

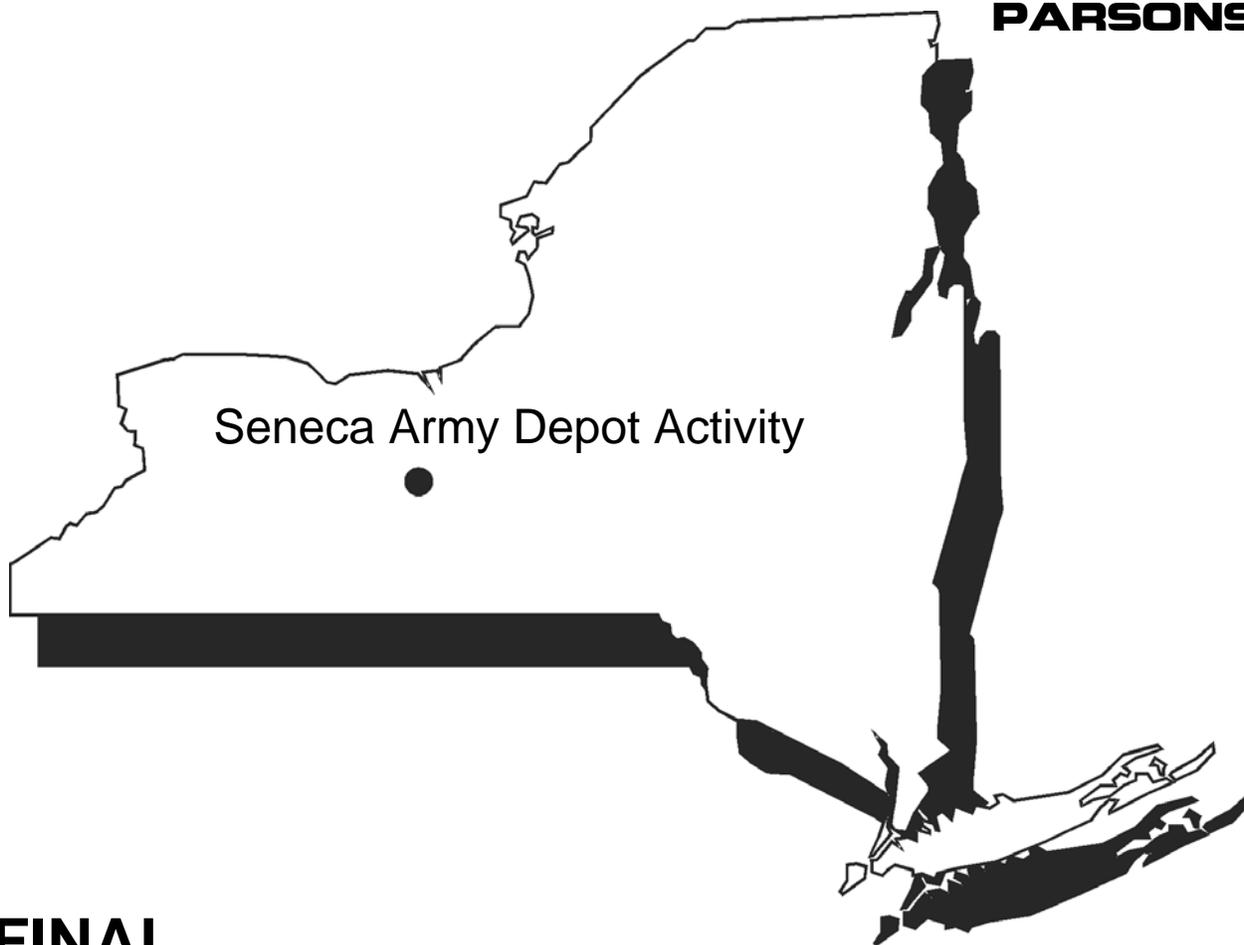


US Army, Engineering & Support Center
Huntsville, AL

Seneca Army Depot Activity
Romulus, NY



PARSONS



FINAL
RECORD OF DECISION (ROD)
NO FURTHER ACTION SWMUs (SEAD-50/54)
SENECA ARMY DEPOT ACTIVITY

EPA Site ID# NY0213820830
NY Site ID# 8-50-006
CONTRACT NO. DACA87-02-D-0005
DELIVERY ORDER NO. 0022

September 2005

**FINAL
RECORD OF DECISION
FOR
NO FURTHER ACTION FOR SWMUs SEAD 50/54
SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK**

Prepared for:

**SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK**

and

**UNITED STATES ARMY CORPS OF ENGINEERS
4820 UNIVERSITY SQUARE
HUNTSVILLE, ALABAMA**

Prepared By:

**PARSONS
150 Federal Street, 4th Floor
Boston, Massachusetts 02110**

**CERCLIS Site ID No.: NY0213820830
NY State Site ID No.: 8-50-006
Contract Number: DACA87-02-D-0005
Delivery Order 0022**

September 2005

PARSONS

150 Federal Street • Boston, Massachusetts 02110 • (617) 946-9400 • Fax: (617) 946-9777 • www.parsons.com

October 13, 2005

Mr. Scott Bradley
U.S. Army Corps of Engineers
Engineering and Support Center, Huntsville
Attn: CEHNC-FS-IS
4820 University Square
Huntsville, AL 35816-1822

SUBJECT: Seneca Army Depot Activity – Signed Final Record of Decision (ROD) for No Further Action SWMUs (SEAD-50/54), Seneca Army Depot Activity; Contract DACA87-02-D-0005, Delivery Order 0022

Dear Mr. Bradley:

Parsons is pleased to submit the signed Final Record of Decision (ROD) for No Further Action SWMUs (SEAD-50/54) at the Seneca Army Depot Activity (SEDA) located in Romulus, New York.

This work was performed in accordance with the Scope of Work (SOW) for Delivery Order 0022 of Parsons Contract DACA87-02-D-0005.

Parsons appreciates the opportunity to provide you with this Final ROD. Should you have any questions, please do not hesitate to call me at (617) 449-1405 to discuss them.

Sincerely,



Todd Heino, P.E.
Program Manager

Enclosure

cc: S. Absolom, SEDA
R. Battaglia, USACE

C. Boes, AEC
K. Hoddinott, USACHPPM



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October 13, 2005

Mr. Julio F. Vazquez, Project Manager
U.S. Environmental Protection Agency, Region II
Superfund Federal Facilities Section
290 Broadway, 18th Floor
New York, NY 10007-1866

Mr. Kuldeep K. Gupta, P.E.
NYSDEC
Division of Environmental Remediation
Remedial Bureau A, Section C
625 Broadway
Albany, NY 12233-7015

Ms. Charlotte Bethoney
Bureau of Environmental Exposure Investigation
Flanigan Square, Room 300
547 River Street
Troy, NY 12180

SUBJECT: Seneca Army Depot Activity – Signed Final Record of Decision (ROD) for No Further Action SWMUs (SEAD-50/54), Seneca Army Depot Activity; Contract DACA87-02-D-0005, Delivery Order 0022; EPA Site ID: NY0213820830 - NY Site ID: 8-50-006

Dear Mr. Vazquez/Mr. Gupta/Ms. Bethoney:

Parsons is pleased to submit the signed Final Record of Decision (ROD) for No Further Action SWMUs (SEAD-50/54) at the Seneca Army Depot Activity (SEDA) located in Romulus, New York.

Should you have any questions, please do not hesitate to call me at (617) 449-1405 to discuss them.

Sincerely,



Todd Heino, P.E.
Program Manager

Enclosure

cc: S. Absolom, SEDA
R. Battaglia, USACE
K. Hoddinott, USACHPPM

C. Boes, AEC
S. Bradley, USACE, Huntsville





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

SEP 28 2005

Thomas E. Lederle, Director
Base Realignment and Closure
Hampton Field Office
3A Bernard Road, Bldg. 105A
Fort Monroe, VA 23651-1048

Re: Record of Decision for SEAD-50 and SEAD-54 at the Seneca Army Depot Activity
Superfund Site, Romulus, New York

Dear Mr. Lederle:

This is to inform you that after review of the draft Record of Decision and other supporting documents, the U.S. Environmental Protection Agency (EPA) concurs with the selected remedy requiring No Further Action for SEAD-50 and SEAD-54 at the Seneca Army Depot Activity Superfund Site in Romulus, New York. Enclosed are two copies of the Record of Decision, which I have co-signed on behalf of EPA.

This Record of Decision addresses only the Areas of Concern SEAD-50 and SEAD-54 located within the Planned Industrial Development and Warehouse Areas. It should be noted that land within these areas, which includes land occupied by SEAD-50 and SEAD-54, is subject to institutional controls restricting residential development and use of the groundwater. As such, this larger land area is subject to five-year reviews.

If you have any questions regarding the subject of this letter, please contact me at (212) 637-4390 or have your staff call Julio Vazquez at (212) 637-4323.

Sincerely,

A handwritten signature in black ink, appearing to read "G. Pavlou".

George Pavlou, Director
Emergency and Remedial Response
Division

Enclosures

cc: Dale A. Desnoyers, Director
Division of Environmental Remediation
NYSDEC
Kuldeep Gupta, NYSDEC

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ACRONYMS AND ABBREVIATIONS

<u>Acronym</u>	<u>Definition</u>
AM/DD	Action Memorandum / Decision Document
AOC	Area of Concern
Army	U.S. Department of the Army
BCT	Base Cleanup Team
BRAC	Base Realignment and Closure
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
cy	Cubic yard
Depot	Seneca Army Depot Activity or SEDA
DLA	Defense Logistics Agency
DoD	Department of Defense
EPA	U.S. Environmental Protection Agency
ESI	Expanded Site Investigation
et seq.	and the following one
FFA	Federal Facility Agreement
LRA	Local Redevelopment Authority
mg/Kg	milligrams per kilogram
MSL	Mean Sea Level
NCP	National Oil and Hazardous Substances Pollution Contingency Plan or National Contingency Plan
NERL	National Exposure Research Laboratory
NFA	No Further Action
NPL	National Priorities List
NYS	New York State
NYCRR	Codes, Rules and Regulations of the State of New York
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health

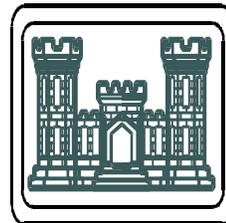
ACRONYMS AND ABBREVIATIONS
(Continued)

<u>Acronym</u>	<u>Definition</u>
PAH(s)	Polycyclic Aromatic Hydrocarbon(s)
PCB	Polychlorinated Biphenyl
ppm	part(s) per million
RA	Remedial Action
RAB	Restoration Advisory Board
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act
SCIDA	Seneca County Industrial Development Agency
SEAD	Former acronym for the Seneca Army Depot used to designate SWMU numbers
SEDA	Seneca Army Depot Activity
SVOC	Semivolatile Organic Compound
SWMU(s)	Solid Waste Management Unit(s)
TAGM	Technical and Administrative Guidance Memorandum
TAL	Target Analyte List
TCL	Target Compound List
TCRA	Time-Critical Removal Action
TPH	Total Petroleum Hydrocarbon
TRC	Technical Review Committee
TSDf	Treatment, Storage, and Disposal Facility
USC	United States Code
USA	United States of America
VOC	Volatile Organic Compound

RECORD OF DECISION



NO FURTHER ACTION SWMUs SEAD-50/54
SENECA ARMY DEPOT ACTIVITY (SEDA)
ROMULUS, NEW YORK



1.0 DECLARATION OF THE RECORD OF DECISION

Site Name and Location

Seneca Army Depot Activity

CERCLIS ID# NY0213820830

NY State ID# 8-50-006

Romulus, Seneca County, New York

No Further Action (NFA) Sites:

SEAD-50, Tank (silo) Farm

SEAD-54, Location of Asbestos-Containing Tank (silo)

Statement of Basis and Purpose

This Record of Decision (ROD) presents the U.S. Department of the Army's (Army's) and the U.S. Environmental Protection Agency's (EPA's) selected remedy of No Further Action for two Solid Waste Management Units (SWMUs) SEADs 50 and 54 (henceforth SEAD-50/54) located at the Seneca Army Depot Activity (SEDA) near Romulus, Seneca County, New York (**Figure 1-1**). The decision was developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended by Superfund Amendments and Reauthorization Act (SARA), 42 United States Code (USC) §9601 et seq. and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), Title 40 Code of Federal Regulations (CFR) Part 300. The SEDA Base Realignment and Closure (BRAC) Environmental Coordinator, the Director of the National Capital Region Office, U.S. Army Installation Support Management Agency; and the Director of the Emergency and Remedial Response Division, U.S. Environmental Protection Agency (EPA) Region II have been delegated the authority to approve this ROD. The New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH) have been consulted on the planned remedy in accordance with CERCLA 121(f), 42 USC §9621 (f), and concur with the selected remedy.

This ROD is based on the Administrative Record that has been developed in accordance with Section 113(k) of CERCLA. The Administrative Record is available for public review at the Seneca Army Depot Activity, Building 123, Romulus, NY. The Administrative Record Index identifies each of the items considered during the selection of the remedial action. This index is included in **Appendix A**.

The State of New York, through the NYSDEC, has concurred with the selected remedy. The NYSDEC Declaration of Concurrence is provided in **Appendix B** of this ROD.

Description of the Selected Remedy

Based on the findings of the investigations and activities completed for the sites, the Army has selected No Further Action as the remedy for two SWMUs, SEAD-50/54. These selections are based on the Army's proposal that these sites do not pose a significant threat to human health or the environment.

It should be noted that land within the Planned Industrial/Office Development (PID) area and Warehousing area, which includes land occupied by SEAD-50/54, is the subject of a separate Proposed Plan and Final ROD ["Final ROD for Sites Requiring Institutional Controls in the Planned Industrial/Office Development or Warehousing Areas" (Parsons, 2004)] in which institutional controls (ICs), including an area-wide groundwater use and a residential activity use restriction, have been implemented.

Statutory Determination

The Army and EPA have selected No Further Action as the remedy for SEAD-50/54.

Authorizing Signatures and USEPA and NYSDEC Acceptance of Remedy

This Declaration also serves as the formal authorizing signature page for the No Further Action SWMUs SEAD-50/54 ROD. Pursuant to the *Federal Facility Agreement for the Seneca Army Depot* (FFA), the ROD shall be adopted by the Army, EPA, and NYSDEC if all parties agree to the contents of the ROD. In the event that mutual agreement cannot be reached on the ROD, the Federal Facility Agreement (FFA) designates the responsibility for the selection of the final remedial action to the EPA Administrator, and further specifies that the EPA shall then prepare the final ROD. The selection of any remedial action by the EPA Administrator shall be final and not subject to dispute by the Army.

DECLARATION OF THE RECORD OF DECISION

The selected remedy ("No Further Action") is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. The remedy uses permanent solutions. Insofar as contamination does not remain at the SWMUs at concentrations above levels that provide for unrestricted use and unlimited exposure, institutional controls and 5-year reviews are not necessary.

