR is uncertain. Similar to SEAD-11, the groundwater flow in the overburden is anticipated to follow the general trend of the land towards the west and Seneca Lake.

2.1.5 Site Hydrology

Surface water flow from precipitation events is controlled by local topography. The west-trending topographic gradient is relatively flat in the immediate vicinity of the Airfield SAR, but

becomes progressively steeper in the direction of Seneca Lake. Based on the topographic expression, surface water flow at the Airfield SAR is generally to the west. The Airfield SAR has a network of footer drains along each baffle/target line. [redacted]

2.2 CONSTITUENTS OF POTENTIAL CONCERN

Constituents of potential concern may be present in soils at the Site due to historical use of small arms ammunition. Ammunition used at small arms ranges include machine guns and rifles. Most small arms ammunitions consist of a bullet and a cartridge case filled with powder and a primer. Firing a weapon results in discharges of the following materials to the environment:

- Bullets in the target area,
- Cartridge and primer cases in the area where shooting occurred, and
- Combustion residues of the primer and powder.

Bullets

Bullets are composed primarily of over 90 percent metallic (elemental) lead with small amounts of antimony (1 to 9 percent), and copper and zinc as jacketing for high –velocity weapons such as M-16 rifles and M-60 machine guns (VanCantfort, undated). Therefore, metals constituting significant mass fraction in a bullet are lead, with lesser amounts of copper, zinc, and antimony. Bullets normally would be found near the target area. However, contaminants associated with bullets may be found in the shooting area due to combustion residues.

Cartridge and Primer Cases

Cartridge and primer cases normally would be found near the shooting area, where they are extracted or ejected after firing. Virtually all cartridge cases are made of brass (70 percent copper and 30 percent zinc). A few have a nickel coating. Primer cases are of similar composition as cartridge cases (Florida State University College of Medicine, 2002).

Combustion Residues

The residue of the combustion products, or unburned primer or powder components, can be discharged to the environment. The major primer elements are lead (Pb), barium (Ba), or antimony (Sb). In addition, metallic salts have been identified as a residual component of such items as tracer ammunition, ignitor compositions, incendiary ammunition, flares, colored smoke, and primer compositions (Parsons, 2001). Combustion residues may adhere to fired bullets and gradually ablate through the path of the bullet. Therefore, these may be found in the target area and the shooting area, similar to the metallic components associated with the bullets.

Based on the information discussed above, the metals that may be of potential concern at small arms firing ranges include antimony, barium, copper, lead, and zinc. Although nickel may be a component of the cartridge case, the presence of nickel is not substantiated in most references, and this metal was not encountered in significant concentrations at the small arms range sites evaluated by Parsons (Parsons, 2000).

This site investigation is based on the best management practices presented in the USEPA Region 2 guidance as well as past experience at Air Force small arms ranges. Parsons' experience with several other small arms range projects (Parsons, 2000) indicates that lead is the primary constituent of concern. This is consistent with the known toxicity of lead and the fact that lead is the most abundant compound in the small arms ammunition. Therefore, the characterization activities at the Airfield SAR will primarily focus on lead-contaminated soil, although soil and groundwater samples will also be analyzed for other metals in addition to lead.

2.3 PRELIMINARY IDENTIFICATION OF POTENTIAL RECEPTORS AND EXPOSURE SCENARIOS

This section identifies the source areas, release mechanisms, potential exposure pathways, and the likely human receptors at the Airfield SAR based upon the results of the conceptual site model, which was described in the previous section. As mentioned previously, the intended future land use for the Airfield SAR is a target practice range to be managed by the New York State Police.

2.3.1 Potential Source Areas and Release Mechanisms

The primary sources of potential contaminants at the Airfield SAR are the earthen firing berms surrounding each of the small arms and machine gun ranges. The berms served as a backstop for small arms bullets. Secondary potential sources are concentrations of cartridge casings in surface soil at or near the former firing point(s). As discussed previously, there have been modifications to the size and shape of the firing lanes and berms since initial construction. It is likely that some of the berm and surface soils have been reworked and relocated within the Airfield SAR.

Potential release mechanisms from these source areas include: (1) infiltration to groundwater; (2) dust and volatile vapor emissions; and (3) surficial runoff of precipitation and soil erosion from the Airfield SAR. The latter is not anticipated to be a significant release mechanism since the Airfield SAR is largely vegetated.

2.3.2 Potential Exposure Pathways and Receptors

As discussed in Section 1.2 of the Work Plan, SEDA has been working with the LRA to transfer lands from the Army to the New York State Police for state use. The State Police has been consulted about the future use of the Site (personal communication between Parsons and Sgt. Tim Coughlin at the State Police barracks in Canandaigua, NY, January 2002). The State Police plans to use the Site for target practice needed for qualification of enforcement agency staff. The written summary of Parsons communication with Sgt. Coughlin is as follows:

The State Police trains its members at small arms ranges for 16 hours per year during two 8-hour sessions. A total of 400 State Police members would be trained at the Airfield Small

Other potential future receptors at the site include a range worker who conducts non-intrusive work at the Site (e.g., bullet recovery, targets set up, etc.), and a construction worker who conducts construction work or intrusive maintenance work at the Site (e.g., construction, digging, excavation, etc.). However, currently the State Police have no plans for construction work at the Site.

2.3.3 Standards, Criteria and Guidelines For This Project

Overall, the Airfield Small Arms Range needs to be transferred to the State of New York in a condition that is protectiveand in compliance with applicable or relevant and appropriate requirements. [redacted].

Because the Airfield Small Arms Range is a Superfund site in New York State, contents of the NYSDEC Technical and Administrative Guidance Memorandum #4046 (Determination of Soil Cleanup Objectives and Cleanup Levels) will be used as site remediation goals within the Superfund process. Similarly, New York State groundwater quality standards will be used as site remediation goals. Additional potentially applicable standards, criteria and guidelines for this site include waste disposal requirements, erosion and sedimentation control, and other similar requirements that can be identified at a later time once a preferred long-term remedial actions is recommended.

SECTION 3

CHARACTERIZATION ACTIVITIES

3.1 INFORMATION REVIEW AND SITE VISIT

A review of available historical information regarding the Airfield SAR has been conducted. This review was initiated during preparation of this work plan. Parsons will evaluate additional information about lead speciation within Airfield SAR soils once that information becomes available from the United States Army Center for Health Prevention and Preventative Medicine.

Use of the Airfield SAR is intended to continue by the State of New York for the foreseeable future as a small arms range. A site visit will be conducted to validate the findings of the historical information review and to assess the current conditions of the site. Particular attention will be devoted to identifying firing points and target areas with the objective of further defining potential source areas and the likely extent of impacts. Observations made during the site visit will better define the drainage system at the Airfield SAR to determine potential surface water migration pathways. The proposed characterization sampling locations will be staked/marked during the site visit.

Prior to beginning the proposed sampling effort, a safety briefing will be given as a precaution in the unlikely chance that some ordnance material may be encountered during the field effort. If any such ordnance has some reasonable (albeit small) chance of being encountered, the Army would provide an experienced observer who would be on site throughout the field effort and could visually detect potential ordnance material.

3.2 SOIL CHARACTERIZATION

The objectives of the soil sampling program at the Airfield SAR are to: determine whether past use of the site as a firing range has impacted the environment; establish potential for constituents in soil to infiltrate to groundwater; and to assess the adsorptive potential of the soil by performing total organic carbon (TOC) analyses on soil samples.

Soil samples will be collected from the earthen berms associated with the 20-lane small arms firing range and the two-lane machine gun range and from locations between the shooter platform and the face of each berm. Soil samples will also be collected from the surface water drainage swales. The proposed soil sampling locations are shown on Figure 3.1. Sample collection procedures shall be conducted in accordance with the Generic Installation Remedial Investigation/Feasibility Study (RI/FS) Workplan for Seneca Army Depot Activity (Parsons ES, 1995a).