The foregoing represents the selection of a remedial action by the U.S. Department of the Army and the U.S. Environmental Protection Agency, with the concurrence of the New York State Department of Environmental Conservation.

Concur and recommend for immediate implementation:



STEPHEN M. ABSOLOM
BRAC Environmental Coordinator
Seneca Army Depot Activity

30 Jan 05
Date

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DECLARATION OF THE RECORD OF DECISION

The selected remedy ("No Further Action") is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. The remedy uses permanent solutions. Insofar as contamination does not remain at the SWMUs at concentrations above levels that provide for unrestricted use and unlimited exposure, institutional controls and 5-year reviews are not necessary.

The foregoing represents the selection of a remedial action by the U.S. Department of the Army and the U.S. Environmental Protection Agency, with the concurrence of the New York State Department of Environmental Conservation.

Concur and recommend for immediate implementation:



THOMAS E. LEDERIE

Director, Base Realignment and Closure, Hampton Field Office
U.S. Army Installation Support
Management Agency

3 Aug 2005
Date

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The foregoing represents the selection of a remedial action by the U.S. Department of the Army and the U.S. Environmental Protection Agency, with the concurrence of the New York State Department of Environmental Conservation.

Concur and recommend for immediate implementation:



GEORGE PAVLOU
Director, Emergency and Remedial Response Division
U.S. Environmental Protection Agency, Region II

Date 9/28/05

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The New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH) forwarded to the U.S. Environmental Protection Agency a letter of concurrence regarding the selection of a remedial action in the future. This letter of concurrence is attached in **Appendix B**.

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2.0 SITE NAME, LOCATION AND DESCRIPTION

The Seneca Army Depot Activity (SEDA or the Depot) previously occupied approximately 10,600 acres of land that is located near the Village of Romulus in Seneca County, New York. The military facility was owned by the U.S. Government and operated by the Army between 1941 and approximately 2000, when the SEDA military mission ceased.

SEDA is located in an uplands area, which forms a divide separating two of the New York Finger Lakes, Cayuga Lake on the east and Seneca Lake on the west. The elevation of the facility is approximately 600 feet above Mean Sea Level (MSL).

SEAD-50/54 encompasses land where the Depot's historic Tank Farm was located. The Tank Farm was located in the southeastern portion of the SEDA in an area where the future land use is designated as Warehousing. The Tank Farm was sited in a triangular-shaped tract of land encompassing approximately 22 acres, immediately west of East Patrol Road between Building 350 and Buildings 356 and 357 (**Figure 2-1**). At one time, approximately 160 aboveground storage tanks (silos) were located at the Tank Farm site, but all tanks have since been removed from the site. According to SEDA personnel, the tanks were always used to store dry materials such as antimony, rutile ore, and other ores and minerals which were part of the country's strategic material stockpiles.

SEAD-54, which was assigned to historic Tank #88, is listed as a separate SWMU under the Depot's prior submissions because it previously contained asbestos material.

3.0 SITE HISTORY AND ENFORCEMENT ACTIVITIES

On July 14, 1989, the EPA proposed SEDA for inclusion on the National Priorities List (NPL). Supporting its recommendation for listing, the EPA stated “the Army identified a number of potentially contaminated areas, including an unlined 13-acre landfill in the west-central portion of the depot, where solid waste and incinerator ash were disposed of intermittently for 30 years during 1941-79; two incinerator pits adjacent to the landfill, where refuse was burned at least once a week during 1941-74; a 90-acre open burning/detonation area in the northwest portion of the depot, where explosives and related wastes have been burned and detonated during the past 30 years; and the APE-1236 Deactivation Furnace in the east-central portion of the depot, where small arms are destroyed.” The EPA recommendation was approved and finalized on August 30, 1990, when SEDA was listed in Group 14 of the Federal Facilities portion of the NPL.

Once SEDA was listed on the NPL, the Army, USEPA, and NYSDEC identified 57 solid waste management units (SWMUs) where historic data or information suggested, or evidence existed to support, that hazardous substances have been handled and may have possibly been released and migrated into the environment. Each of these AOCs was identified in the “Federal Facilities Agreement” (i.e., FFA, USEPA, NYSDEC, Army, 1993) signed by the three parties in 1993. This list was subsequently expanded to include 72 sites when the Army completed the “SWMU Classification Report, *Final*” (Parsons, 1994), which was required under the terms of the FFA. The SEDA was a generator and Treatment, Storage and Disposal Facility (TSDF) and thus subject to regulation under the Resource Conservation and Recovery Act (RCRA). Under this permit system, corrective action is required at all SWMUs.

Remedial goals for CERCLA and RCRA are equivalent; thus when the 72 SWMUs were classified in the “SWMU Classification Report, *Final*” (Parsons, 1994), the Army recommended that they be listed either as No Action sites or Areas of Concern (AOCs). SWMUs listed as AOCs in the “SWMU Classification Report, *Final*” (Parsons, 1994) were then scheduled for further investigations based upon data and potential risks to the environment.

In 1995, the SEDA was designated for closure under the Department of Defense’s (DoD’s) Base Realignment and Closure (BRAC) process. With SEDA’s inclusion on the BRAC list, the Army’s emphasis expanded from expediting necessary investigations and remedial actions at prioritized sites to include the release of non-affected portions of the Depot to the surrounding community for their reuse for non-military purposes (i.e., industrial, municipal, and residential).

Since the inclusion of the SEDA in the BRAC program, approximately 8,000 acres have been released to the community. An additional 250 acres of land have undergone a federal-to-federal transfer for use by the U.S. Coast Guard.

When the “SWMU Classification Report, *Final*” (Parsons, 1994) was issued, SEAD-50 was identified as a Moderately Low Priority AOC, and SEAD-54 was listed as a Low Priority AOC. An expanded site investigation (ESI), including geophysical surveys (seismic refraction survey), installation and sampling of three groundwater wells; and the collection and analysis of 15 surface soil, three sediment, three surface water and three groundwater samples was performed in the area of the Tank Farm in 1993. The collected samples were analyzed for Target Compound List (TCL) volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides/polychlorinated biphenyls (Pest/PCBs), Target Analyte List (TAL) metals and cyanide according to the NYSDEC Contract Laboratory Program Statement of Work. In addition, all of the surface soil samples were analyzed for bulk asbestos by polarized light microscopy. The results of the ESI were reported in “Expanded Site Inspection, 8 Moderately Low Priority AOCs, SWMUs 5, 9, 123 (A and B), (43, 56, and 69), 44 (A and B), 50, 58 and 59, *Draft Final*” (Parsons, December 1995).

The results of the ESI indicated that elevated levels of contaminants were present at the AOC; additional information describing the contaminants identified is presented in Section 6 of this ROD and in the report identified immediately above. Based on the results of the ESI, the Army decided that it would perform a removal action at the site to reduce or eliminate any potential threat to human health and the environment in the vicinity of SEAD-50/54 due to the presence of identified elevated concentrations of compounds in the soil at the site. The Army’s decision was documented in the “Final Action Memorandum and Decision Document, Time-Critical Removal Actions, Four Metal Sites (SEADs 24, 50/54, & 67)” (Parsons, 2002). The TCRA proposed for SEAD-50/54 was performed by Weston Solutions Inc. on behalf of the Army in late 2002 and early 2003.

A final copy of the SEAD-50/54 Completion Report was submitted by the Army and Weston to the EPA and NYSDEC in 2003. This document was titled “Final Completion Report, SEAD-50/54” (Weston Solution, Inc., 2003), and provided a description of TCRA activities and confirmatory sampling results obtained for SEAD-50/54. The Completion Report presents data that supports the Army’s claims that SEAD-50/54 no longer “poses a threat to the public health, welfare, or the environment.”

The Army has prepared this Record of Decision for the two “No Further Action” SWMUs as the final step in the CERCLA process required for these sites. Since the listing of SEDA on the NPL in 1990, the Army has worked to develop and prepare the information and data that are needed to support determinations of what remedial actions are needed at each of the identified SWMUs and AOCs to ensure that site conditions are protective of human health and the environment, the selected remedy complies with State and Federal requirements that are legally applicable or relevant and appropriate to the extent practicable, and is cost effective. Data and information developed and evaluated by the Army for these sites are summarized in this Record of Decision and are discussed in detail in the Completion Report submitted for SEDA per requirements of the FFA (Section 10.6) listed in the Administrative Record provided as **Appendix A**. This Record of Decision is submitted to fulfill the requirements of the Section 10.8 of the FFA for the Seneca Army Depot Activity.

4.0 COMMUNITY PARTICIPATION

The Army, the EPA, and the NYSDEC rely on public input to ensure that the concerns of the community are considered in selecting an effective remedy for each Superfund site. The public comment period for the SWMUs SEAD-50/54 was held from December 15, 2003 through January 13, 2004 to provide an opportunity for public participation in the remedy selection process for these sites. A public meeting was held on December 16, 2003 at the Seneca County Office Building in Waterloo, NY beginning at 7 pm.

At the public meeting, the results of the investigations and the remedial action (RA) at the sites were presented along with a summary of the preferred remedy. At the presentation, a question-and-answer period was held, during which the public had the opportunity to ask questions or submit written comments during the comment period on the site investigation and preferred remedy.

Information and data summarized within this ROD for SEAD-50/54 is presented and described in greater detail within the Final "Completion Report for SEAD-50/54" (Weston Solutions Inc., 2003), and the Final "Action Memorandum and Decision Document, Time-Critical Removal Actions, Four Metal Sites (SEADs 24, 50/54, & 67" Report (Parsons, 2002)). To better understand the sites and the investigations and studies that have been conducted at the sites, the public was encouraged to review the project documents at the Seneca Army Depot Activity during the public comment period. The building location to view the documents was given during the public meeting. Written comments could be submitted to the SEDA BRAC Environmental Coordinator (address given during public meeting) at any time during the public comment period.

No substantive public comments warranting a formal response were received. Comments on the Draft and Draft Final ROD were provided to the Army by NYSDEC and EPA and changes required to address these comments have been incorporated in this final document.

5.0 SCOPE AND ROLE

The Army has selected No Further Action as the remedy for the SWMUs SEAD-50/54 addressed in this ROD. The selected remedy at the sites is based on the Army's and EPA's determination that no residual hazardous substances remains that poses a significant threat to human health or the environment at these SWMUs.

6.0 SITE CHARACTERISTICS

SEAD-50/54 is located at the Depot's Tank Farm, which is in the southeastern portion of the SEDA in an area where the designated future land use is designated as Warehousing. SEAD-50 is the "SWMU Classification Report, Final" (Parsons 1994) designation used for the overall Tank Farm, while SEAD-54 was the designation used for Tank #88 which was used to store asbestos material. The Tank Farm was sited in a triangular-shaped tract of land encompassing approximately 22 acres, immediately west of East Patrol Road between Building 350 and Buildings 356 and 357 (**Figure 2-1**). At one time, approximately 160 aboveground storage tanks (silos) were located at the Tank Farm site, but all tanks have since been removed from the site. According to SEDA personnel, the tanks were always used to store dry materials such as antimony, rutile ore, and other ores and minerals.

The topography of SEAD-50/54 is relatively flat, with a total relief of 2 to 3 feet. An east-west running access road bisects the site and connects Avenue H with the East Patrol Road. Drainage ditches run along both sides of the access road, and water captured in these ditches flows east towards intersecting ditches bordering the East Patrol Road. North of the access road, the vegetation is generally overgrown across the site except in spots where the circular footprints of former tanks are located. The circular footprints of the former tanks are generally clear of vegetation and covered with gravel. The former asbestos storage tank (Tank #88) was located immediately north of the access road on the east side of the Tank Farm and situated between excavation areas 1, 2, and 6 (**Figure 6-1**). The area south of the access road is flat and grassy. A ferro-chromate ore pile is located in the southern area of the historic Tank Farm at the border of the grassy area. There are no mapped wetlands located within the bounds of the former Tank Farm.

Expanded Site Investigation (ESI)

An Expanded Site Investigation (ESI) was performed at the Tank Farm area in 1993 to determine whether a release of hazardous constituents had occurred (Parsons, 1995). The ESI included a geophysical survey, drilling and installation of three groundwater monitoring wells, and the collection of soil, sediment, surface water and groundwater samples for subsequent chemical analyses. The geophysical survey conducted included a seismic refraction survey that was initially used to estimate the direction of groundwater flow, which was determined to flow approximately west to east.

All soil, sediment, groundwater, and surface water samples were submitted to the laboratory for chemical analysis. Collected samples were analyzed for Target Compound List (TCL) volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides/polychlorinated biphenyls (PCBs), and Target Analyte List (TAL) metals and cyanide according to the NYSDEC Contract Laboratory Program Statement of Work. In addition, all of the surface soil samples were analyzed for bulk asbestos by polarized light microscopy.

Fifteen surface soil samples were collected at random locations within the Tank Farm to assess potential releases from the tanks. Seven samples were collected from the 0-2 inch depth horizon, while the remaining eight samples were collected from the 0-12 inch depth horizon.

Three groundwater monitoring wells were installed in the till/weathered shale aquifer that exists in the area of the Tank Farm. One monitoring well was installed upgradient (west) of SEAD-50/54 and was used to obtain background water quality data, while the other two wells were installed downgradient (east) of the Tank Farm, between East Patrol Road and the Depot's perimeter fence, to determine if hazardous constituents from the site were impacting the groundwater. Three samples, one sample from each well, were collected and submitted to the laboratory for chemical analysis.

Three surface water and three collocated sediment (shallow soil) samples were collected from drainage culverts that run adjacent to roadway surfaces in the vicinity of the Tank Farm. One surface water and shallow soil sample pair was collected from a drainage ditch that runs parallel to the unnamed road that bisects the Tank Farm, while the remaining two surface water and shallow soil/sediment sample pairs were collected from a downgradient drainage ditch that runs between the East Patrol Road and Route 96. The drainage ditches that surround SEAD-50/54 are temporal, typically holding water only as a result of a storm or snowmelt event. As such, the "sediment" lining the base of the drainage ditches is considered to be, and was evaluated as, soil by the Army. The excavation locations of all sampling points are shown in **Figure 6-1**. A summary of the ESI results is presented below. For complete results, refer to the "Expanded Site Inspection, 8 Moderately Low Priority AOCs, SWMUs 5, 9, 123 (A and B), (43, 56, and 69), 44 (A and B), 50, 58 and 59, *Draft Final*" (Parsons, December 1995) or the "Final Action Memorandum and Decision Document (AM/DD), Time-Critical Removal Action, Four Metal Sites (SEADs 24, 50/54, & 67" Report (Parsons, 2002), which are available in the Administrative Record.

Soil sampling results are presented in **Tables 6-1** and **6-2**. Of 56 TCL/TAL analytes detected in one or more of the soil samples collected, one was a VOC, 20 were SVOCs, 13 were pesticides or PCBs, and the remaining 22 were metals. Asbestos was detected in one of the 15 soil samples, at location SS50-1, which is located in excavation Area 5.

Eight metals (antimony, arsenic, chromium, copper, lead, magnesium, mercury, and zinc) were found in soil samples at concentrations that exceeded their respective NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 recommended clean-up objective levels. Although lead was found at concentrations that exceeded NYSDEC's recommended level (24.8 mg/Kg based on site background) in 13 of the 15 surface soil samples characterized, it was not found at a concentration that exceeds the EPA's recommended soil cleanup level for residential properties (400 mg/Kg).

The maximum concentrations measured within SEAD-50/54 for chromium, lead, mercury, and zinc were found at sample location SS50-5, Area 1. Arsenic concentrations exceeded its TAGM value in three of the 15 surface soil samples collected; the maximum concentration detected was 151 mg/Kg at location

SS50-6, in excavation Area 1. Other concentrations measured for metals that exceeded TAGMs were generally evenly distributed amongst the soil sampling locations, and, typically, measured concentrations did not significantly exceed their respective cleanup levels.

Results for asbestos in soil are provided in **Table 6-2** at the end of this document. The surface soil sample collected from Area 5 contained 10 to 15 percent chrysotile asbestos. Area 5 is approximately 400 ft. south-east of Tank #88, which once stored dry asbestos (amosite). However, asbestos was not found in any of the other surface soil samples collected from the area of SEAD-50/54 or in subsequent confirmatory soil samples from Area 5 or SEAD-50/54.

Concentrations measured for seven SVOCs (including six PAHs and phenol) exceeded their respective NYSDEC cleanup objective levels in soils. A majority of the PAH concentrations identified above cleanup objective levels were found in the three samples collected from locations SS50-11 (Area 4), SS50-14 (Area 2), and SS50-15 (Area 3). Each of these sampling locations is in the northern part of the historic Tank Farm, north of the unnamed road that bisects the area.

Generally, available chemical analysis data indicate that groundwater at SEAD-50/54 has not been significantly impacted by the historic storage activities that were performed in this area. A summary of the groundwater sampling program is presented in **Table 6-3** at the end of this document. One SVOC and 18 metals were detected in one or more of the three groundwater samples collected. Concentrations measured for five of the metals (aluminum, iron, manganese, sodium and thallium) exceeded their respective GA groundwater criteria levels. In three out of five cases (not including sodium and thallium), the highest concentration measured for these metals were found in the upgradient well. Additionally, none of these five metals were found at concentrations exceeding NYSDEC recommended cleanup level objectives for soil at the Tank Farm. Thus, it is presumed that the presence of these metals in the groundwater results from other sources or activities unrelated to the historic Tank Farm operations.

Chemical analysis results indicate that surface water at the site has not been significantly impacted by the historic storage activities that were conducted at SEAD-50/54. A summary of the ESI surface water sampling program is presented in **Table 6-4** at the end of this document. Fifteen metals were detected in the surface water samples collected, and two of these metals (aluminum and iron) were found at a concentration that exceeded their NYS Class C surface water criteria at a single location, SW50-1.

The available chemical analysis data suggest that several targeted chemicals have impacted the surface soil in drainage ditches at SEAD-50/54. A summary of the results from samples collected in drainage ditches that abut the Tank Farm are presented in **Table 6-5**. Forty-four TCL/TAL analytes, including one VOC, 17 SVOCs, six pesticides and PCBs, and 20 metals were detected in samples collected. Of the compounds detected, 11 were detected at concentrations that exceeded their respective TAGM cleanup objective values. The 11 compounds found to exceed their respective TAGMs included 6 SVOCs and 5 metals.

The five metals (arsenic, lead, manganese, potassium and zinc) were detected at sampling location, SW50-1/SD50-1, closest to the former location of Tank #88 (SEAD-54). Arsenic, lead, manganese, and zinc were found due north of Tank #88 in the ditch adjacent to East Patrol Road. However, sample location SW50-3/SD50-3, which is at the furthest downstream location and within the same ditch network as SW50-1/SD50-1, showed metal concentrations well below the TAGM levels. SVOCs were found at concentrations exceeding their respective TAGM values in ditch soils located at SW50-1/SD50-1 (Area 6) and SW50-2/SD50-2 (Area 7).

Time Critical Removal Action (TCRA)

The results of the ESI suggested that metal contaminants (namely arsenic, mercury, and zinc) were present at levels that potentially represented a threat to the environment and surrounding populations. Additionally, localized areas of elevated PAH concentrations were also identified in several of the areas where the primary metal contaminants were found. In order to alleviate or eliminate the potential threat posed by these chemicals, the Army recommended that a Time-Critical Removal Action (TCRA) be implemented. Details of the Army's proposed removal were presented in the "Final Action Memorandum and Decision Document, Time-Critical Removal Actions, Four Metal Sites (SEADs 24, 50/54, & 67)" (Parsons, 2002).

The TCRA was performed from late November 2002 through late February 2003, and consisted of the excavation of soil from seven areas where high metal concentrations (specifically arsenic, mercury, and zinc) had previously been found. The seven excavation areas within SEAD 50/54 are shown in **Figure 6-1**. Final decisions pertinent to the completion of the excavation at each site were to be based on the results of confirmational sampling and analyses that were performed at each of the targeted areas.

Prior to the excavation of any soil from Area 5, asbestos and pre-characterization bulk soil samples were collected and analyzed at each planned grid cell location within the excavation area to verify if any asbestos containing material (ACM) was present. This work was included within the overall scope of the TCRA in response to the prior finding of ACM at sample location SS50-1 during the ESI. However, the results of sampling and analyses completed during the TCRA by Weston Solutions did not show that ACM was present at the site. Nonetheless, Weston Solutions prepared ACM notifications and submitted forms to the State of New York and to the EPA on November 13, 2002 to perform a removal action in the area of SS50-1. The New York Department of Labor Asbestos Control Bureau approved the ACM work in a letter dated November 26, 2002. A term of the approval letter was that work was not to begin earlier than November 27, 2002.

Soil excavation was performed at grid cell (quadrant) FX-015 within Area 5, which is the area within which the ESI sample (i.e., SS50-1) found to contain asbestos was located, on December 4, 2002. The asbestos removal effort was conducted in compliance with: EPA 340/1-90/019 Asbestos/National

Emission Standards for Hazardous Air Pollutants (NESHAP) Adequately Wet Guidelines (December 1990); EPA 340/1-90-018 Asbestos/NESHAP Regulated ACM Guidance (1990); State of New York Department of Labor Industrial Code Rule No. 56; title 9 Code of Federal Regulations (CFR) 1910.1001 General Industry; Title 29 CFR 1926.1101 Asbestos Standard for the Construction Industry; title 29 CFR 1910.134 Respiratory Protection and, US Army Corps of Engineers (USACE) Safety and Health Requirements Manual, EM 385-1-1. During this portion of the excavation work, real-time air monitoring was performed for asbestos and the work was completed by personnel suited in Level C PPE. Soil excavated from this grid cell [approximately 17 cubic yards (cy)] was live-loaded into double-lined dump trucks and was transported off-site for disposal as ACM at Seneca Meadows Landfill. Post-excavation confirmatory sampling was conducted by Sci Labs, Inc. using polarized light microscopy (PLM) and indicated negative results for ACM at a depth of 6 inches; therefore, additional soil removal for ACM was not required.

At the other areas, excavations were advanced to a depth of six inches below grade using an excavator with a 4-ft. wide grading bucket. Under this approach, approximately 5150 cy of soil were excavated from the sites. Once all excavations reached the planned depth (e.g., 6 inches) confirmational sampling was performed. Under the proposed TCRA excavation plan, digging at an excavation area could be halted if all confirmational sample results showed that target analyte (i.e., arsenic, mercury, and zinc) concentrations were less than or equal to cleanup objectives (TAGMs); alternatively, digging continued within specific grid blocks if confirmational sampling results indicated target analyte levels above the cleanup goals. If the results of a floor confirmational sample failed to meet the cleanup criteria, then the excavation continued to a greater depth, typically in 6 to 12 inch steps, while the bounds of the grid were extended outwardly if a perimeter sample did not achieve the cleanup criteria. Based on this process, the majority of the grid cells or quadrants advanced at SEADs-50/54 were excavated to a final depth of 6 inches; 5 grid cells were excavated to a final depth of 9 inches; 46 quadrants were excavated to a final depth of 12 inches; 1 grid cell was excavated to a final depth of 15 inches; 20 grid cells were excavated to a depth of 18 inches; and 7 quadrants were excavated to a final depth of 2 feet or greater below grade before reaching satisfactory confirmatory soil sample results (2 quadrants in Area 1; 1 quadrant in Area 3; 1 quadrant in Area 4; and 3 quadrants in Area 6). The deepest excavation performed in any of the areas was located at quadrant FX-023 in Area 4 where the final excavation extended 6 feet below grade. Excavations extending below 6 inches resulted in the excavation of an additional 1,880 cy of soil being removed (total excavated 7,030 cy).

Confirmatory soil samples were collected from the bottom and either the perimeter or sidewall of the each grid cell or quadrant within the overall area of excavation. Initially, most excavation areas were subdivided into 30 foot by 30 foot grids, and confirmatory samples from the excavation floor or bottom were collected as five-point composites from each 900 square foot area (or fraction thereof). At Area 7 (drainage ditch), each grid cell was approximately 10 feet wide by 90 feet long. Each part of the five-point floor composite sample was collected from a depth of 2 to 6 inches below the base of the excavation.

Perimeter samples were collected beyond the bounds of each excavation advanced to a depth of either 6 or 12 inches. Perimeter confirmational samples were collected as discrete grab samples at bound locations of each grid (one per every 30 feet or less). Each perimeter sample was collected at a point 1 foot beyond the bounds of the excavation. At excavations advanced to depths of greater than 12 inches, sidewall samples were collected at grid marker positions at locations roughly halfway down the face of the excavation wall.

Based on the preliminary plan for the TCRA, the Army anticipated that a total of 423 (262 floor and 161 perimeter/sidewall) samples would be collected and analyzed as part of the TCRA. However, due to the need to expand the vertical and horizontal extent of several of the excavations, a final total of 607 confirmational samples (402 floor and 205 perimeter/sidewall) were collected and submitted for analysis. The distribution of confirmatory samples (floor and perimeter) over the surface area for each of the 7 areas were: Area 1 [110,260 square feet (ft²), 229 floor, 57 perimeter]; Area 2 (10,670 ft², 16 floor, 18 perimeter); Area 3 (10,220 ft², 16 floor, 16 perimeter); Area 4 (54,200 ft², 89 floor, 46 perimeter); Area 5 (23,250 ft², 26 floor, 23 perimeter); Area 6 (3,510 ft², 16 floor, 43 perimeter); and, Area 7 (9,150 ft², 10 floor, 2 perimeter).

The majority (approximately 80 percent) of all confirmatory samples collected were analyzed for the three target analytes, arsenic, mercury, and zinc using EPA Method SW-846/6010B. The remainder of the confirmatory samples (approximately 20 percent) were analyzed for 26 TAL metals via the same method. Additionally, approximately 20 percent of the collected soil samples were also analyzed to quantify 17 TCL PAHs concentrations.

A summary of the final confirmational soil sample results is presented in **Table 6-6** for metals and the 17 PAH compounds characterized during the TCRA. Generally these data indicate that the TCRA was effective in alleviating the potential threat posed by these contaminants at the site as a result of the action. The TCRA data indicate that the majority of the remaining PAHs concentrations present at the site are reduced to levels below TAGM cleanup objectives. Exceptions to this general rule are noted for dibenz(a,h)anthracene, benzo(a)anthracene, and benzo(a)pyrene, which still exhibit sporadic detections that exceed NYSDEC's TAGM cleanup objectives. However, even for these three PAHs, the maximum concentrations found are reduced by a factor of 10 to 20 from what was observed in the data collected during the ESI. The maximum concentrations detected in confirmatory sampling for these three compounds, respectively, were 35, 290, and 320 µg/Kg (versus 840, 5200, and 3700 µg/Kg in the ESI). Total concentration measured for total carcinogenic PAHs is considerably lower than the 10 mg/Kg (i.e., ppm) total threshold recommended for soil at SEAD-26.

Confirmational data also indicated that that the overall concentrations of metals found at SEAD-50/54 were decreased on a site-wide basis. A summary of the site-wide and individual excavation area averages are presented in **Table 6-7**. Based on the analysis of site-wide averages, only the average concentration

measured for thallium (i.e., 2.82 mg/Kg) was found to exceed its TAGM cleanup objective level. The average concentrations for all other metals detected in confirmational samples were less than the TAGM cleanup objectives. However, the confirmational data did indicate that isolated spots continued to exist where concentrations of metals, including the three primary metals drivers (arsenic, mercury, and zinc) were present at levels exceeding the TAGM cleanup goals.

Statistical Analysis of Confirmation Data

Based on the overall TCRA results for metals (i.e., generally the site-wide averages showed that the site's cleanup objective had been achieved), the Army requested a determination from the EPA and the NYSDEC regarding whether its effort under the TCRA was complete. In response to this request, a statistical analysis was performed on the confirmatory samples by the EPA National Exposure Research Laboratory (NERL) on the results obtained during the TCRA compared to the results of the SEDA-wide background soil dataset. NERL's stated objective of the analysis was to determine if contaminant concentrations found at SEAD-50/54 after the removal action were comparable to Depot background concentrations. The NERL used 2 statistical tests (95% UTLs and the 2 sample non-parametric Mann-Whitney test) to test the comparability of the SEAD-50/54 data with the Depot background dataset and concluded that "contaminant concentrations for arsenic, mercury, and zinc at the SEAD-50/54 Site (after final excavation) are not consistent with the background level contaminant concentrations."

At the subsequent request of the Army, Parsons conducted a review of the NERL's statistical analysis procedures and conclusions, and prepared a memo to SEDA, dated January 21, 2004, concluding that NERL's analysis was flawed, and, as a result, their conclusions were in error. In support of its findings, Parsons highlighted the Army's stated goal for the time-critical removal action at SEAD-50/54 which was presented in the "Action Memorandum and Decision Document, Time-Critical Removal Actions, Four Metals Sites (SEADs 24, 50/54, & 67), *Final*" (Parsons, August 2002) and was:

"The objectives of a removal action are to comply with ARARs and reduce the overall threat to human health and the environment to an acceptable level at the site. Therefore, to reduce the threat that appears to exist near the Tank Farm, the Army is proposing to conduct an action that focuses on the removal of soil that has been impacted by asbestos, arsenic, mercury, and polynuclear aromatic hydrocarbons at elevated concentrations. Specifically, the Army is proposing to address shallow soil contamination (i.e., soil in top 6 inches) that has been identified at five locations within the Tank Farm, as well as within two lengths of the drainage ditches that surround the Tank Farm."

Parsons argued that the work completed at SEAD-50/54 achieved these results. Specifically, with respect to the identified asbestos issue, the Army developed data as part of the removal action that indicated that the suspected localized detection of the Asbestos identified at SEAD-50/54 during earlier work was no longer present based on additional sampling and analysis completed as part of the overall time-critical removal action. These data were reported in the Completion Report that was submitted by Weston Solutions, Inc. in December 2003.