The sample locations and quantities shown on Figure 3.1 may be adjusted in the field based on field observations and/or site conditions at the time of the sampling event. Proposed sample locations include:

- Seven berm samples taken approximately 100 feet apart;

- Eleven hand auger borings and/or shovel samples taken approximately 50 feet apart on the range floors;
- Nine samples taken approximately 80 feet apart on the interior face of the berms [redacted];
- Four sediment samples taken approximately 30 feet apart downgradient from the discharge points of the range drainage network.

Although the Final Work Plan for the Environmental Baseline Survey at the Seneca Lake Housing Site (Parsons, 2001) included geophysical surveys, such surveys are not included in this work plan for the Airfield SAR. Geophysical surveys are often used to detect the accumulation of metallic debris, including brass cartridge casings or lead bullets. Geophysics is often used to delineate areas of concentrated metal debris when the site has been significantly reworked (e.g., the earthen berms have been demolished and graded at the site). However, the earthen berms at the Airfield SAR are intact, and it is likely that metallic debris is concentrated very near the firing platform and the firing berm. Any impact deep within the berm materials will be quantified with the deep soil boring work described in Section 3.2.2.

3.2.1 Hand Auger/Shovel Soil Sampling

Hand auger borings and/or shovel samples will be collected at locations on the range floor between the shooter platform and the face of the berms. The same type of samples will also be collected from the face of the berms (berm interior) at past range target height (s) plus or minus approximately two feet, and from adjacent drainage swales. These swales are vegetated and carry water only during storm events. Therefore, swale sampling will be conducted using soil sampling methods rather than sediment sampling methods. The proposed locations of 24 hand auger borings are shown in Figure 3.1. These proposed sampling locations and quantities may be modified in the field based on actual site conditions, including surface obstructions (e.g., concrete or utilities). Soil samples will be collected at the location of previous firing stations as shown in Figure 3.1.

Hand auger borings will be advanced manually using a stainless steel hand auger to a depth of approximately two feet below ground surface. Borings drilled on level ground will be advanced vertically. To collect samples from the face of the berms, the hand auger or shovel will be advanced horizontally into the berm. A total of 48 soil samples will be collected; two soil samples from each location. One soil sample will be collected from each location at the zero to 0.5-foot depth interval. A second soil sample will be collected from each location at the 1.5 to 2-foot depth interval. If hole collapse is a problem, a temporary casing will be pushed approximately 1.5 feet into the soil after the zero to 0.5-foot sample is collected. The second sample at each location will be collected with the hand auger beyond the end of the casing (1.5 to 2 feet). The temporary casing will be removed after sampling is complete. After sampling has been completed, remaining soils will be placed back into the boreholes.

Samples will be transferred from the hand auger sampler to a decontaminated stainless steel bowl. Each soil sample will be screened using a No. 10 sieve for visible bullets and bullet fragments either in the field or at the lab, homogenized and placed in a laboratory-supplied sample container. A No. [redacted] sieve has a [redacted] opening size for

[redacted] Any bullets or bullet fragments present will be removed from the soils prior to filling the sample bottles. The approximate depth and location of each sample will be documented in the field book. Following sample collection, each sampling location will be staked in the field.

3.2.2 Soil Borings/Soil Sampling

Soil borings shall be advanced through the berms at the seven locations shown on Figure 3.1. The borings will be advanced using an all-terrain vehicle (ATV) drill rig [redacted] characterize the extent of lead within the berm material. The ATV rig will be capable of providing split spoon interval sampling. Proposed boring locations and quantities may be modified in the field based on field observations and/or site conditions at the time of the sampling event.

Soil borings will be advanced using hollow stem augers (4.25- or 6.25-inch inside diameter.). The cuttings from the top two feet of the borings will be segregated from the rest of the soil cuttings produced during the boring process. Split spoon samples will be collected at every two-foot interval between the surface and the base of the berm using a two-foot long split spoon sampler. Samples will be described according to the Unified Soil Classification System as presented in ASTM Method D-2488, Standard Practice for the Description and Identification of Soils (Visual-Manual Procedure). A complete description of the soil type will be recorded in the field logbook.

The soil samples exhibiting the greatest field evidence of contamination based on visual evidence of bullets or bullet fragments within each six-foot interval beginning at the berm surface, will be submitted for laboratory analysis. [redacted] The approximate depth and location of each sample will be documented in the field book.

After soil sampling and descriptions have been completed, the boring will be backfilled with the cuttings, placing the top two feet last. If settling occurs, borings will be topped off with grout or clean soil.

3.2.3 Soil Sample Analyses

Collected soil samples will be analyzed for total lead using NYSDEC Analytical Services Protocols. Thirty percent of the soil samples submitted for lab analyses will be analyzed for Target Analyte List (TAL) metals using NYSDEC Analytical Services Protocols, and 50 percent of the soil samples will be analyzed for TOC using the NYSDEC-preferred Lloyd Kahn Method. To

assess leachability of lead to underlying groundwater and provide disposal characterization data, approximately 15 percent of the soil samples will also be analyzed for TAL metals using the Synthetic Precipitation Leach Procedure (SPLP) (SW-846 Method 1312), and approximately 15 percent of the soil samples will be analyzed for TAL metals using the Toxicity Characteristic Leaching Procedure (TCLP) (SW-846 Method 1311).

Samples will be selected for TAL metals, TOC, SPLP, and TCLP analyses based on field observations (e.g., visually impacted materials) and also to provide additional data for samples uniformly distributed throughout the site. If field observations can not be used to identify the most impacted samples, selection will be based as feasible on total lead concentrations that are measured in the lab prior to the other analyses. Detailed descriptions of the above methods, as well as lists of reported analytes, are presented in Appendix C, Chemical Data Acquisition Plan, of the Generic Installation RI/FS Workplan (Parsons, 1995a).

3.3 GROUNDWATER CHARACTERIZATION

Three groundwater wells will be installed and sampled to determine aquifer characteristics, such as groundwater flow direction and hydraulic conductivity and to assess groundwater quality and the potential migration of chemical contaminants downgradient of the Airfield SAR. The wells will be installed in a triangular pattern to provide the best configuration for determining the groundwater flow direction beneath the site.

The proposed monitoring well locations are shown in Figure 3.1. These locations may be modified in the field based on field observations and/or site conditions. One well (MW-1) will be installed at what is most likely an upgradient location to the Airfield SAR to potentially assess the background water chemistry at the Airfield SAR and two wells (MW-2 and MW-3) will be installed downgradient and as close as possible to potential source areas.

Drilling methods for well installation will be the same as those for soil borings as described in Section 3.2.2 and in the Generic Installation RI/FS Workplan (Parsons, 1995a). Monitoring well installation, development, and split-spoon soil sampling procedures are described in Appendix A, Field Sampling and Analysis Plan (FSAP), of the Generic Installation RI/FS Work Plan (Parsons, 1995a). In particular, the installation of monitoring wells is described in Section 3.5 of the FSAP, and the development and sampling of wells is described in Section 3.6. of the same plan.

Monitoring well borings will be advanced to a depth that allows a ten-foot well screen to intersect the water table. Care will be taken not to breach a shallow confining layer, if present. The Parsons Field Team Leader, as necessary, may modify well construction if the water table is close to ground surface or if a shallow confining layer is encountered. Any modification will be reflected in the monitoring well boring logs to be completed by the Parsons Field Team Leader.

Split spoon samples will be collected continuously from ground surface to total depth in each monitoring well boring. Samples will be described according to the Unified Soil Classification System (USCS) as presented in ASTM Method D 2488, Standard Practice for the Description and Identification of Soils (Visual-Manual Procedure). A description of the soil type will be recorded in the field logbook.

After well installation, the wells will be developed and the horizontal location and the elevation of the top of the PVC riser will be surveyed. The requirements of field surveying are described in Section 3.13.1 of the FSAP. Groundwater levels will be measured in each of the monitoring wells in accordance with Section 3.11.1 of the FSAP (Parsons, 1995a). [redacted]

3.3.1 Groundwater Sampling

Groundwater samples will be collected from the three new monitoring wells at the Airfield SAR. The objective of the sampling will be to evaluate any potential site-related impacts to shallow groundwater quality. Prior to purging and sampling, the static water levels will be measured in each well. Monitoring wells will be allowed to equilibrate a minimum of 24 hours between development and purging for sampling. The wells will be purged by removing a minimum of three well volumes to assure that the water in the well is representative of the groundwater. Purge water will be stored in 55-gallon drums. The wells will be allowed to recover to at least 80 percent of the static water level before sampling.