Furthermore, Parsons indicated that the potential threat resulting from potential exposure to arsenic and mercury at the Site had been greatly reduced. Initial concentration measured for arsenic in the shallow soils at the Site ranged upwards to 151 mg/Kg whereas the highest concentrations detected in the soil after the removal action was performed was 41.9 mg/Kg. Similarly, 20 percent of the samples collected and analyzed during the ESI exceeded the Depot-specific soil cleanup objective and the maximum concentration determined for arsenic (i.e., 21.5 mg/Kg) in background samples before the work was performed whereas after the removal of soil, fewer than 10 percent of all samples characterized for arsenic (425 total) contained concentrations that exceeded the Depot-specific cleanup objective and only 2 of 425 sample results exhibited concentrations above the maximum concentration found for arsenic in the background data set. Finally, after the removal action, the Site-wide average concentration of arsenic determined from the analysis of all 425 samples was 6.2 mg/Kg which compared very favorably with the Depot-wide background average concentration for arsenic of 5.2 mg/Kg, and is greatly reduced from the prior average Site concentration determined during the ESI which was 20.9 mg/Kg.

Similar reductions were observed for mercury, where only two out of 419 total samples had concentrations that exceeded the State's recommended soil clean up level of 0.1 mg/Kg or the Depot-wide maximum mercury concentration of 0.13 mg/Kg. The overall site average concentration determined for mercury after the removal action is 0.047 mg/Kg, which again compared favorably to the Depot-wide background average of 0.038 mg/Kg.

With reference to the PAH compounds identified, the sampling results provided in the Completion Report indicate that there was a large reduction (at least a factor of 10 fold) for each of the maximum concentrations of carcinogenic PAHs previously detected at the site, and that the total concentration measured for total carcinogenic PAHs was considerably lower than the 10 mg/Kg (i.e., ppm) total threshold recommended for soil at SEAD-26.

Finally, Parsons highlighted certain additional points about the statistical evaluation that was performed by NERL personnel. NERL indicated that it had conducted the analysis in accordance with procedures described in two guidance documents, identified as EPA (1989) which is entitled "Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities Interim Final Guidance" (EPA/530-SW-89-026) and the Addendum to Interim Final Guidance (EPA, 1992). Within the analysis report, EPA NERL stated:

"It is observed that arsenic dataset consists of an outlier, 21.5 ppm. The 95% UTL and the 95% UPL for arsenic have been computed with and without the outlier."

And additionally:

"For example, for arsenic, the 95% UTL=8.0 ppm (instead of the maximum value= 21.5 ppm which may represent an outlier) can be used as the background threshold value. An exceedance of 8.0 ppm by a site arsenic concentration from an area of concern may be considered as an indication of contamination possibly requiring further remediation action. It is noted that there are several site observations from the final excavation (from the final 6" lift) which exceed the 95%

UTLs as listed in Table 1 suggesting that possible contamination due to site activities may still exist at the SEAD50/54 Site.”

Thus, NERL said that they had removed one piece of data from the background data set to further substantiate their claim that the Depot-wide background and the Site-specific confirmational analyses were different. Parsons countered this analysis methodology and indicated that EPA’s own guidance, as stated in the 1992 reference, specifically warned against the removal of statistical outliers until a specific reason for the outlier could be determined. Parsons indicated that this had not been done, so the indicated data value, in accordance with EPA guidance, should be treated as a true, but extreme, value and a member of the Depot-wide data set.

Parsons also indicated that NERL had not indicated within its statistical analysis that even if all of the noted arsenic exceedances of recommended soil cleanup levels were removed from the Site-specific data set and replaced with values equivalent to either the Site-wide average value or a value that is just below the recommended soil cleanup level, the comparison of the data sets would still indicate that the Site-wide data set was not consistent with the Depot-wide background data set. Thus, in either situation, Site-wide data that was fully compliant with the stated soil cleanup level objective defined for the Site would still be statistically different from the background data set. Given this information, Parsons questioned whether any Site-wide data set from SEAD-50/54 could ever be judged statistically comparable to the Depot-wide data set.

Parsons concluded that the TCRA completed at SEAD-50/54 achieved the results set out and no further action was warranted for SEAD-50/54. The EPA and NYSDEC accepted the review of the statistical analysis performed, and concluded that the stated goals of the TCRA had been met (NYSDEC, 2003; EPA, 2004).

7.0 CURRENT AND POTENTIAL FUTURE SITE AND RESOURCE USES

In accordance with the requirements of the BRAC process, the Seneca County Board of Supervisors established the Seneca Army Depot Local Redevelopment Authority (LRA) in October 1995. The primary responsibility assigned to the LRA was to plan and oversee the redevelopment of the Depot. The Reuse Plan and Implementation Strategy for Seneca Army Depot was adopted by the LRA and approved by the Seneca County Board of Supervisors on October 22, 1996. Under this plan and subsequent amendment, areas within the Depot were classified according to their most likely future use. These areas currently include:

- housing;
- institutional;
- planned industrial office development;
- warehousing;
- conservation/recreational land;
- an area designated for a future prison;
- an area for an airfield, special events, institutional, and training; and
- an area to be transferred from one federal entity to another (i.e., an area for the existing navigational LORAN transmitter).

The future land use of SEAD-50/54 assigned by the LRA was initially identified as warehousing (**Figure 7-1**).

8.0 SUMMARY OF SITE RISKS

The Army has selected No Further Action as the remedy for the SEAD-50/54 addressed in this ROD. This determination is based on the Army's determination that these sites do not pose a significant threat to human health or the environment. This determination is based on the following findings and conclusions:

- All tanks have been removed.
- An ESI conducted in 1993 showed soil contamination, specifically metals.
- A TCRA was performed in response to the ESI results and recommendations, which included excavation of soils where high metal concentrations had previously been shown to exist; therefore, soils that may have posed a potential risk have been removed from the site.
- Post-excavation confirmatory samples indicate that the stated goals of the TCRA, which were to reduce the overall threat to human health and the environment to an acceptable level at the site, have been met and no further action is necessary.
- NYSDEC and EPA concurred that the goals of the TCRA were achieved.

9.0 SELECTED REMEDY

Based on the findings of the investigations completed for the sites, the Army and the EPA have selected No Further Action as the remedy for the SWMUs SEAD-50/54. This determination is based on the Army's determination that these sites do not pose a significant threat to human health or the environment.

**TABLE 6-1
SUMMARY OF SOIL ANALYSIS RESULTS - ESI**

**SENECA ARMY DEPOT ACTIVITY
REMOVAL ACTION**

COMPOUND	UNITS	MAXIMUM DETECT	FREQUENCY OF DETECTION	CRITERIA VALUE (a)	NUMBER ABOVE CRITERIA	NUMBER OF DETECTS	NUMBER OF SAMPLES
Volatile Organics							
Acetone	ug/Kg	83	7%	200	0	1	15
Semivolatile Organics							
4-Methylphenol	ug/Kg	310	20%	900	0	3	15
Acenaphthene	ug/Kg	930	13%	50000 (*)	0	2	15
Anthracene	ug/Kg	1500	20%	50000 (*)	0	3	15
Benzo(a)anthracene	ug/Kg	5200	40%	220	3	6	15
Benzo(a)pyrene	ug/Kg	3700	40%	61	5	6	15
Benzo(b)fluoranthene	ug/Kg	4400	40%	1100	1	6	15
Benzo(g,h,i)perylene	ug/Kg	1800	27%	50000 (*)	0	4	15
Benzo(k)fluoranthene	ug/Kg	4000	40%	1100	1	6	15
bis(2-Ethylhexyl)phthalate	ug/Kg	1800	100%	50000 (*)	0	15	15
Carbazole	ug/Kg	1100	20%	50000 (*)	0	3	15
Chrysene	ug/Kg	5500	40%	400	3	6	15
Dibenz(a,h)anthracene	ug/Kg	840	20%	14	3	3	15
Dibenzofuran	ug/Kg	260	7%	6200	0	1	15
Di-n-butylphthalate	ug/Kg	56	80%	8100	0	12	15
Fluoranthene	ug/Kg	14000	80%	50000 (*)	0	12	15
Fluorene	ug/Kg	590	13%	50000 (*)	0	2	15
Indeno(1,2,3-cd)pyrene	ug/Kg	1800	33%	3200	0	5	15
Phenanthrene	ug/Kg	7800	67%	50000 (*)	0	10	15
Phenol	ug/Kg	31	7%	30	1	1	15
Pyrene	ug/Kg	12000	73%	50000 (*)	0	11	15
Pesticides/PCB							
4,4'-DDD	ug/Kg	2.2	7%	2900	0	1	15
4,4'-DDE	ug/Kg	4.8	27%	2100	0	4	15
4,4'-DDT	ug/Kg	4.1	27%	2100	0	4	15
Aldrin	ug/Kg	1.3	7%	41	0	1	15
alpha-Chlordane	ug/Kg	3.8	7%	540	0	1	15
Aroclor-1242	ug/Kg	75	20%	1000(b)	0	3	15
Aroclor-1254	ug/Kg	75	13%	1000(b)	0	2	15
Aroclor-1260	ug/Kg	25	7%	1000(b)	0	1	15
Dieldrin	ug/Kg	59	13%	440	0	2	15
Endosulfan I	ug/Kg	13	7%	900	0	1	15
Endrin	ug/Kg	2.8	7%	100	0	1	15
Heptachlor	ug/Kg	1.3	7%	100	0	1	15
Heptachlor epoxide	ug/Kg	2.4	13%	20	0	2	15
Metals							
Aluminum	mg/Kg	15300	100%	19300	0	15	15
Antimony	mg/Kg	7.1	93%	5.9	1	14	15
Arsenic	mg/Kg	151	100%	8.2	3	15	15
Barium	mg/Kg	115	100%	300	0	15	15
Beryllium	mg/Kg	0.71	100%	1.1	0	15	15
Cadmium	mg/Kg	0.8	87%	2.3	0	13	15
Calcium	mg/Kg	120000	100%	121000	0	15	15
Chromium	mg/Kg	60.7	100%	29.6	5	15	15
Cobalt	mg/Kg	12.6	100%	30	0	15	15
Copper	mg/Kg	35.2	100%	33	1	15	15
Iron	mg/Kg	30000	100%	36500	0	15	15
Lead	mg/Kg	398	100%	24.8	13	15	15
Magnesium	mg/Kg	48300	100%	21500	1	15	15
Manganese	mg/Kg	722	87%	1060	0	13	15
Mercury	mg/Kg	0.37	100%	0.1	2	15	15
Nickel	mg/Kg	42.6	100%	498	0	15	15
Potassium	mg/Kg	2170	100%	2380	0	15	15
Selenium	mg/Kg	1.1	93%	2	0	14	15
Silver	mg/Kg	0.34	13%	0.75	0	2	15
Sodium	mg/Kg	136	80%	172	0	12	15
Vanadium	mg/Kg	26.2	100%	150	0	15	15
Zinc	mg/Kg	152	100%	110	3	15	15
Other Analyses							
Total Solids	%W/W	88	100%		0	15	15

NOTES:

- a) NYSDEC Technical and Administrative Guidance Memorandum (TAGM) #4046.
- b) The TAGM value for PCBs is 1000 ug/Kg for surface soils and 10,000 ug/Kg for subsurface soils.
- * = As per TAGM, total VOCs < 10 ppm; total Semi-VOCs < 500 ppm; individual semi-VOCs < 50 ppm.

**TABLE 6-2
SUMMARY SOIL SAMPLE ASBESTOS ANALYSIS RESULTS**

**SENECA ARMY DEPOT ACTIVITY
REMOVAL ACTION**

ES Sample ID	Asbestos (% Type)	Other Material
SS50-1	10-15 % Chrysotile	Binder, Quartz, 3-5 % Organic Fiber
SS50-2	Not Detected	Binder, Quartz, 15-25 % Organic Fiber
SS50-3	Not Detected	Binder, Quartz, 10-15 % Organic Fiber
SS50-4	Not Detected	Binder, Quartz, 1-3 % Organic Fiber
SS50-5	Not Detected	Binder, Quartz, 15-25 % Organic Fiber
SS50-6	Not Detected	Binder, Quartz, 15-25 % Organic Fiber
SS50-7	Not Detected	Binder, Quartz, 15-25 % Organic Fiber
SS50-8	Not Detected	Binder, Quartz, 5-10 % Organic Fiber
SS50-9	Not Detected	Binder, Quartz, 35-45 % Organic Fiber
SS50-10	Not Detected	Binder, Quartz, 10-15 % Organic Fiber
SS50-11	Not Detected	Binder, Quartz, 10-15 % Organic Fiber
SS50-12	Not Detected	Binder, Quartz, 5-10 % Organic Fiber
SS50-13	Not Detected	Binder, Quartz, 10-15 % Organic Fiber
SS50-14	Not Detected	Binder, Quartz, 1-3 % Organic Fiber
SS50-15	Not Detected	Binder, Quartz, 5-10 % Organic Fiber
SS50-16	Not Detected	Binder, Quartz, 3-5 % Organic Fiber

Note:
Bulk Asbestos Analysis by polarized light microscopy

**TABLE 6-3
SUMMARY OF GROUNDWATER ANALYSIS RESULTS -ESI**

**SENECA ARMY DEPOT ACTIVITY
REMOVAL ACTION**

PARAMETER	UNITS	MAXIMUM DETECT	FREQUENCY OF DETECTION	CRITERIA VALUE (a)	NUMBER ABOVE CRITERIA
SEMIVOLATILE ORGANICS					
Di-n-octylphthalate	ug/L	5	100%	50	0
METALS					
Aluminum	ug/L	1790	100%	50 (b)	2
Arsenic	ug/L	2.2	100%	5 (c)	0
Barium	ug/L	96.5	100%	1000	0
Calcium	ug/L	153000	100%	NA	NA
Chromium	ug/L	3	100%	50	0
Cobalt	ug/L	4.9	100%	NA	NA
Copper	ug/L	1.4	100%	200	0
Iron	ug/L	5070	100%	300	2
Magnesium	ug/L	40200	100%	NA	NA
Manganese	ug/L	1040	100%	50 (b)	3
Mercury	ug/L	0.05	100%	0.7	0
Nickel	ug/L	8	100%	100	0
Potassium	ug/L	10400	100%	NA	NA
Silver	ug/L	0.76	100%	50	0
Sodium	ug/L	91200	100%	20000	2
Thallium	ug/L	3	100%	2 (d)	1
Vanadium	ug/L	3	100%	NA	NA
Zinc	ug/L	20.2	100%	5000 (b)	0

NOTES:

- a) NY State Class GA Groundwater Standard (TOGS 1.1.1, June 1998), except as noted below.
- b) US EPA Secondary Drinking Water Regulation, non-enforceable (EPA 822-B-00-001, Summer 2000)
- c) US EPA Maximum Contaminant Limit announced 10/31/01. Source <http://www.epa.gov/safewater/arsenic.html>
- d) US EPA National Primary Drinking Water Standards, EPA 816-F-01-007 March 2001

**TABLE 6-4
SUMMARY OF SURFACE WATER ANALYSIS RESULTS - ESI**

**SENECA ARMY DEPOT ACTIVITY
REMOVAL ACTION**

PARAMETER	UNITS	MAXIMUM DETECT	FREQUENCY OF DETECTION	NYS CRITERIA VALUE (a,b)	NUMBER ABOVE CRITERIA
METALS					
Aluminum	ug/L	376	100%	100	1
Arsenic	ug/L	22.1	67%	150	0
Barium	ug/L	34.3	100%	NA	NA
Calcium	ug/L	85200	100%	NA	NA
Chromium	ug/L	1.3	67%	139.5	0
Copper	ug/L	2.1	100%	17.3	0
Iron	ug/L	575	100%	300	1
Lead	ug/L	0.89	33%	1.46	0
Magnesium	ug/L	13200	100%	NA	NA
Manganese	ug/L	67.9	100%	NA	NA
Nickel	ug/L	1.7	67%	99.9	0
Potassium	ug/L	3140	100%	NA	NA
Sodium	ug/L	11200	100%	NA	NA
Vanadium	ug/L	1.1	33%	14	0
Zinc	ug/L	10.5	100%	159.2	0

NOTES:

- a) The New York State Ambient Water Quality Standards and Guidance Values for Class C surface water (June 1998).
- b) Hardness dependent values assume a hardness of 216.4 mg/L (depot site-wide average).