Groundwater samples from each monitoring well will be sampled and analyzed one time for TAL metals according to the NYSDEC Analytical Services Protocol. Groundwater samples will be collected using either dedicated disposable bailers, or a low-flow peristaltic or submersible pump and dedicated tubing. The methodology for collecting groundwater samples to be followed for this work is presented in Appendix C of the Generic Installation RI/FS Work Plan (Parsons, 1995a).

3.4 DATA QUALITY OBJECTIVES

[redacted]

Field quality control (QC) will consist of the collection and analysis of rinsate blank, field duplicate, and matrix spike/matrix spike duplicate samples at a frequency of 5 percent (1 for every 20 samples) for each sample media (soil and groundwater). Field QC samples will be identified using standard sample identifiers, which will provide no indication of their nature as QC samples. Quality Assurance/Quality Control (QA/QC) sampling requirements are described in Section 5.4 of Appendix C of the Generic Installation RI/FS Workplan (Parsons, 1995a). Required sample

containers, preservation techniques, and holding times are also specified in the above-referenced work plan.

3.5 DATA VALIDATION AND MANAGEMENT

The analytical data generated during the site characterization activities will be reviewed and validated by a data evaluation staff. Data validation of the Level IV analytical deliverables will be performed in accordance with USEPA Region 2 data validation procedures (see references below). The Level IV data validation package will include the following:

- Contract Compliance Screening,
- Verification of 100 percent of all Quality Control sample results (both qualitative and quantitative),
- Verification of the identification of 100 percent of all sample results (both positive hits and non-detects), and
- Recalculation of 10 percent of all investigative sample results.

This work will be performed by trained and experienced data validators that have conducted similar validations using New York State CLP-like requirements.

Standard operating procedures (SOP) for USEPA Region 2 data validation are as follows:

- "CLP Organics – USEPA Contract Laboratory Program Statement of Work for Organics Analysis OLMO 4.2," SOP No. HW-6, May 1999;
- "Inorganics – Evaluation of Metals Data for the Contract Laboratory Program," SOP No. HW-2, March 1990 (Revised January 1992); and
- [redacted] March 2001.

Once the data are validated, results will be incorporated into the Seneca Data Management System being maintained in Parsons' Boston office. Data incorporation will be consistent with procedures used to incorporate data from other sites at Seneca.

3.6 DECONTAMINATION

Drilling and field sampling equipment will undergo decontamination between sampling locations and prior to leaving the site. Drilling equipment, including the drilling rig, augers, tools, and split-spoon samplers will be cleaned between drilling locations with a high-pressure steam-cleaning unit at a temporary decon pad to be placed by the driller. Water from the steam-cleaning activities will be collected and transferred to 55-gallon drums for appropriate disposal. Sampling equipment, including stainless steel bowls and spoons will be washed with potable water and a phosphate-free detergent such as Alconox. No organic solvents such as acetone will be used.

3.7 MANAGEMENT OF CHARACTERIZATION-DERIVED WASTE

Characterization-derived waste that will be generated from this project will include relatively small quantities of soil cuttings or excess soil samples, decontamination fluids from sampling equipment and personnel decontamination, well purging and development water, and personal protection equipment (PPE). Excess soil resulting from soil augering will be staged at the Airfield SAR for management during the pilot test. Appropriate disposal will be arranged based on the results of waste characterization analyses.

Equipment decontamination fluids will consist of wastewater containing detergent and soils. These constituents are expected to be significantly diluted with rinse water as well as with decontamination wastewater. These liquids will be containerized and staged at an onsite location designated by SEDA pending appropriate disposal by the Army in accordance with applicable rules and regulations. Well purging and development water will be containerized and staged like the equipment decontamination fluids. PPE waste such as Tyvek suits and protective gloves will be double-bagged and disposed of as a non-hazardous solid waste.

Management of characterization-derived waste materials will be coordinated with Seneca Army Depot with the objective of not storing derived waste materials on site for more than 90 days.

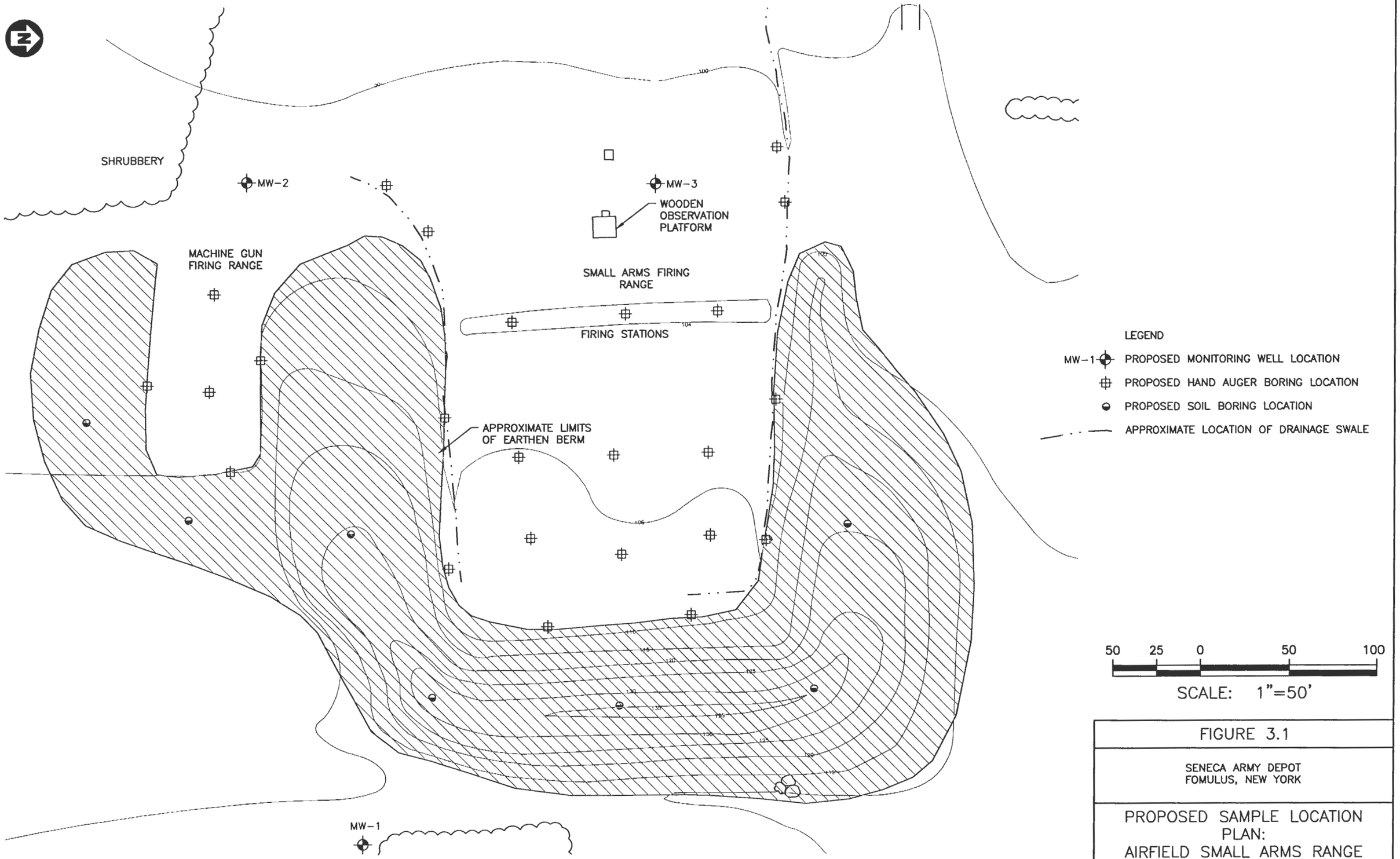

FIGURE 3.1

SENECA ARMY DEPOT
FOMULUS, NEW YORK

PROPOSED SAMPLE LOCATION PLAN:
AIRFIELD SMALL ARMS RANGE

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

No XREFs
P:\741401\CAD\41401G01.DWG, STEV, 03/19/02, 15:40, 1=1

SECTION 4

CHARACTERIZATION FOLLOWUP

The results of the characterization activities described in Section 3 will be presented in a brief report to be prepared following the characterization work. Analytical data generated during the characterization will be assessed. Lead speciation data for the Airfield SAR that is currently being analyzed and is expected to be available from USACHPPM will also be assessed. The Army's steps to be considered prior to transferring the Airfield SAR to the State of New York for continued use as a small arms range will be documented as well.