**TABLE 6-5
SUMMARY OF SEDIMENT ANALYSIS RESULTS - ESI**

**SENECA ARMY DEPOT ACTIVITY
REMOVAL ACTION**

PARAMETER	UNITS	MAXIMUM DETECT	FREQUENCY OF DETECTION	CRITERIA VALUE (a)	NUMBER ABOVE CRITERIA	NUMBER OF DETECTS	NUMBER OF ANALYSES
Volatile Organic Compounds							
2-Butanone	ug/Kg	11	33%	2700	0	1	3
Semivolatile Organic Compounds							
4-Methylphenol	ug/Kg	110	67%	900	0	2	3
Acenaphthene	ug/Kg	160	33%	50000	0	1	3
Anthracene	ug/Kg	480	33%	50000	0	1	3
Benzo(a)anthracene	ug/Kg	1400	100%	224	1	3	3
Benzo(a)pyrene	ug/Kg	1200	100%	61	2	3	3
Benzo(b)fluoranthene	ug/Kg	1300	100%	1100	1	3	3
Benzo(g,h,i)perylene	ug/Kg	790	100%	50000	0	3	3
Benzo(k)fluoranthene	ug/Kg	1200	100%	1100	1	3	3
Carbazole	ug/Kg	250	33%		0	1	3
Chrysene	ug/Kg	1500	100%	400	1	3	3
Dibenz(a,h)anthracene	ug/Kg	260	33%	14	1	1	3
Dibenzofuran	ug/Kg	97	33%		0	1	3
Fluoranthene	ug/Kg	3500	100%	50000	0	3	3
Fluorene	ug/Kg	310	33%	50000	0	1	3
Indeno(1,2,3-cd)pyrene	ug/Kg	770	100%	3200	0	3	3
Phenanthrene	ug/Kg	2700	100%	50000	0	3	3
Pyrene	ug/Kg	4000	100%	50000	0	3	3
Pesticides and PCBs							
4,4'-DDE	ug/Kg	4.3	33%	2100	0	1	3
Aldrin	ug/Kg	2.2	33%	41	0	1	3
alpha-Chlordane	ug/Kg	8	33%	540	0	1	3
Aroclor-1242	ug/Kg	120	33%	1000	0	1	3
Aroclor-1260	ug/Kg	56	33%	1000	0	1	3
Endosulfan I	ug/Kg	15	67%	900	0	2	3
Metals							
Aluminum	mg/Kg	16300	100%	19300	0	3	3
Antimony	mg/Kg	3.3	100%	5.9	0	3	3
Arsenic	mg/Kg	62.7	100%	8.2	2	3	3
Barium	mg/Kg	117	100%	300	0	3	3
Beryllium	mg/Kg	0.75	100%	1.1	0	3	3
Cadmium	mg/Kg	0.8	100%	2.3	0	3	3
Calcium	mg/Kg	31400	100%	121000	0	3	3
Chromium	mg/Kg	25.1	100%	29.6	0	3	3
Cobalt	mg/Kg	9.3	100%	30	0	3	3
Copper	mg/Kg	25.5	100%	33	0	3	3
Iron	mg/Kg	26800	100%	36500	0	3	3
Lead	mg/Kg	49.6	100%	24.8	2	3	3
Magnesium	mg/Kg	6400	100%	21500	0	3	3
Manganese	mg/Kg	1380	100%	1060	1	3	3
Mercury	mg/Kg	0.02	33%	0.1	0	1	3
Nickel	mg/Kg	29.4	100%	49	0	3	3
Potassium	mg/Kg	2530	100%	2380	1	3	3
Sodium	mg/Kg	121	67%	172	0	2	3
Vanadium	mg/Kg	28.8	100%	150	0	3	3
Zinc	mg/Kg	243	100%	110	2	3	3
Other Analytes							
Total Solids	%W/W	78.7	1		0	3	3

NOTES:

a) NYSDEC Technical and Administrative Guidance Memorandum # 4046, January 1994

**TABLE 6-6
SUMMARY OF TCRA SOIL ANALYSIS RESULTS**

**SENECA ARMY DEPOT ACTIVITY
REMOVAL ACTION**

COMPOUND ¹	UNITS	MAXIMUM DETECT	FREQUENCY OF DETECTION	CRITERIA VALUE	NUMBER ABOVE CRITERIA	NUMBER OF DETECTS	NUMBER OF SAMPLES
METALS							
Aluminum	ug/Kg	19200	99%	19300	0	94	95
Antimony	ug/Kg	162	20%	5.9	4	19	93
Arsenic	ug/Kg	41.9	100%	8.2	42	425	425
Barium ²	ug/Kg	337	100%	300	1	94	94
Beryllium	ug/Kg	1	95%	1.1	0	89	94
Cadmium	ug/Kg	1.1	18%	2.3	0	17	94
Calcium	ug/Kg	64300	100%	121000	0	94	94
Chromium	ug/Kg	41.2	100%	29.6	4	94	94
Cobalt ²	ug/Kg	25.4	100%	30	0	94	94
Copper	ug/Kg	40.4	100%	33	2	94	94
Iron	ug/Kg	34700	100%	36500	0	94	94
Lead ³	ug/Kg	117	100%	400	0	94	94
Magnesium	ug/Kg	21200	100%	21500	0	94	94
Manganese	ug/Kg	2510	100%	1060	10	94	94
Mercury ²	ug/Kg	0.56	71%	0.1	2	298	420
Nickel	ug/Kg	49.9	100%	49	1	94	94
Potassium	ug/Kg	3490	100%	2380	13	94	94
Selenium ²	ug/Kg	0	0%	2	0	0	94
Silver	ug/Kg	0.39	3%	0.75	0	3	91
Sodium	ug/Kg	235	100%	172	3	94	94
Thallium	ug/Kg	0	0%	0.7	0	0	94
Vanadium ²	ug/Kg	31.3	100%	150	0	94	94
Zinc	ug/Kg	1960	100%	110	43	418	418
SEMIVOLATILE ORGANIC COMPOUNDS							
2-Methylnaphthalene ²	ug/Kg	0	0%	36400	0	0	97
Acenaphthene ²	ug/Kg	0	0%	50000	0	0	97
Acenaphthylene ²	ug/Kg	37	5%	41000	0	5	97
Anthracene ²	ug/Kg	45	14%	50000	0	14	97
Benzo(a)anthracene ²	ug/Kg	290	48%	224	1	47	97
Benzo(a)pyrene ²	ug/Kg	320	51%	61	16	49	97
Benzo(b)fluoranthene ²	ug/Kg	370	26%	1100	0	25	97
Benzo(ghi)perylene ²	ug/Kg	180	29%	50000	0	28	97
Benzo(k)fluoranthene ²	ug/Kg	320	26%	1100	0	25	97
Chrysene ²	ug/Kg	340	55%	400	0	53	97
Dibenzo(a,h)anthracene ²	ug/Kg	35	6%	14	6	6	97
Fluoranthene ²	ug/Kg	540	65%	50000	0	63	97
Fluorene ²	ug/Kg	0	0%	50000	0	0	97
Indeno(1,2,3-cd)pyrene ²	ug/Kg	150	27%	3200	0	26	97
Naphthalene ²	ug/Kg	0	0%	13000	0	0	97
Phenanthrene ²	ug/Kg	200	42%	50000	0	41	97
Pyrene ²	ug/Kg	610	66%	50000	0	64	97

Notes

1. The cleanup goal is the 95 percentile of the SEDA site background data, unless otherwise noted.
2. New York State Department of Environmental Conservation Technical and Administrative Guidance Memorandum (TAGM) # 4046 defined value
3. EPA Risk based residential cleanup goal for lead.

**TABLE 6-7
SITE-WIDE AND INDIVIDUAL AVERAGES OF TCRA SOIL ANALYSIS RESULTS**

**SENECA ARMY DEPOT ACTIVITY
REMOVAL ACTION**

Compound	TAGM (Cleanup Goal)	Units	Area 1			Area 2			Area 3		
			Floor	Perimeter	All	Floor	Perimeter	All	Floor	Perimeter	All
¹Metals											
Aluminum	19300	mg/Kg	13,134	12,296	12,715	15,950	13,988	14,969	17,667	15,128	16,397
Antimony	5.9	mg/Kg	1.7	2.6	2.1	0.9	1.0	1.0	1.0	1.0	1.0
Arsenic	8.2	mg/Kg	5.9	5.3	5.6	5.1	4.7	4.9	6.3	5.2	5.7
Barium ²	300	mg/Kg	111	65	88	106	76	91	87	73	80
Beryllium	1.1	mg/Kg	0.7	0.6	0.7	0.8	0.7	0.7	0.8	0.7	0.8
Cadmium	2.3	mg/Kg	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9
Calcium	121000	mg/Kg	11,163	17,348	14,256	5,350	15,703	10,526	18,703	24,880	21,792
Chromium	29.6	mg/Kg	20	21	20	24	30	27	27	30	29
Cobalt ²	30	mg/Kg	10	10	10	13	11	12	15	12	13
Copper	33	mg/Kg	17	22	19	19	25	22	23	28	26
Iron	36500	mg/Kg	23,193	23,315	23,254	25,875	26,050	25,963	31,800	28,120	29,960
Lead ³	400	mg/Kg	29	33	31	42	85	64	32	64	48
Magnesium	21500	mg/Kg	5,460	5,912	5,686	4,183	9,490	6,836	8,210	7,920	8,065
Manganese	1060	mg/Kg	875	447	661	804	500	652	801	484	643
Mercury ²	0.1	mg/Kg	0.05	0.06	0.06	0.05	0.05	0.05	0.05	0.04	0.04
Nickel	49	mg/Kg	23	31	27	26	30	28	39	41	40
Potassium	2380	mg/Kg	1,289	1,509	1,399	1,658	2,278	1,968	2,263	2,894	2,579
Selenium ²	2	mg/Kg	1.6	1.6	1.6	1.2	1.3	1.3	1.4	1.3	1.4
Silver	0.75	mg/Kg	0.3	0.3	0.3	0.2	0.3	0.2	0.3	0.3	0.3
Sodium	172	mg/Kg	64	77	71	72	95	84	129	104	116
Thallium	0.7	mg/Kg	2.9	3.0	3.0	2.2	2.5	2.4	2.6	2.6	2.6
Vanadium ²	150	mg/Kg	22	19	21	25	21	23	26	23	24
Zinc	110	mg/Kg	78	162	120	73	82	78	89	90	90

Notes:

1. The cleanup goal is the 95 percentile of the SEDA site background data, unless otherwise noted.
2. New York State Department of Environmental Conservation Technical and Administrative Guidance Memorandum (TAGM) # 4046 defined value
3. EPA Risk based residential cleanup goal for lead.

**TABLE 6-7
SITE-WIDE AND INDIVIDUAL AVERAGES OF TCRA SOIL ANALYSIS RESULTS**

**SENECA ARMY DEPOT ACTIVITY
REMOVAL ACTION**

Compound	TAGM (Cleanup Goal)	Area 4			Area 5			Area 6		
		Floor	Perimeter	All	Floor	Perimeter	All	Floor	Perimeter	All
¹Metals										
Aluminum	19300	14,893	13,286	14,089	15,260	14,225	14,743	16,000	15,200	15,600
Antimony	5.9	1.1	1.1	1.1	1.6	42.1	21.9	1.0	1.2	1.1
Arsenic	8.2	7.2	7.4	7.3	6.1	5.4	5.7	6.9	12.5	9.7
Barium ²	300	84	65	75	117	77	97	107	105	106
Beryllium	1.1	0.7	0.6	0.7	0.8	0.7	0.8	0.8	0.7	0.8
Cadmium	2.3	0.9	1.0	1.0	1.1	1.1	1.1	0.8	0.9	0.9
Calcium	121000	18,259	10,157	14,208	5,278	12,163	8,720	3,380	3,720	3,550
Chromium	29.6	22	22	22	22	24	23	21	21	21
Cobalt ²	30	13	12	13	11	11	11	12	11	11
Copper	33	22	23	23	19	22	21	18	21	20
Iron	36500	27,679	25,457	26,568	24,860	25,850	25,355	24,400	23,733	24,067
Lead ³	400	19	33	26	28	52	40	28	27	28
Magnesium	21500	7,824	5,257	6,540	4,470	6,198	5,334	3,820	4,030	3,925
Manganese	1060	720	499	610	790	498	644	697	548	623
Mercury ²	0.1	0.05	0.05	0.05	0.06	0.04	0.05	0.07	0.07	0.07
Nickel	49	33	33	33	25	32	28	24	26	25
Potassium	2380	1,653	2,024	1,839	1,592	1,839	1,715	1,840	2,603	2,222
Selenium ²	2	1.4	1.5	1.5	1.8	1.8	1.8	1.3	1.5	1.4
Silver	0.75	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Sodium	172	97	71	84	62	75	68	49	48	48
Thallium	0.7	2.7	2.7	2.7	3.4	3.3	3.3	2.5	2.7	2.6
Vanadium ²	150	22	19	20	25	21	23	25	24	24
Zinc	110	78	86	82	82	176	129	70	81	76

Notes:

1. The cleanup goal is the 95 percentile of the SEDA site background data, unless otherwise noted.
2. New York State Department of Environmental Conservation Technical and Administrative Guidance Memorandum (TAGM) # 4046 defined value.
3. EPA Risk based residential cleanup goal for lead.

**TABLE 6-7
SITE-WIDE AND INDIVIDUAL AVERAGES OF TCRA SOIL ANALYSIS RESULTS**

**SENECA ARMY DEPOT ACTIVITY
REMOVAL ACTION**

Compound	TAGM (Cleanup Goal)	Area 7			All Areas		
		Floor	Perimeter	All	Floor	Perimeter	All
¹ Metals							
Aluminum	19300	18,050	15,300	16,675	15,851	14,203	15,027
Antimony	5.9	1.0	1.5	1.3	1.2	7.2	4.2
Arsenic	8.2	5.9	5.6	5.7	6.2	6.6	6.4
Barium ²	300	129	94	112	106	79	93
Beryllium	1.1	0.9	0.8	0.8	0.8	0.7	0.7
Cadmium	2.3	1.0	1.3	1.1	0.9	1.0	1.0
Calcium	121000	4,810	3,930	4,370	9,563	12,557	11,060
Chromium	29.6	25	26	25	23	25	24
Cobalt ²	30	11	11	11	12	11	12
Copper	33	27	27	27	21	24	22
Iron	36500	28,700	29,600	29,150	26,644	26,018	26,331
Lead ³	400	20	14	17	28	44	36
Magnesium	21500	4,780	5,470	5,125	5,535	6,325	5,930
Manganese	1060	536	384	460	746	480	613
Mercury ²	0.1	0.06	0.05	0.05	0.06	0.05	0.05
Nickel	49	32	37	35	29	33	31
Potassium	2380	2,575	2,120	2,348	1,839	2,181	2,010
Selenium ²	2	1.4	2.0	1.7	1.4	1.6	1.5
Silver	0.75	0.3	0.4	0.3	0.3	0.3	0.3
Sodium	172	155	173	164	90	92	91
Thallium	0.7	2.6	3.8	3.2	2.7	2.9	2.8
Vanadium ²	150	29	25	27	25	22	23
Zinc	110	84	86	85	79	109	94

Notes:

1. The cleanup goal is the 95 percentile of the SEDA site background data, unless otherwise noted.
2. New York State Department of Environmental Conservation Technical and Administrative Guidance Memorandum (TAGM) # 4046 defined value.
3. EPA Risk based residential cleanup goal for lead.



PARSONS

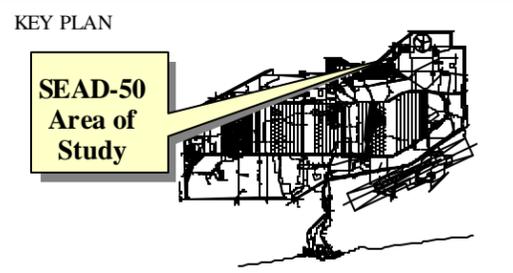
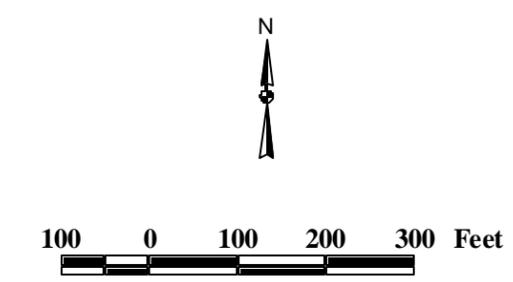
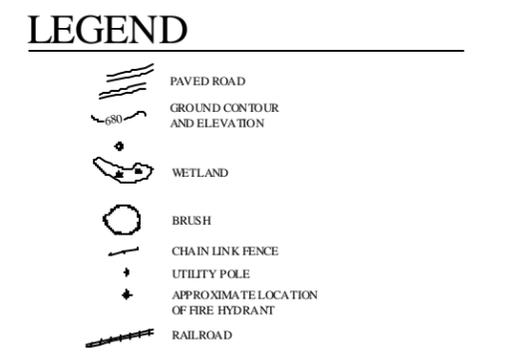
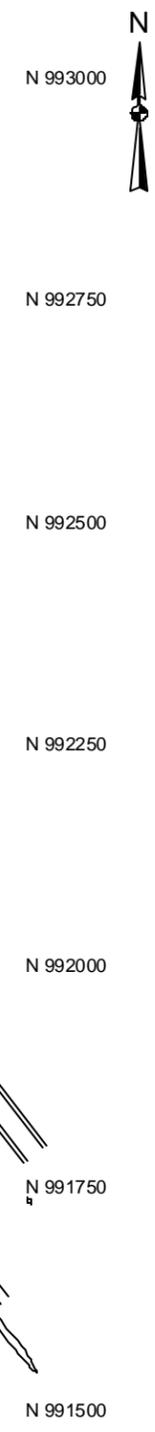
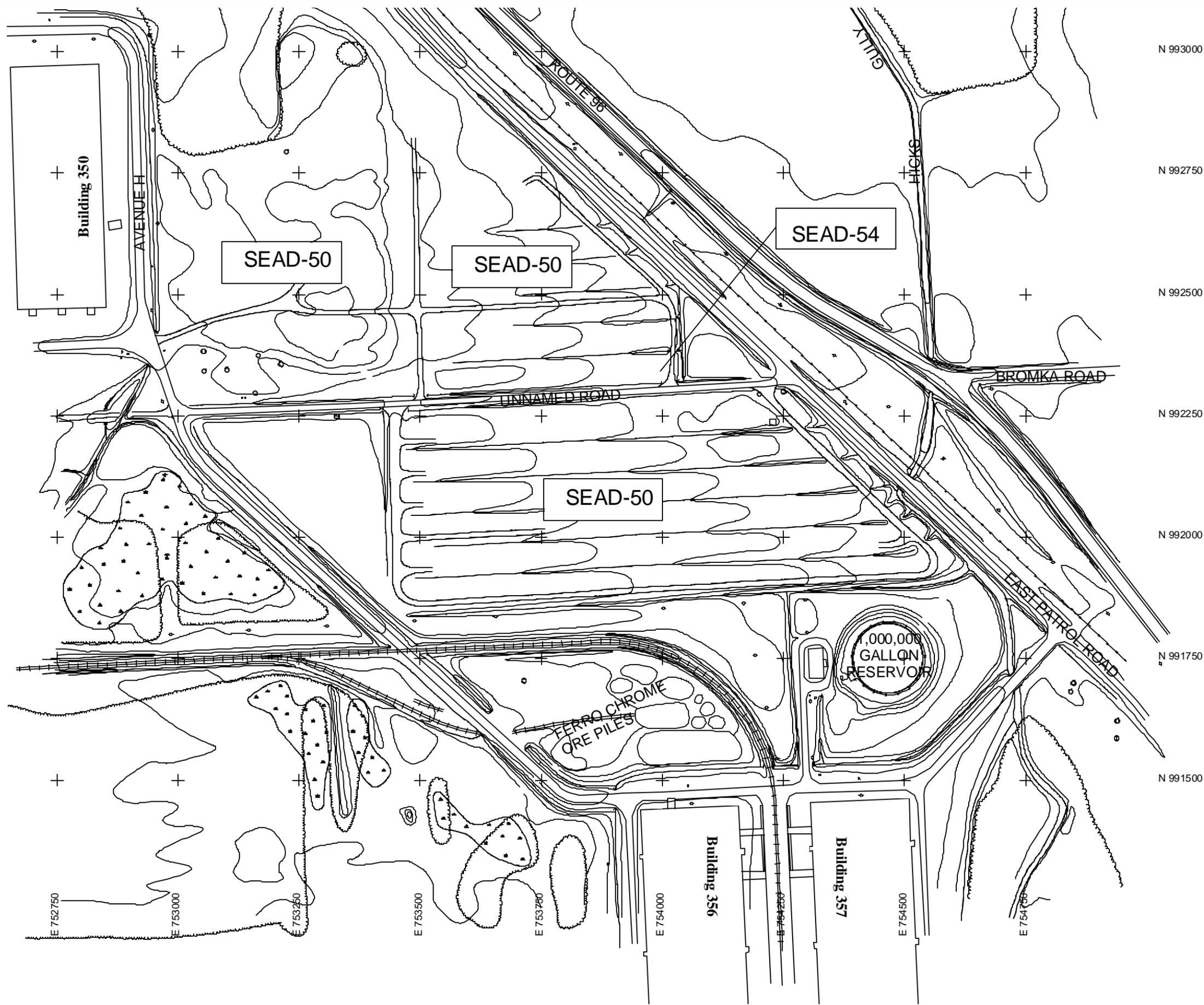
CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
 RECORD OF DECISION
 SEAD-50/54

DEPT. ENVIRONMENTAL ENGINEERING DWG NO. 743653-02000

FIGURE I-1
SENECA ARMY DEPOT ACTIVITY
 LOCATION MAP

SCALE 1" = 8 MILES APPROX. DATE DECEMBER 2004

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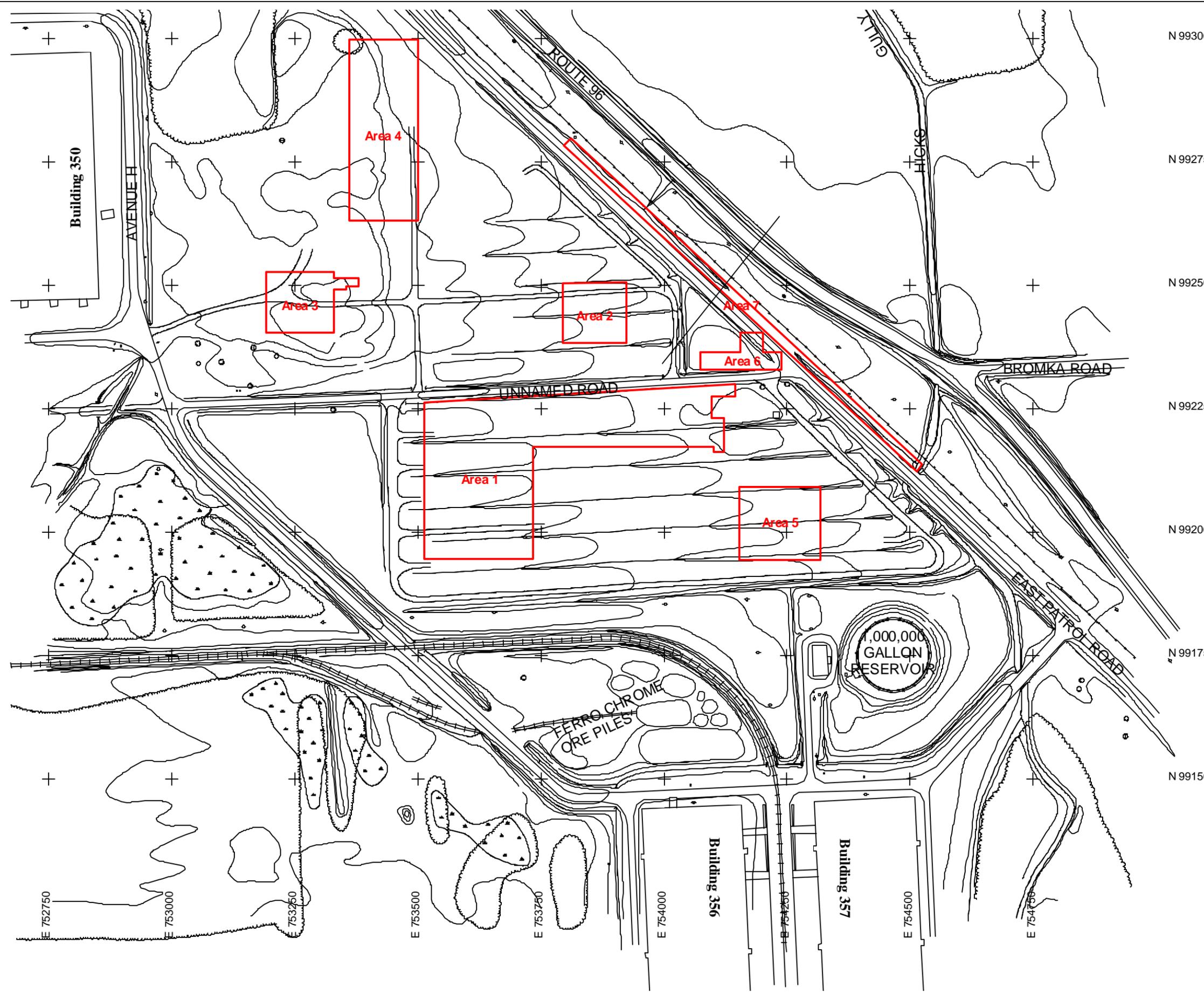


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SENECA ARMY DEPOT ACTIVITY
TANK FARM
SEAD-50 AND SEAD-54

FIGURE 2-1
SITE MAP - SEAD 50 and SEAD 54

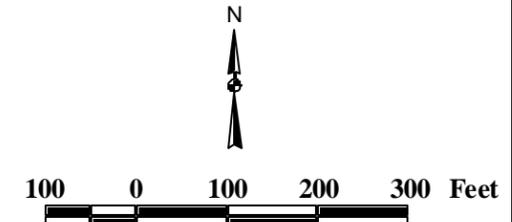
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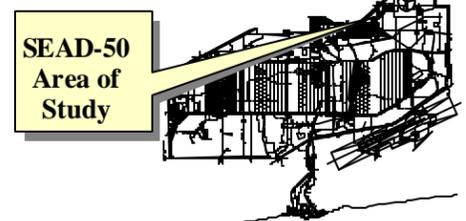
LEGEND

- PAVED ROAD
- GROUND CONTOUR AND ELEVATION
- WETLAND
- BRUSH
- CHAIN LINK FENCE
- UTILITY POLE
- APPROXIMATE LOCATION OF FIRE HYDRANT
- RAILROAD
- AREA OF EXCAVATION

AREA #	sq footage
1	105,855
2	10,669
3	10,244
4	54,196
5	23,247
6	3,511
7	9,152



KEY PLAN



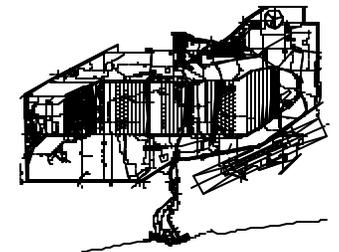
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SENECA ARMY DEPOT ACTIVITY
TANK FARM
SEAD-50 AND SEAD-54

FIGURE 6-1
TCRA SOIL EXCAVATION LOCATIONS

LEGEND

-  Airfield
-  Conservation
-  SEAD-50/54
-  Federal
-  Industrial
-  Institutional
-  Prison
-  Warehouse
-  Housing



PARSONS

Seneca Army Depot Activity
Record of Decision - SEAD-50/54

Figure 7-1
Future Land Use

PLANNED INDUSTRIAL/
OFFICE DEVELOPMENT (PID)
AREA

WAREHOUSE

FED TO FED
TRANSFER

HOUSING

SEAD - 50/54

INSTITUTIONAL

PRISON

CONSERVATION/
RECREATION

AIRFIELD SPECIAL EVENTS,
INSTITUTIONAL AND TRAINING

HOUSING

APPENDIX A

ADMINISTRATIVE RECORD INDEX

ADMINISTRATIVE RECORD

EPA, 2004 - Email from Julio Vazquez, RPM to Steve Absolom, BRAC Environmental Coordinator at the SEDA, Re: RA Completion Report for SEAD-50/54, stating that the goals for the SEAD-50/54 have been met, February 2004.