SECTION 5

SCHEDULE

The proposed schedule for implementation of the Airfield SAR characterization activities and preparation of the site for transfer to the State of New York is presented below.

Work Task	Anticipated Date (Week of)
Submit Final Characterization Work Plan to NYSDEC and USEPA (Task 2)	June 24, 2002
Conduct Characterization Field Activities (Task 3)	August 5 – [illegible], 2002
Analytical Results from Field Investigation/Sampling (Task 3)	[illegible] 12 – 26, 2002
Prepare Report of Findings and action plan	Early August 2002
Prepare parcel for transfer to the State of New York for continued use as a small arms range	Fall 2002

SECTION 6

REFERENCES

Florida State University College of Medicine. 2002. On-Line Firearms Tutorial. http://medlib.med.utah.edu/WebPath/TUTORIAL/GUNS/GUNGSR.html

Parsons, 1995a. Final Generic Installation Remedial Investigation/Feasibility Study (RI/FS) Workplan for Seneca Army Depot Activity. August 1995.

Parsons, 1995b. Expanded Site Inspection Report, Three Areas of Concern, Seneca Army Depot, Romulus, New York. December 1995.

Parsons, 2000. Technical Protocol for Determining the Remedial Requirements for Soils at Small-Arms Firing Ranges.

Parsons, 2001. Final Work Plan for the Environmental Baseline Survey (EBS) at the Former Small Arms Range at the Lake Housing Site, Seneca Army Depot Activity, Romulus, New York. November 2001.

United States Environmental Protection Agency, 1988. Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, OSWER Directive 9355.3-01. October 1988

United States Environmental Protection Agency. 1996. Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil. Technical Review Workgroup for Lead. December 1996.

United States Environmental Protection Agency, 2000. Data Quality Objectives Process for Hazardous Waste Site Investigations. EPA QA/G-4HW. Office of Environmental Information, Washington, DC. EPA/600/R-00/007. January 2000. Final.

United States Environmental Protection Agency Region 2. Best Management Practices for Lead at Outdoor Shooting Ranges. www.epa.gov/region02/waste/leadshot/download.htm. Downloaded March 2002.

VanCantfort. Lead at Firing Ranges and Munitions Disposal Facilities, Environmental Chemistry, Fate, Risks, and Remediation. Waste Policy Institute.

APPENDIX A

RESPONSES TO AGENCY COMMENTS

Author: absoloms@seneca-hp.army.mil at NetTalk
Date: 6/24/2002 1:28 PM
Normal
TO: "Alicia Thorne" <ajthorne@gw.dec.state.ny.us> at NetTalk
CC: Todd Heino at NetTalk, David Babcock at PARSYR1, Benedict Mcallister at NetTalk,
keith.hoddinott@amedd.army.mil at NetTalk, vazquez.julio@epamail.epa.gov at NetTalk,
"James Quinn" <jaquinn@gw.dec.state.ny.us> at NetTalk,
kevin.w.healy@hnd01.usace.army.mil at NetTalk,
randy.w.battaglia@nan02.usace.army.mil at NetTalk
Subject: Re: Seneca Airfield SAR work plan
---------- Message Contents

Alicia,
In response to the 13 June email, Parsons will NOT composite any soil samples. They will be individual samples. The other comment had to do with ecological evaluations with regard to the open space program. The open space program does not apply to this site. The small arms range is part of the communities plan to continue its use as a small arms range. There is no consideration for this site to be part of any open space program. Upon completion of the investigation and site characterization, prior to the final decision and transfer of this site, a determination for protection of human health and the environment will be assessed.

SM Absolom
SEDA CR.

Alicia Thorne wrote:

> Steve,
> The Army did not include responses to the Department's comments
> (emailed on 6/13/02) in the Response to Comments attached to this email
> from David Babcock. Does the Army plan on responding to our comments?
>
> Alicia
>
> >>> David Babcock <David.Babcock@parsons.com> 06/21/02 05:37PM >>>
> Parsons will be distributing paper copies of the attached work
> plan
> and responses to comments early next week. The attached is an
> advance
> copy for you. As Parsons indicated earlier today, field work will
>
> begin Tuesday, July 25.

SENECA AIRFIELD SMALL ARMS RANGE (SEAD-122B)
WORK PLAN

A. Responses to USEPA Comments Dated 12 March and 23 April 2002

General Comments

G1. USEPA General Comment #1 (analysis for explosives) -

Seneca has historical knowledge that the Airfield Small Arms Range was used exclusively for small arms training and qualifying activities. USEPA Region 2 guidance (EPA-902-B-00-001 available at epa.gov/region02/waste/leadshot) for outdoor shooting ranges is "to be considered" guidance. The USEPA Region 2 guidance focuses exclusively on lead as the parameter of concern at small arms ranges. In addition, Parsons has done much work at U.S. Air Force small arms ranges with no evidence that explosives are a small arms parameter of concern. The Army agrees to analyze some of the samples for other metals in addition to lead (see the response to Specific Comment #1 below), but not to analyze at the Airfield Small Arms Range for explosives. The Army and Parsons feel that not analyzing for explosives is consistent with the best management practices presented in the USEPA Region 2 guidance as well as past experience at Air Force small arms ranges. Furthermore, gunpowder is traditionally comprised of potassium or sodium nitrate, charcoal, and sulfur, most of which is consumed in the detonation reaction when it occurs.

Individual ranges are evaluated on a site- specific basis with respect to UXO and potential contaminants of concern. The Army has applied the CERCLA process to this evaluation to the extent practical. Briefly, this process involves compiling and reviewing historical information and records, conducting a detailed archive search, and performing sampling comparable to a "Preliminary Assessment/Site Investigation" phase under CERCLA prior to remediating a site.

Individual site history and an installation-wide archive search report provide the basis for proceeding at a given site. For a small arms range with no history of other ordnance, UXO would not be expected. A site such as this would be approached similar to a non-UXO site for non-OE contaminants of concern. As a range, an OE safety briefing would be held as an added awareness and safety effort for personnel. For a range where other items such as training grenades were used, there is more risk for UXO, so additional review and removal actions are necessary.

The R3M Rule, or the Range Rule Risk Methodology that the USEPA asked about, is described in a separate Powerpoint presentation that Seneca provided

to the USEPA RPM last week. This presentation is available from the Army Environmental Center web site. In the presentation, the Army's methodology is described in more detail, as well as how it relates to and follows the CERCLA process, including the nine evaluation criteria assessed in accordance with the NCP. Currently, the R3M Rule is not being implemented pending resolution between DoD and the USEPA of draft Range Rule contents.

G2. USEPA General Comment #2 -

Text to Section 2.1 will be added specifying that the maximum height of the berms is 28 feet. The contour interval for topography shown on Figure 3.1 is five feet.

G3. and G4. USEPA General Comments #3 and #4 -

Table 2.1 has been deleted from the work plan since it is not needed nor will it be used other than by the Army internally for their assessments prior to transferring the property.

G5. USEPA General Comment #5 - (additional samples at firing stations) -

OK. The work plan includes field adjustments. The sample rows shown in Figure 3.1 will be shifted so one of the sample rows aligns with the former firing stations.

G6. USEPA General Comment #6 - (basis for No. 10 sieve screening) -

The goal is to separate bullets and other lead fragments from soil particles. A No. 10 sieve is, by definition, approximately the transition between sand and gravel (2-millimeter diameter particles). The text in Section 3.2.1 will be expanded to more specifically explain this point. The definition of a No. 10 sieve can be found in a soil mechanics textbook.

Specific Comments

S1. USEPA Specific Comment #1 -

The work plan already includes analyzing all of the TAL metals for 30 percent of the samples. These samples will be taken as best as possible from impacted areas. By "as best as possible", we mean to the extent we can identify impacted areas while in the field based on visual observations and field measurements. Results for each of the TAL metals will be assessed. Table 2.1 and associated text have been removed. Screening values to be used will be TAGM 4046 soil cleanup objectives as agreed during our January 17 meeting at NYSDEC's headquarters in Albany. Lead in soil numbers specified in the comment will also be considered as the comment suggests.

S2. USEPA Specific Comment #2 - (drainage swale sampling) -

No change to the work plan is needed other than to clarify text in Section 3.2. Swales are vegetated.

S3. USEPA Specific Comment #3 - (geophysics) -

Wording in Section 3.2 will be revised but we do not propose to conduct geophysics. Sample locations shown at the edge of the berm will be specified to address sampling behind the targets. Any past rework of the berm will be addressed with the borehole samples through the berm from the top.

S4. USEPA Specific Comment #4 (sample height) -

Samples will be collected at the berm interior at past range target height(s) plus or minus approx. two feet. This will be added to Section 3.2.1 of the work plan.

S5. USEPA Specific Comment #5 (swale sampling) -

These swales are vegetated and carry water only immediately after storm events. Based on this, swale sampling should be based on soil sampling methods. We will make this point clearer in Section 3.2 of the work plan.

S6. USEPA Specific Comment #6 (drill rig samples) -

Borings will be advanced from the top to the base plus one to two additional feet below the base. If no field evidence of impacted soil is seen within a 6-foot interval, the sample for lab analysis from each 6-foot zone will be composited from varying 2-foot intervals to provide a wide reasonable vertical coverage as USEPA suggests. If the 0 to 2-foot interval shows the most field evidence of impact within the 6-foot interval, the soil sample from that interval will be submitted for analyses. These points will be added to Section 3.2.2.

S7. USEPA Specific Comment #7 - (berm sampling) –

The Army agrees each vertical interval needs to be characterized. The 15 percent goal for each of the three 2-foot intervals will be specified in Section 3.2.3 (see S6 above).

S8. USEPA Specific Comment #8 - (additional monitoring wells)

The Army does not propose to add any more monitoring wells. The work plan specifies three monitoring wells will be installed. The most contaminated soil

may later be removed. Locations for MW-2 and MW-3 will be shifted to the south as requested.

S9. USEPA Specific Comment #9 - (data quality) –

Wording in Sections 3.5 and 3.6 will be revised to be consistent with a previous USEPA comment on the Lake Housing work plan.

S10. – S12. USEPA Specific Comments #10 through #12 - (risk assessment documentation) –

Risk assessment work (i.e., all of Section 3.2 and Appendix A) has been removed from the work plan since it is not needed for USEPA/NYSDEC purposes at this time. We will be using TAGM 4046 objectives as NYSDEC has requested and as we all agreed at the January 17 meeting at Albany's NYSDEC Headquarters. The risk assessment work we originally presented in the Airfield SAR work plan was for internal Army use pertaining to the land transfer.

USEPA asked about the R3M process which pertains to sites with unexploded ordnance. Also, since the USEPA and the Department of Defense have agreed to disagree of the process to be used to implement the Range Rule, the R3M process is not being implemented even at unexploded ordnance sites.

The Army understands that the USEPA and NYSDEC's purpose is to make sure CERCLA requirements to address long-term conditions are met for the Airfield Small Arms Range. The risk assessment work summarized in the original draft work plan addresses risks associated with transferring the land to the State for continuing use of the site as a small arms range. Hence, the risk assessment, being used by the Army, addresses land transfer impacts and does not necessarily address long-term site control. The Army is aware the site most likely needs some remediation and that CERCLA requirements need to be met for this site over the long term. The proposed investigation work will delineate the extent of impact, and results will be used to help decide what needs to be done prior to transferring the site to the State. The proposed investigation will also be used to help assess what is needed to remediate the site in the long term. The site will eventually be evaluated based on evaluation criteria established in the National Contingence Plan (40 CFR Part 300). USEPA and NYSDEC have made it clear that TAGM 4046 soil cleanup objectives need to be addressed as part of this CERCLA evaluation, and the Army will document this in the revised work plan.

B. Responses to NYSDEC Comments 29 April 2002

1. NYSDEC Comment #1 (potential exposure pathways and receptors) –

   The NY State Police contact provided to Parsons by the Ms. Pat Jones of the Seneca Industrial Development Authority was Sgt. Tim Coughlin at the NY State Police barracks in Canandaigua, NY (phone (716) 398-3200). The written summary of Parsons communication with Sgt. Coughlin is as follows.

   The State Police trains its members at small arms ranges for 16 hours per year during two 8-hour sessions. A total of 400 State Police members would be trained at the Airfield Small Arms Range. In addition, the State Police have a mobile response team that trains monthly. The mobile response team has approximately 20 members that train four hours each month. Sgt. Coughlin also mentioned other entities that are considering using the range – prison guards, local police, county sheriff departments, and possibly the National Guard. Numbers of trainees and training periods for each of these entities have not yet been identified.

2. NYSDEC Comment #2 –

   Table 2.1 has been removed from the document based on earlier comments.

3. NYSDEC Comment #3 (risk-based calculations of soil lead concentrations) –

   Section 3.2 (and Appendix A) have been removed from the work plan as discussed in the response to USEPA Specific Comments 10 - 12 above. Nonetheless, the Army does not agree that this site is open space. The site is fenced and was used through 1999 for small arms training. The site will continue to be used by the NY State Police for small arms training for the foreseeable future. We believe long-term site noise and land maintenance to control brush and grass growth are not consistent with the open-space designation.

   The Army expects a deed provision will be placed on the Airfield Small Arms Range Parcel comparable the restrictive covenant attached to these responses. This covenant restricts activities at this parcel to training of small arms weapons.

4. NYSDEC Comment #4 (soil characterization on interior face of berms) –

   Composite samples are specified instead of discrete samples in order to account for possible differences in target heights during previous shooting training. As indicated in the response to USEPA Specific Comment #4, past range target heights plus or minus approximately two feet will be sampled and then composited at each location based on field observations. The purpose of these samples is to characterize concentrations on the face of each berm.

5. NYSDEC Comment #5 (number of soil samples from each boring) –

   The number of soil samples to be taken from each boring will depend on the total berm height at each boring location. Samples will be collected from every two-foot interval using two-foot-long split spoons. Samples from every six-foot interval down to the base of each berm will be submitted for laboratory analysis. This point will be made more specifically within the work plan.

6. NYSDEC Comment #6 (soil sample analysis) –

   The SPLP is proposed because it has been used at other small arms ranges around the country to assess metal leachability to underlying groundwater. The Army wants to assess whether the metals (lead in particular) are leaching to the groundwater. Water quality data from the groundwater monitoring wells will indicate if the groundwater is impacted but not necessarily the source of the impact. The TCLP is proposed strictly to define RCRA hazardous waste toxicity characteristics.

7. NYSDEC Comment #7 (characterization follow-up) –

   The only purpose of providing Section 4 was to indicate to the USEPA and NYSDEC the Army's intent prior to turning the parcel over to the State. Also, with the tight schedule for site transfer, the Army wanted to communicate its intent as soon as reasonably possible. The Army agrees that the option of a pilot test could be reconsidered depending on the characterization results.

8. NYSDEC Comment #8 (schedule) –

   The Army is trying to move quickly as desired by the local industrial development agency and the State Police. These parties would all continue to appreciate any effort the environmental agencies can make to expedite reviews for this site.