EPA, 1999 - A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents, EPA 540-R-98-031, OSWER 9200.1-23P, PB98-963241, July 1999.

NYSDEC, 2003 – Email from John Swartwout, Section Chief to EPA 2 Region Julio Vazquez, Re: DRAFT Completion Removal Report, stating that no additional investigation or excavation in SEAD-50/54 is necessary, October 2003.

NYSDEC, 2000 - Division of Water Technical and Operational Guidance Series 1.1.1 (TOGS 1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, June 1998 as amended January 1999 and April 2000.

NYSDEC, 1999 - Technical Guidance for Screening Contaminated Sediments, November 1993, as amended July 1994, March 1998, and January 1999.

NYSDEC, 1994 - Technical and Administrative Guidance Memorandum #4046, Determination of Soil Cleanup Objectives and Cleanup Levels, Jan 24, 1994.

Parsons, 2004 – Memorandum to Seneca Army Depot Activity “Seneca Army Depot Activity – Statistical Analysis of SEAD-50/54 TCRA Data and Proposed Plan”, January 2004.

Parsons, 2002 – Action Memorandum and Decision Document, Time-Critical Removal Actions, Four Metal Sites (SEADs 24, 50/54, & 67), Seneca Army Depot Activity, Final, August 2002.

Parsons, 1995 - Expanded Site Inspection, Eight Moderately Low Priority AOCs, SEADs 5, 9, 12 (A and B), (43, 56, 69), 44 (A and B), 50, 58 and 59, Draft Final, December 1995

Title 40 Code of Federal Regulations, Part 300, National Oil and Hazardous Substances Pollution Contingency Plan.

Title 42 US Code Chapter 103, Comprehensive Environmental Response, Compensation, and Liability, Section 9620.

Weston Solutions, Inc., 2003 – Completion Removal Report of SEAD-50/54, Seneca Army Depot Activity, Final, December 2003.

APPENDIX B

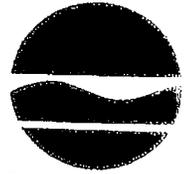
**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DECLARATION OF CONCURRENCE**

New York State Department of Environmental Conservation
Division of Environmental Remediation, 12th Floor

625 Broadway, Albany, New York 12233-7011

Phone: (518) 402-9706 • FAX: (518) 402-9020

Website: www.dec.state.ny.us



Denise M. Spiegel
Acting
Commissioner

FEB 11 2005

Mr. George Pavlou
Director
Emergency and Remedial Response Division
United States Environmental Protection
Agency, Region II
290 Broadway
Floor 19 - No. E38
New York, New York 10007-1866

RE: Seneca Army Depot, Site No. 850006
Record of Decision, SEAD 50/54

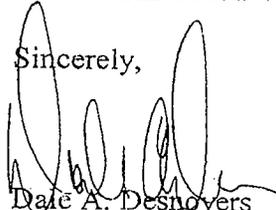
Dear Mr. Pavlou:

The New York State Department of Environmental Conservation has reviewed the above-referenced Record of Decision (ROD). The State concurs with this selected remedy as stated in the ROD, which is:

“Based on the findings of the investigations and activities completed for the sites, the Army has selected No Further Action as the remedy for two (2) SWMUs, SEAD-50/54. These selections are based on the Army’s determination that these sites do not pose a significant threat to human health or the environment. It should be noted that land within the Planned Industrial/Office Development (PID) area and Warehousing area, which includes land occupied by SEAD-50/54, is the subject of a separate Proposed Plan and Final ROD [“Final ROD for Sites Requiring Institutional Controls in the Planned Industrial/Office Development or Warehousing Areas” (Parsons, 2004)] in which institutional controls (ICs), including an area-wide groundwater use and a residential activity use restriction, have been implemented.”

If you have any questions, please contact Dr. Chittibabu Vasudevan at (518) 402-9625.

Sincerely,


Dyle A. Desnoyers

Director

Division of Environmental Remediation

cc: J. Vasquez, USEPA
S. Absolom, SEAD

APPENDIX C

PUBLIC COMMENTS AND RESPONSIVENESS SUMMARY

PUBLIC COMMENTS AND RESPONSIVENESS SUMMARY

NO FURTHER ACTION for SWMUs SEAD 50/54 SENECA ARMY DEPOT ACTIVITY – ROMULUS, NEW YORK

INTRODUCTION

A responsiveness summary is required by Superfund policy. It provides a summary of citizen's comments and concerns received during the public comment period, and the Army's responses to those comments and concerns.

OVERVIEW

Since the inception of this project, the Army has implemented an active policy of involvement with the local community. This involvement has occurred through the public forum provided by regular meetings of the Restoration Advisory Board (RAB). During these meetings, representatives of the community, the Army and the regulators are brought together in a forum where ideas and concerns are voiced and addressed. The RAB has been routinely briefed by the Army in regards to the progress and the results obtained during both the investigation and remedial alternative selection process. In addition to regular project specific briefings, the Army has provided experts in various fields related to the CERCLA program that have provided lectures intended to educate the general public in the various technical aspects of the CERCLA program at SEDA. Lectures have been conducted on risk assessments, both human health and ecological, remedial alternatives, such as bioventing and natural attenuation, institutional controls, and the feasibility study process.

BACKGROUND ON COMMUNITY INVOLVEMENT

Initially, during the years from 1991 through 1995, the Army formed and solicited community involvement through quarterly meetings with the Technical Review Committee (TRC). The TRC was comprised of community leaders with an active interest in the on-goings of the CERCLA process at the depot. These meetings were open to the public and were announced in the local newspaper and the radio. Following inclusion of the depot on the final BRAC closure list in late 1995, the Army transitioned from the TRC and formed the RAB. The BRAC Cleanup Team (BCT) was comprised of several of the TRC members with the addition of additional Army and regulatory representatives. The RAB increased the frequency of the meetings to a monthly basis. Since the formation of the TRC and the RAB, the Army has met with the local community members on a regular basis and has discussed the finding of both the RI and the FS. In addition, the proposed plan has been presented to the RAB.

SUMMARY OF COMMUNITY RELATIONS ACTIVITIES

The related Decision Document for SEAD-50/54 was released to the public for comment. This document was made available to the public in the administrative record file at the information repositories at Building 123 within the Seneca Army Depot Activity, 5786 State Route 96, Romulus, New York, 14541-0009. The notice of availability for the above-referenced documents was published in the Finger Lake Times on December 12, 2003, December 14, 2003, and December 15, 2003. The public comment period on these documents was held from December 15, 2003 to January 13, 2004.

On December 16, 2003, the Army, the EPA and the NYSDEC conducted a public meeting at the Seneca County Building in Waterloo, NY to inform local officials and interested citizens about the Superfund process, to review current and planned remedial activities at the site, and to respond to any questions from area residents and other attendees. The meeting included poster board presentations and provided an opportunity for the public to speak to Army, EPA and NYSDEC representatives involved in the process. The public was given the opportunity to provide formal comments that would be documented and become part of the official record for the selected remedy.

SUMMARY OF COMMENTS AND RESPONSES

No formal comments were received from the community during the public comment period. There is no official transcript since no comments were provided. In addition, no formal comments were received from the community during the public meeting.

DECLARATION OF THE RECORD OF DECISION

The selected remedy ("No Further Action") is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. The remedy uses permanent solutions. Insofar as contamination does not remain at the SWMUs at concentrations above levels that provide for unrestricted use and unlimited exposure, institutional controls and 5-year reviews are not necessary.

The foregoing represents the selection of a remedial action by the U.S. Department of the Army and the U.S. Environmental Protection Agency, with the concurrence of the New York State Department of Environmental Conservation.

Concur and recommend for immediate implementation:



THOMAS E. LEDERIE

Director, Base Realignment and Closure, Hampton Field Office
U.S. Army Installation Support
Management Agency

3 Aug 2005
Date

The foregoing represents the selection of a remedial action by the U.S. Department of the Army and the U.S. Environmental Protection Agency, with the concurrence of the New York State Department of Environmental Conservation.

Concur and recommend for immediate implementation:



GEORGE PAVLOU
Director, Emergency and Remedial Response Division
U.S. Environmental Protection Agency, Region II

Date 9/28/05

DECLARATION OF THE RECORD OF DECISION

The selected remedy ("No Further Action") is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. The remedy uses permanent solutions. Insofar as contamination does not remain at the SWMUs at concentrations above levels that provide for unrestricted use and unlimited exposure, institutional controls and 5-year reviews are not necessary.

The foregoing represents the selection of a remedial action by the U.S. Department of the Army and the U.S. Environmental Protection Agency, with the concurrence of the New York State Department of Environmental Conservation.

Concur and recommend for immediate implementation:



STEPHEN M. ABSOLOM
BRAC Environmental Coordinator
Seneca Army Depot Activity

30 Jan 05
Date



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

SEP 28 2005

Thomas E. Lederle, Director
Base Realignment and Closure
Hampton Field Office
3A Bernard Road, Bldg. 105A
Fort Monroe, VA 23651-1048

Re: Record of Decision for SEAD-50 and SEAD-54 at the Seneca Army Depot Activity
Superfund Site, Romulus, New York

Dear Mr. Lederle:

This is to inform you that after review of the draft Record of Decision and other supporting documents, the U.S. Environmental Protection Agency (EPA) concurs with the selected remedy requiring No Further Action for SEAD-50 and SEAD-54 at the Seneca Army Depot Activity Superfund Site in Romulus, New York. Enclosed are two copies of the Record of Decision, which I have co-signed on behalf of EPA.

This Record of Decision addresses only the Areas of Concern SEAD-50 and SEAD-54 located within the Planned Industrial Development and Warehouse Areas. It should be noted that land within these areas, which includes land occupied by SEAD-50 and SEAD-54, is subject to institutional controls restricting residential development and use of the groundwater. As such, this larger land area is subject to five-year reviews.

If you have any questions regarding the subject of this letter, please contact me at (212) 637-4390 or have your staff call Julio Vazquez at (212) 637-4323.

Sincerely,

A handwritten signature in black ink, appearing to read "G. Pavlou".

George Pavlou, Director
Emergency and Remedial Response
Division

Enclosures

cc: Dale A. Desnoyers, Director
Division of Environmental Remediation
NYSDEC
Kuldeep Gupta, NYSDEC

**FINAL
RECORD OF DECISION
FOR
NO FURTHER ACTION FOR SWMUs SEAD 50/54
SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK**

Prepared for:

**SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK**

and

**UNITED STATES ARMY CORPS OF ENGINEERS
4820 UNIVERSITY SQUARE
HUNTSVILLE, ALABAMA**

Prepared By:

**PARSONS
150 Federal Street, 4th Floor
Boston, Massachusetts 02110**

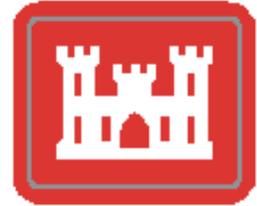
**CERCLIS Site ID No.: NY0213820830
NY State Site ID No.: 8-50-006
Contract Number: DACA87-02-D-0005
Delivery Order 0022**

September 2005

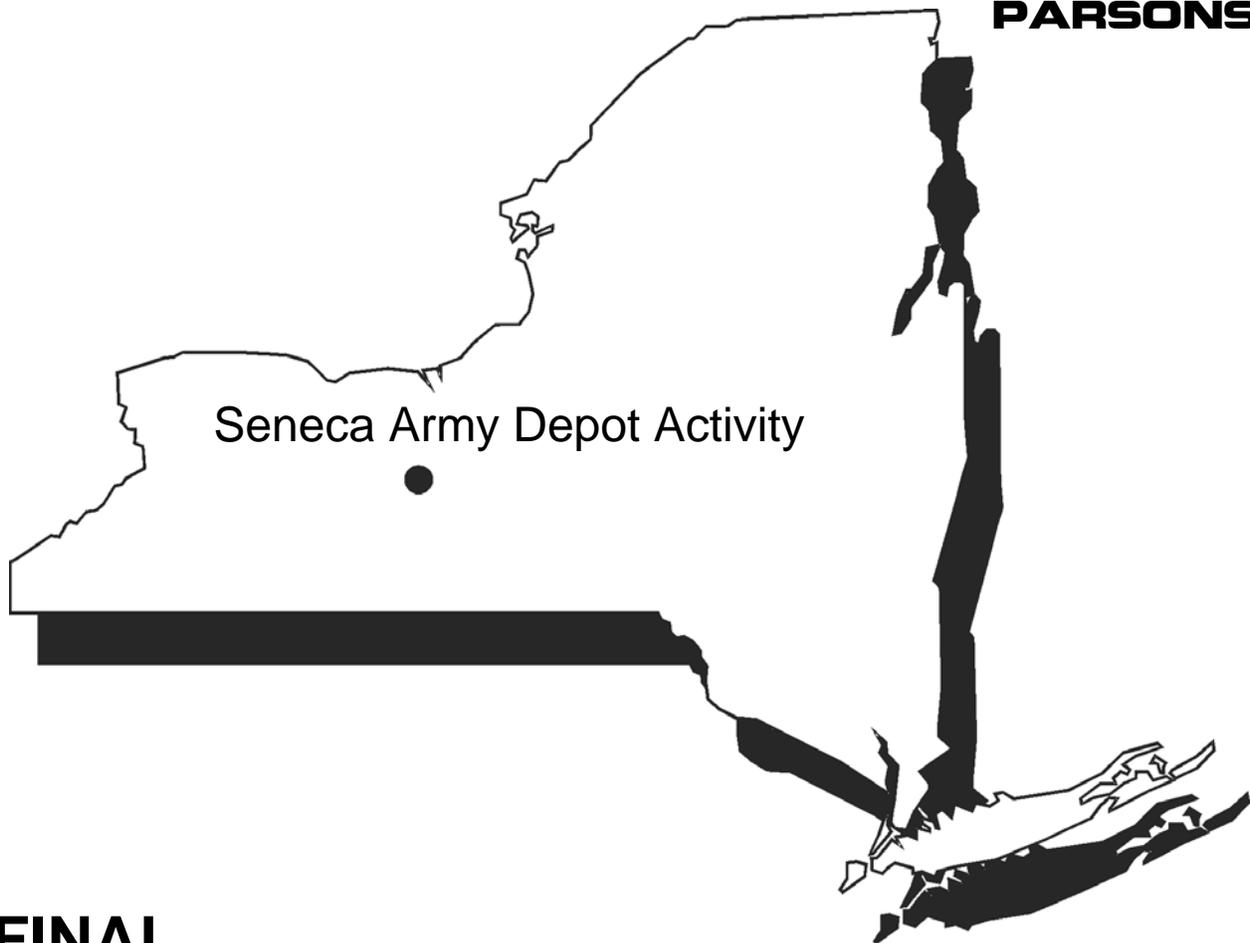


US Army, Engineering & Support Center
Huntsville, AL

Seneca Army Depot Activity
Romulus, NY



PARSONS



FINAL
RECORD OF DECISION (ROD)
NO FURTHER ACTION SWMUs (SEAD-50/54)
SENECA ARMY DEPOT ACTIVITY

EPA Site ID# NY0213820830
NY Site ID# 8-50-006
CONTRACT NO. DACA87-02-D-0005
DELIVERY ORDER NO. 0022

September 2005

6.0 SITE CHARACTERISTICS

SEAD-50/54 is located at the Depot's Tank Farm, which is in the southeastern portion of the SEDA in an area where the designated future land use is designated as Warehousing. SEAD-50 is the "SWMU Classification Report, Final" (Parsons 1994) designation used for the overall Tank Farm, while SEAD-54 was the designation used for Tank #88 which was used to store asbestos material. The Tank Farm was sited in a triangular-shaped tract of land encompassing approximately 22 acres, immediately west of East Patrol Road between Building 350 and Buildings 356 and 357 (**Figure 2-1**). At one time, approximately 160 aboveground storage tanks (silos) were located at the Tank Farm site, but all tanks have since been removed from the site. According to SEDA personnel, the tanks were always used to store dry materials such as antimony, rutile ore, and other ores and minerals.