ATTACHMMENT TO SENECA AIRFIELD SMALL ARMS RANGE WORK PLAN RESPONSES

RESTRICTIVE COVENANT FOR SMALL ARMS TRAINING RANGE

A. PURPOSES

The Grantor has undertaken careful environmental study of the property and has concluded, that in its current environmental condition, the highest and best use of the Property identified in Exhibit is as a small arms training range. In order to protect human health and the environment, promote community objectives, and further the common environmental objectives of the United States, the parties to the Deed agree to be bound by the covenants and restrictions set forth, in perpetuity or until said restriction and covenants are released by the Grantor, the USEPA or its designee, and/or the NYSDEC is as provided below. These restrictions and covenants benefit the lands retained by the Grantor, the common development of the former Seneca Army Depot property, the State of New York, and the public welfare generally and are consistent with state and federal environmental statutes.

B. RESTRICTIONS AND COVENANTS

1. Notice of Use Limitation. The identified parcel is restricted to activities associated with the Training of small arms weapons. The area may not be used for residential housing, playgrounds or other activities associated with children. The restriction on activities conducted on the Property and use limitations contained herein are hereby incorporated by reference and shall be independently enforceable by the Grantor under this Deed as a Restrictive Covenant and equitable servitude; The Grantee, its successors or assigns, may obtain approval to modify the Covenant in accordance with the terms and conditions set forth, in Subsection 4 below. The Grantee and all subsequent transferees shall (i) include the provisions of this Section VI.B.1 in all subsequent lease, transfer, or conveyance documents related to the Property or any portion thereof until such time as the restriction is terminated and (ii) provide a copy to the Grantor of every amendment to the restriction within 14 days after it being duly recorded.

2. Restrictions. The restrictive covenant and equitable servitude described in this Section VI.B.1. have been determined to be necessary to ensure that the Grantor's Response Actions (as described in the FOST) are protective of foreseeable activities and uses on the Property and to prevent the future release or threat of release of hazardous substances. Notwithstanding the foregoing, the Grantor acknowledges that in order to achieve the economic redevelopment objectives of the EDC program and BRAC, certain activities and uses may be permitted as an exception to the Restrictive Covenants in this section VI in order to achieve the highest and best use of the Property.

3. Indemnification. The Grantee, on behalf of itself, its successors, and assigns covenants and agrees to indemnify and hold harmless the Grantor, its officers, agents, and employees from any and all claims, damages, judgments, loss, and costs, including fines and penalties, arising out of the violation of the Restrictive Covenants in this section X and the Grantor shall not be responsible for any costs associated with activity under a conditional exception, amendment, or as an exception to the Grant or Notice of AULs, or change in activity or use, including without limitation, costs associated with any additional investigation or remediation.

4. Modification of Restrictive Covenant.

Nothing contained herein shall preclude the GRANTEE from undertaking, in accordance with applicable laws and regulations, such additional investigation or remediation necessary to modify this restriction in Section VI B. Any additional remediation will be at no additional cost to the GRANTOR and with the GRANTOR's prior, written consent such consent not to be unreasonably withheld. Consent may be conditioned upon such terms and conditions as the GRANTOR deems reasonable and appropriate,

including the option of utilizing performance and payment bonds, insurance, and/or letters of credit. Upon completion of such investigation or remediation required to modify these restrictions and upon the GRANTEE's obtaining the EPA and/or NYDEC approval and, if required, any other regulatory agency, the GRANTOR agrees to release or, if appropriate, modify this restriction by executing and recording, in the same land records of the State of New York as the deed, a Partial Release of Covenant. Grantee shall bear the cost of recording and reasonable administrative fees.

C. ENFORCEMENT

The restriction and covenant stated in Section VI.B benefit the United States, the territory surrounding the Property, including lands retained by the United States, and the public generally, and, therefore, are enforceable by the United States. The Grantee covenants for itself, its successors, and assigns that it shall include and otherwise make legally binding, the restrictions in all subsequent lease, transfer, or conveyance documents relating to the Property subject hereto.

Author: David Babcock at PARSYR1
Date: 4/4/2002 3:53 PM
Normal
TO: ajthorne@gw.dec.state.ny.us at NetTalk
CC: vazquez.julio@epamail.epa.gov at NetTalk, absoloms@seneca-hp.army.mil at NetTalk,
randy.w.battaglia@nan02.usace.army.mil at NetTalk,
marshall.j.greene@hnd01.usace.army.mil at NetTalk,
kevin.w.healy@hnd01.usace.army.mil at NetTalk, wrightb@osc.army.mil at NetTalk,
Christopher Raddell at NetTalk, Todd Heino at NetTalk, Megan Miller at NetTalk,
Heather Raymond at NetTalk
Subject: Re: Response: Seneca Airfield Small Arms Range Work Plan
---------- Message Contents

Alicia -

Below is the Army's response to your request for clarification from last week. Please contact us if you have any additional questions and please advise if NYSDEC will have any other comments on the work plan based on the work plan itself, the Army's earlier response about incorporating TAGM 4046, and responses to USEPA's comments dated March 26. Thank you. We have not yet received any feedback from the USEPA about our March 26 responses to their comments.

We understand USEPA and NYSDEC's purpose is to make sure CERCLA requirements to address long-term conditions are met for the Airfield Small Arms Range. The risk assessment work summarized in the original draft work plan addresses risks associated with transferring the land to the State for continuing use of the site as a small arms range. Hence, the risk assessment, being used by the Army, addresses land transfer impacts and does not necessarily address long-term site control.

The Army is aware the site most likely needs some remediation and also that CERCLA requirements need to be met for this site over the long term. The proposed investigation work will delineate the extent of impact and be used to help decide what needs to be done prior to transferring the site to the State. The proposed investigation will also be used to help assess what is needed to remediate the site in the long term.

The site will eventually be evaluated based on evaluation criteria established in the National Contingence Plan (40 CFR Part 300). USEPA and NYSDEC have made it clear that TAGM 4046 soil cleanup objectives need to be addressed as part of this CERCLA evaluation, and the Army will document such in the revised work plan.

---------- Forward Header ----------
Subject: Re: Responses to USEPA: Seneca Airfield Small Arms Range
Author: "Alicia Thorne" <ajthorne@gw.dec.state.ny.us> at NetTalk
Date: 3/27/2002 7:34 AM

Please clarify the Army's response to EPA specific comments #10 through #12.

Alicia

Specific comments #10 through #12 - (risk assessment) Risk assessment work (i.e., all of Section A) has been removed from the work plan since it is not needed for USEPA/NYSDEC purposes.

New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Eastern Remedial Action, 11th Floor
625 Broadway, Albany, New York 12233-7015
Phone: (518) 402-9623 • FAX: (518) 402-9627
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL # of pages ▶ 2

To See Distribution	From S. Absolom
Dept./Agency	Phone # 607 / 869-1309
Fax #	Fax #

NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION

Fax # (607) 869-1362	Fax #

Fax to Todd Kevin Ready

April 29, 2002

Mr. Stephen Absolom
Chief, Engineering and Environmental Divisio
Seneca Army Depot Activity (SEDA)
5786 State Route 96
Romulus, NY 14541-5001

Re: Seneca Army Depot Activity
NYS Inactive Hazardous Waste Disposal Site No. 8-50-006
Draft Characterization Work Plan for the Airfield Parcel (SEAD-122B) Small Arms Range

Dear Mr. Absolom,

The New York State Department of Environmental Conservation has reviewed the above referenced document dated February 2002. Comments, in addition to those provided in my March 7, 2002 letter, are as follow:

1. Page 2-4, Section 2.3.2, Potential Exposure Pathways and Receptors: This section states that SEDA has worked with the LRA to transfer the airfield parcel, along with the small arms range, to the New York State Police for state use. It continues to state that "the State Police has been consulted about the future use of the Site (personal communication between Parsons and the New York State Police, January 2002.)" The Department would like the name and contact information of the New York State Police representative that Parsons and the LRA has consulted. If the document is going to reference personal communication as quoted above, a written summary of this communication should be provided as an attachment to the document.

2. Table 2.1: The EPA Region III RBC is inappropriate for this site and should be removed from the table.

3. Page 3-1, Section 3.2, Risk Based Calculations of Soil Lead Concentrations: There is a statement that "Parsons has calculated risk-based soil lead concentrations for reasonably anticipated future human use at the SAR." The assumed future human use is based on the premise that "...the Army may transfer the property over to the New York State Police." Though that may be its future use, its current use is as open space. Hence, it is wildlife habitat and wildlife screening criteria should also be applied in an analysis of the site.

4. Page 3-2, Section 3.3, Soil Characterization: In the third paragraph, it lists the proposed sample locations, which includes "nine composite samples taken approximately 80 feet apart on the interior face of the berms." Discrete samples should be taken on the interior face of the berms to better determine exact locations of contamination, not composite soil samples.

5. Page 3-3, Section 3.3.2, Soil Borings/Soil Sampling: It should be noted how many soil samples will be taken at a minimum from each soil boring.

6. Page 3-4, Section 3.3.3, Soil Sample Analysis: It is unclear why the soil samples, in addition to being analyzed via TCLP, "will also be analyzed for TAL metals using the Synthetic Precipitation Leach Procedure (SPLP) (SW-846 Method 1312)." Please explain. Perhaps money would be better spent in delineating the extent of contamination for total lead prior to selecting approximate locations for select analyses such as SPLP or TCLP.

7. Page 4-1, Section 4, Characterization Followup: This section goes into great detail explaining the purpose of the proposed pilot test work plan, the pilot test alternatives, and the reporting of the proposed pilot test. The Department suggests that the notion of a pilot test program be tabled until the exact nature and extent of contamination of the site is determined. The analytical results should be submitted in a characterization report and then the best course of action to take to address the small arms range contamination should be determined, perhaps at a BCT meeting.

8. Page 5-1, Section 5, Schedule: The regulatory agencies will need at least 30 days to review and comment on documents, contrary to the 2 weeks allotted in this schedule.

A facsimile of this letter will be sent to you today. If you have any questions, please contact me at (518) 402-9623 or by email at ajthorne@gw.dec.state.ny.us

Sincerely,

Alicia Thorne

Alicia Thorne
Bureau of Eastern Remedial Action
Division of Environmental Remediation

cc: J. Vazquez, USEPA
R. Koeppicus, NYSDEC
C. Bethoney, NYSDOH
T. Caffoe, NYSDEC Region 8
R. Scott, NYSDEC Region 8

Steve & Alicia:

I will not attend RAB meeting on April 16, but would like to get copy of the handouts. I will be eagerly waiting for your conference call on April 23rd at 1:30 PM.

In order to save time and space, I will address some of the informal drafts received.

1. On the draft responses regarding the Airfield Small Arms Range, I offer the following observations:

Comment #1: Has this site ever been evaluated for UXO's before and a determination been reached as to the safety regarding explosives ever made? What is DDESB's position on your determination not to sample for explosives on a Small Arms Range?
Specific#1: The statement "best as possible" needs to be explained.
Specific#10: Why not? Explain. What is the applicability of the R3M rule and our Baseline Risk Assessment?

SEAD-25/26 PRAP:

We need to see the tables and figures referenced.
Page 18, 2nd Column: 3rd and 5th bullets on red line are redundant.
Page 19, 1st Column, 3rd to last sentence: add the following to the sentence ending "groundwater impacts." ...that may remain after dewatering and groundwater treatment that will be conducted during excavation of soil.
Page 19: Add that both sites (SEAD-25/26) require 5-year reviews.

I hope the above help you expedite the formal documents.

Julio F. Vazquez, RPM
U. S. EPA, Region 2

Stephen Absolom

<absoloms@seneca-h p.army.mil> To: Alicia Thorne <ajthorne@gw.dec.state.ny.us>, Bradford C Wright <WrightB@osc.army.mil>, Clayton Kim <Clayton.Kim@aec.apgea.army.mil>, Jacqueline Travers <Jacqueline.Travers@parsons.com>, Julio Vazquez/R2/USEPA/US@EPA, Keith Hoddinott <Keith.Hoddinott@APG.AMEDD.army.mil>, Kevin Healy

04/10/2002 09:55 AM

Please respond to absoloms

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cc:

Subject: BCT / RAB

All,
I am recommending that the BCT meeting which would normally be scheduled for 17/18 April not be held and that a conference call BCT be held on the following Tuesday, April 23, starting a 1330 hours. To stay consistent with RAB meetings, the RAB will be held at its normal time on 16 April at the Romulus Town Hall. The agenda will be to give the RAB member an overview of the environmental projects and the status identifying where each project is. We will also provide them with the programing estimate for the next two years.

Since I will be at the DOD Land use control Meeting that week , Randy Battaglia will be hosting and briefing the program. Of course all are welcome to attend however I don't believe it is a command performance to be at the RAB.

SM Absolom
SEDA CR.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

fax to
Todd
Kevin

MAR 1 2 2002

Stephen M. Absolom
Seneca Army Depot Activity
Attn: BRAC Environmental Coordinator
5786 State Route 96
PO Box 9
Romulus, NY 14541-0009

Re: *Draft Work Plan for the Airfield Small Arms Range (SEAD-122B)*
Seneca Army Depot, Romulus, NY

Dear Steve:

This is in reference to the subject referenced Workplan dated February 2002. Please find our comments below.

I. GENERAL COMMENTS

1. This Work Plan neglects a significant type of contamination that could be found at the site. In addition to metals contamination, explosives are frequently detected in soils at arms ranges, resulting from combustion of the primers in bullets. Section 2.2 alludes to the possibility of combustion residues of primer and powder, but focuses only on the metal residues that would result from the fired ammunition. However, the Final Work Plan for the investigation at a similar small arms range on the base– the Former Small Arms Range at the Lake Housing Site– proposes sampling for explosives as well as metals, indicating that these are also likely to be in the soils as metals. For these reasons, samples collected at the Small Arms Range Airfield Parcel (SAR) should be analyzed for explosives as well as for metals and total organic carbon (TOC).

2. This document should provide the height of the berms.

3. Table 2.1 serves no useful purpose, and is potentially misleading. Contaminants of concern are determined on a site-by-site basis by screening site-specific concentrations against

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4. existing EPA risk-based screening values. Comparison of maximum concentration results for certain metals in a small sample (three) of small arms ranges hardly substantiates that the metals should not be considered at this site. This table should be deleted.

   Overall, the approach taken to determine chemicals of concern (COCs) for this site is not in accordance with standard risk assessment protocols. The need for calculating risk-based, site-specific cleanup values must be driven by site conditions, not case studies from other sites. In addition, chemicals cannot be eliminated as chemicals of potential concern because the RBC is deemed to be too high. The approach for determining COCs and for calculating cleanup goals for this site should be rewritten in accordance with EPA risk protocols.

5. Additional samples should be collected from the firing stations where the persons using the range would be standing and conceivable picking up bullets which were dropped. This could result in exposure to contaminated soil with hand to mouth activities while participants are using the range.

6. It is indicated that the soil samples will be screened using a No. 10 sieve for visible bullets and bullet fragments. Please indicate an appropriate reference for this method.

II. SPECIFIC COMMENTS

1. Section 2.2, Page 2-3. The third paragraph under the "Combustion Residues" portion of this section indicates that antimony will not be a considered a constituent of concern (COC) at the site based on the fact that the RBC for this metal is calculated using a much higher exposure frequency than is applicable to the Small Arms Range (SAR) site. This is not appropriate. Antimony should be screened using the existing RBC of 820 mg/kg. If this screening retains antimony as a COC, site-specific risk-based cleanup goals should then be calculated using an exposure frequency of 52 days per year.

   It appears that metals such as barium, copper and zinc are being eliminated as COCs for this site based on the comparison presented in Table 2-1. Again, this is inappropriate. Site concentrations of these metals, and any other site constituents, should be screened versus RBCs. If the screening determines them to be COCs at this site, then site-specific risk-based cleanup goals should be calculated.

   In addition, the same paragraph indicates that no RBC is available for lead. While this is true, other screening levels have been developed for use at lead-contaminated sites. EPA's OSWER Directive 9355.4-12, issued July 14, 1994 established a lead screening level of 400 ppm at residential properties. The TSCA soil hazard level for lead of 1,200 ppm as a non-residential screening level is another example of a screening value. The EPA OSWER values are generally accepted screening values for lead and should be used to screen lead concentrations at this site.

Revise this section as well as associated calculations. Cleanup goals should be calculated following EPA guidance for calculation Preliminary Remediation Goals. (EPA, 1991)

2. Section 2.3.1, Page 2-3. The second paragraph in this section indicates that surficial runoff is not expected to be a significant release mechanism at the SAR because it is "largely vegetated." However, Section 3.3.1 on Page 3-2 indicates that samples will be collected from surface water drainage swales that are adjacent to the site. These statements appear contradictory. Revise the text to describe actual drainage pathways present at the site.

3. Section 3.3, Page 3-2. The last paragraph of this section indicates that the geophysical surveys that were described in the Work Plan will not be completed based on the observation that the berms at the SAR are intact. However, the Work Plan for a similar characterization survey (at the Former Small Arms Range at the Lake Housing Site) states that one of the goals of a geophysics survey is to identify metallic materials that could be located behind the target (the berm). This is an issue that is unrelated to whether the berm is intact, and one that is not satisfied by the proposed sample locations. In addition, both Section 1.2 (on Page 1-1) and Section 2.3.1 (on Page 2-3) indicate that "it is likely that some of the berm and surface soils have been reworked and relocated within the SAR." Therefore, it is recommended that the geophysical survey that was defined in the Work Plan and scheduled for the SAR be completed.

4. Section 3.3, Page 3-2. This section indicates that nine composite samples will be collected from the interior face of the berm, and these sample locations are shown on Figure 3.1. This is the area of the berm that will most likely contain the highest concentration of bullets and, correspondingly, the highest metal concentrations. However, the text does not describe the locations of planned samples. For example, will they be collected near the base, firing height (which is where the bullets would likely be concentrated), halfway up the face, or at the top? Revise the text to clarify the height of the berm face samples.

5. Section 3.3.1, Page 3-3. This section indicates that a hand auger will be used to collect the four samples in the drainage swale. If the sediments in this swale are saturated, it may not be possible to use the hand auger. Describe an alternate method to collect the four sediment samples in the event that the drainage swales contain water.

6. Section 3.3.2, Page 3-3. The first paragraph of this section indicates that the all terrain vehicle drill rig will advance borings "to 30 feet to the natural grade elevation." This sentence is somewhat unclear. Does this mean that the drill ring will drill from the top of the berm to 30 feet, or that it will drill from the top to the base of the berm?

   In addition, the sampling method that will be employed for these borings is unclear. The text indicates that the priority will be to sample areas that demonstrate visual evidence of contamination. If a depth interval does not demonstrate visual contamination, then it will be sampled in the center of each six-foot interval. Will this be a composite sample, or will it be

sampled every foot in the center range of the interval?

Lastly, the text states that the 0 to 2 foot interval will be segregated for use as backfill cuttings, and does not provide for the possibility that this interval could be contaminated. If this interval of a boring demonstrates contamination– such as stained soils, noticeable odor, or other evidence– it should be sampled.

Please revise the text to address these issues.

7. Section 3.3.3, Page 3-4. The first paragraph reviews the analytical requirements of the samples at this site, and the frequency with which the collected samples will be analyzed by each particular method (i.e., total lead, Target Analyte List [TAL] metals, Synthetic Precipitation Leach Procedure [SPLP], or Toxicity Characteristic Leaching Procedure [TCLP]). Additional discussion should be provided to specify that sampling personnel will verify that at least 15% of the samples collected from ***each depth*** sampled in the berm will be analyzed by the various methods. This procedure will ensure that, for example, some 0 to 2 ft interval samples are analyzed via TAL metals or TCLP metals methods. Analytical results must provide an accurate representation of the entire berm, not just certain layers.

   Furthermore, selected methods are acceptable provided that the resultant quantitation limits (a.k.a. reporting/detection limits) are lower than the most conservative criteria against which this data will be compared.

8. Section 3.4, Page 3-4. EPA recommends the installation of additional sampling wells. First, the most contaminated soil boring location should be further developed into a monitoring well. Second, considering the nature, extent, and concentration of contaminants associated with the machine gun firing range, either an additional groundwater monitoring well directly downgradient of the machine gun firing range or a shift of about one hundred feet (100') south for the proposed MW-2 and MW-3 seems warranted.

9. Section 3.6, Page 3-5. The text states similar outdated information submitted for the Former SAR at the Lake Housing Site. Our comment to define the quality and quantity of data to support the environmental decisions at hand can be found in our comment letter of November 1 2002.

10. Section A-1.3. During discussion of the exposure routes that were applicable to the SAR site, text indicates that "inhalation and dermal... routes for soil-derived lead were not evaluated since [these pathways are] typically insignificant when compared to ingestion." While it is not possible to calculate inhalation or dermal risks from lead, these pathways should be considered when calculating PRGs for other chemicals of concern (antimony and other metals) since both pathways are complete for all receptors. The second paragraph of Section 2.3.1 lists dust emissions as an additional potential release mechanism. Portions of the site will remain in use as a firing practice range involving firing high-velocity bullets (such as those fired from machine guns, as referenced in Section 3.3) into the soil in the earthen berm. The impact of these bullets

into the soil could generate airborne particles. Therefore, the inhalation pathway should be evaluated. In addition, there will be direct contact with the soils for all receptors. Therefore, the dermal pathway is a complete pathway also. Please include evaluation of the inhalation and dermal exposure pathways for COCs other than lead.

Additionally, it is indicated that the site may also be used by other entities such as corrections/prison guards, local police departments, county sheriff departments, and possibly the National Guard. These populations may fit a similar usage pattern as the State Police and State Police mobile response team, however, there is a possibility that their use of the site may be greater. Additionally, with the likely possibility that the site will be used by additional groups of people, it is highly likely that the range will be open more than 52 days per year which will require the range worker to be present at the site more frequently than estimated in the conceptual site model, possibly even 250 days per year. It is recommended to separate the receptor population listed as range user/worker into a range user and a range worker, as the exposure assumptions for the two populations are likely be different. The range worker will likely be the most sensitive population due to the amount of time spent at the range and the work activities involving contact with soil at the range (i.e., picking up spent shells, etc.). It is further recommended that the exposure time for a range worker be increased to better reflect the potential exposure to a range worker, which may be present at the site 5 days a week, as a maximum value. Another option would be to adopt the standard commercial/industrial value of 1250 mg/kg that is based on using the default values in the Adult Lead Model for the range worker, which includes a soil ingestion rate of 0.05 g/kg and an exposure frequency of 219 days.

11. Page A-6, Section A.5. There are contradictory statements made in the second paragraph. It is stated that the assumptions used for exposure frequency may overestimate the risk due to being conservative in nature. However, it is then indicated in the next sentence that the risk-based lead concentrations may not be protective to future range users due to the possibility of increased use of the range in the future. Based on the information provided in the document, the assumption of 52 days per year does not appear to reflect a conservative estimate. Additionally, there are no controls in place to limit exposure frequency at the range which indicates a need for a conservative estimate to be used. Since there is evidence that the use of the range is likely to be expanded in the future, the statement regarding the risk-based concentrations as not being protective is likely correct. As the risk-based concentrations are designed to be protective for all users of the site, they should be based on the most sensitive population with conservative estimates being utilized, which indicate the need to increase the exposure frequency for the adult range worker.

12. Section A.6. The second paragraph of this section implies that the risk calculations may be revised based on the information compiled by USACHPPM. It is assumed that the discussion refers to the lead speciation data. It is unclear in what way the lead speciation data could be used in the risk evaluation from lead exposures because the lead models use input values of total lead concentration. Clarify the way this additional information would be expected to impact risk calculations for lead exposure.

A facsimile of this letter will be sent to you today. If you have any questions, please call me at (212) 637-4323.

Sincerely yours,

Julio F. Vazquez, RPM
Federal Facilities Section

cc: A. Thorne, NYSDEC
C. Bethoney, NYSDOH
R. Scott, NYSDEC-Avon
K. Healy, USACE-HD
T. Heino, Parsons ES