The topography of SEAD-50/54 is relatively flat, with a total relief of 2 to 3 feet. An east-west running access road bisects the site and connects Avenue H with the East Patrol Road. Drainage ditches run along both sides of the access road, and water captured in these ditches flows east towards intersecting ditches bordering the East Patrol Road. North of the access road, the vegetation is generally overgrown across the site except in spots where the circular footprints of former tanks are located. The circular footprints of the former tanks are generally clear of vegetation and covered with gravel. The former asbestos storage tank (Tank #88) was located immediately north of the access road on the east side of the Tank Farm and situated between excavation areas 1, 2, and 6 (**Figure 6-1**). The area south of the access road is flat and grassy. A ferro-chromate ore pile is located in the southern area of the historic Tank Farm at the border of the grassy area. There are no mapped wetlands located within the bounds of the former Tank Farm.

Expanded Site Investigation (ESI)

An Expanded Site Investigation (ESI) was performed at the Tank Farm area in 1993 to determine whether a release of hazardous constituents had occurred (Parsons, 1995). The ESI included a geophysical survey, drilling and installation of three groundwater monitoring wells, and the collection of soil, sediment, surface water and groundwater samples for subsequent chemical analyses. The geophysical survey conducted included a seismic refraction survey that was initially used to estimate the direction of groundwater flow, which was determined to flow approximately west to east.

All soil, sediment, groundwater, and surface water samples were submitted to the laboratory for chemical analysis. Collected samples were analyzed for Target Compound List (TCL) volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides/polychlorinated biphenyls (PCBs), and Target Analyte List (TAL) metals and cyanide according to the NYSDEC Contract Laboratory Program Statement of Work. In addition, all of the surface soil samples were analyzed for bulk asbestos by polarized light microscopy.

Fifteen surface soil samples were collected at random locations within the Tank Farm to assess potential releases from the tanks. Seven samples were collected from the 0-2 inch depth horizon, while the remaining eight samples were collected from the 0-12 inch depth horizon.

Three groundwater monitoring wells were installed in the till/weathered shale aquifer that exists in the area of the Tank Farm. One monitoring well was installed upgradient (west) of SEAD-50/54 and was used to obtain background water quality data, while the other two wells were installed downgradient (east) of the Tank Farm, between East Patrol Road and the Depot's perimeter fence, to determine if hazardous constituents from the site were impacting the groundwater. Three samples, one sample from each well, were collected and submitted to the laboratory for chemical analysis.

Three surface water and three collocated sediment (shallow soil) samples were collected from drainage culverts that run adjacent to roadway surfaces in the vicinity of the Tank Farm. One surface water and shallow soil sample pair was collected from a drainage ditch that runs parallel to the unnamed road that bisects the Tank Farm, while the remaining two surface water and shallow soil/sediment sample pairs were collected from a downgradient drainage ditch that runs between the East Patrol Road and Route 96. The drainage ditches that surround SEAD-50/54 are temporal, typically holding water only as a result of a storm or snowmelt event. As such, the "sediment" lining the base of the drainage ditches is considered to be, and was evaluated as, soil by the Army. The excavation locations of all sampling points are shown in **Figure 6-1**. A summary of the ESI results is presented below. For complete results, refer to the "Expanded Site Inspection, 8 Moderately Low Priority AOCs, SWMUs 5, 9, 123 (A and B), (43, 56, and 69), 44 (A and B), 50, 58 and 59, *Draft Final*" (Parsons, December 1995) or the "Final Action Memorandum and Decision Document (AM/DD), Time-Critical Removal Action, Four Metal Sites (SEADs 24, 50/54, & 67" Report (Parsons, 2002), which are available in the Administrative Record.

Soil sampling results are presented in **Tables 6-1** and **6-2**. Of 56 TCL/TAL analytes detected in one or more of the soil samples collected, one was a VOC, 20 were SVOCs, 13 were pesticides or PCBs, and the remaining 22 were metals. Asbestos was detected in one of the 15 soil samples, at location SS50-1, which is located in excavation Area 5.

Eight metals (antimony, arsenic, chromium, copper, lead, magnesium, mercury, and zinc) were found in soil samples at concentrations that exceeded their respective NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 recommended clean-up objective levels. Although lead was found at concentrations that exceeded NYSDEC's recommended level (24.8 mg/Kg based on site background) in 13 of the 15 surface soil samples characterized, it was not found at a concentration that exceeds the EPA's recommended soil cleanup level for residential properties (400 mg/Kg).

The maximum concentrations measured within SEAD-50/54 for chromium, lead, mercury, and zinc were found at sample location SS50-5, Area 1. Arsenic concentrations exceeded its TAGM value in three of the 15 surface soil samples collected; the maximum concentration detected was 151 mg/Kg at location

Furthermore, Parsons indicated that the potential threat resulting from potential exposure to arsenic and mercury at the Site had been greatly reduced. Initial concentration measured for arsenic in the shallow soils at the Site ranged upwards to 151 mg/Kg whereas the highest concentrations detected in the soil after the removal action was performed was 41.9 mg/Kg. Similarly, 20 percent of the samples collected and analyzed during the ESI exceeded the Depot-specific soil cleanup objective and the maximum concentration determined for arsenic (i.e., 21.5 mg/Kg) in background samples before the work was performed whereas after the removal of soil, fewer than 10 percent of all samples characterized for arsenic (425 total) contained concentrations that exceeded the Depot-specific cleanup objective and only 2 of 425 sample results exhibited concentrations above the maximum concentration found for arsenic in the background data set. Finally, after the removal action, the Site-wide average concentration of arsenic determined from the analysis of all 425 samples was 6.2 mg/Kg which compared very favorably with the Depot-wide background average concentration for arsenic of 5.2 mg/Kg, and is greatly reduced from the prior average Site concentration determined during the ESI which was 20.9 mg/Kg.

Similar reductions were observed for mercury, where only two out of 419 total samples had concentrations that exceeded the State's recommended soil clean up level of 0.1 mg/Kg or the Depot-wide maximum mercury concentration of 0.13 mg/Kg. The overall site average concentration determined for mercury after the removal action is 0.047 mg/Kg, which again compared favorably to the Depot-wide background average of 0.038 mg/Kg.

With reference to the PAH compounds identified, the sampling results provided in the Completion Report indicate that there was a large reduction (at least a factor of 10 fold) for each of the maximum concentrations of carcinogenic PAHs previously detected at the site, and that the total concentration measured for total carcinogenic PAHs was considerably lower than the 10 mg/Kg (i.e., ppm) total threshold recommended for soil at SEAD-26.

Finally, Parsons highlighted certain additional points about the statistical evaluation that was performed by NERL personnel. NERL indicated that it had conducted the analysis in accordance with procedures described in two guidance documents, identified as EPA (1989) which is entitled "Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities Interim Final Guidance" (EPA/530-SW-89-026) and the Addendum to Interim Final Guidance (EPA, 1992). Within the analysis report, EPA NERL stated:

"It is observed that arsenic dataset consists of an outlier, 21.5 ppm. The 95% UTL and the 95% UPL for arsenic have been computed with and without the outlier."

And additionally:

"For example, for arsenic, the 95% UTL=8.0 ppm (instead of the maximum value= 21.5 ppm which may represent an outlier) can be used as the background threshold value. An exceedance of 8.0 ppm by a site arsenic concentration from an area of concern may be considered as an indication of contamination possibly requiring further remediation action. It is noted that there are several site observations from the final excavation (from the final 6" lift) which exceed the 95%

ACRONYMS AND ABBREVIATIONS

<u>Acronym</u>	<u>Definition</u>
AM/DD	Action Memorandum / Decision Document
AOC	Area of Concern
Army	U.S. Department of the Army
BCT	Base Cleanup Team
BRAC	Base Realignment and Closure
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
cy	Cubic yard
Depot	Seneca Army Depot Activity or SEDA
DLA	Defense Logistics Agency
DoD	Department of Defense
EPA	U.S. Environmental Protection Agency
ESI	Expanded Site Investigation
et seq.	and the following one
FFA	Federal Facility Agreement
LRA	Local Redevelopment Authority
mg/Kg	milligrams per kilogram
MSL	Mean Sea Level
NCP	National Oil and Hazardous Substances Pollution Contingency Plan or National Contingency Plan
NERL	National Exposure Research Laboratory
NFA	No Further Action
NPL	National Priorities List
NYS	New York State
NYCRR	Codes, Rules and Regulations of the State of New York
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health

2.0 SITE NAME, LOCATION AND DESCRIPTION

The Seneca Army Depot Activity (SEDA or the Depot) previously occupied approximately 10,600 acres of land that is located near the Village of Romulus in Seneca County, New York. The military facility was owned by the U.S. Government and operated by the Army between 1941 and approximately 2000, when the SEDA military mission ceased.

SEDA is located in an uplands area, which forms a divide separating two of the New York Finger Lakes, Cayuga Lake on the east and Seneca Lake on the west. The elevation of the facility is approximately 600 feet above Mean Sea Level (MSL).

SEAD-50/54 encompasses land where the Depot's historic Tank Farm was located. The Tank Farm was located in the southeastern portion of the SEDA in an area where the future land use is designated as Warehousing. The Tank Farm was sited in a triangular-shaped tract of land encompassing approximately 22 acres, immediately west of East Patrol Road between Building 350 and Buildings 356 and 357 (**Figure 2-1**). At one time, approximately 160 aboveground storage tanks (silos) were located at the Tank Farm site, but all tanks have since been removed from the site. According to SEDA personnel, the tanks were always used to store dry materials such as antimony, rutile ore, and other ores and minerals which were part of the country's strategic material stockpiles.

SEAD-54, which was assigned to historic Tank #88, is listed as a separate SWMU under the Depot's prior submissions because it previously contained asbestos material.

3.0 SITE HISTORY AND ENFORCEMENT ACTIVITIES

On July 14, 1989, the EPA proposed SEDA for inclusion on the National Priorities List (NPL). Supporting its recommendation for listing, the EPA stated “the Army identified a number of potentially contaminated areas, including an unlined 13-acre landfill in the west-central portion of the depot, where solid waste and incinerator ash were disposed of intermittently for 30 years during 1941-79; two incinerator pits adjacent to the landfill, where refuse was burned at least once a week during 1941-74; a 90-acre open burning/detonation area in the northwest portion of the depot, where explosives and related wastes have been burned and detonated during the past 30 years; and the APE-1236 Deactivation Furnace in the east-central portion of the depot, where small arms are destroyed.” The EPA recommendation was approved and finalized on August 30, 1990, when SEDA was listed in Group 14 of the Federal Facilities portion of the NPL.

Once SEDA was listed on the NPL, the Army, USEPA, and NYSDEC identified 57 solid waste management units (SWMUs) where historic data or information suggested, or evidence existed to support, that hazardous substances have been handled and may have possibly been released and migrated into the environment. Each of these AOCs was identified in the “Federal Facilities Agreement” (i.e., FFA, USEPA, NYSDEC, Army, 1993) signed by the three parties in 1993. This list was subsequently expanded to include 72 sites when the Army completed the “SWMU Classification Report, *Final*” (Parsons, 1994), which was required under the terms of the FFA. The SEDA was a generator and Treatment, Storage and Disposal Facility (TSDF) and thus subject to regulation under the Resource Conservation and Recovery Act (RCRA). Under this permit system, corrective action is required at all SWMUs.

Remedial goals for CERCLA and RCRA are equivalent; thus when the 72 SWMUs were classified in the “SWMU Classification Report, *Final*” (Parsons, 1994), the Army recommended that they be listed either as No Action sites or Areas of Concern (AOCs). SWMUs listed as AOCs in the “SWMU Classification Report, *Final*” (Parsons, 1994) were then scheduled for further investigations based upon data and potential risks to the environment.

In 1995, the SEDA was designated for closure under the Department of Defense’s (DoD’s) Base Realignment and Closure (BRAC) process. With SEDA’s inclusion on the BRAC list, the Army’s emphasis expanded from expediting necessary investigations and remedial actions at prioritized sites to include the release of non-affected portions of the Depot to the surrounding community for their reuse for non-military purposes (i.e., industrial, municipal, and residential).

Since the inclusion of the SEDA in the BRAC program, approximately 8,000 acres have been released to the community. An additional 250 acres of land have undergone a federal-to-federal transfer for use by the U.S. Coast Guard.

When the “SWMU Classification Report, *Final*” (Parsons, 1994) was issued, SEAD-50 was identified as a Moderately Low Priority AOC, and SEAD-54 was listed as a Low Priority AOC. An expanded site investigation (ESI), including geophysical surveys (seismic refraction survey), installation and sampling of three groundwater wells; and the collection and analysis of 15 surface soil, three sediment, three surface water and three groundwater samples was performed in the area of the Tank Farm in 1993. The collected samples were analyzed for Target Compound List (TCL) volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides/polychlorinated biphenyls (Pest/PCBs), Target Analyte List (TAL) metals and cyanide according to the NYSDEC Contract Laboratory Program Statement of Work. In addition, all of the surface soil samples were analyzed for bulk asbestos by polarized light microscopy. The results of the ESI were reported in “Expanded Site Inspection, 8 Moderately Low Priority AOCs, SWMUs 5, 9, 123 (A and B), (43, 56, and 69), 44 (A and B), 50, 58 and 59, *Draft Final*” (Parsons, December 1995).

The results of the ESI indicated that elevated levels of contaminants were present at the AOC; additional information describing the contaminants identified is presented in Section 6 of this ROD and in the report identified immediately above. Based on the results of the ESI, the Army decided that it would perform a removal action at the site to reduce or eliminate any potential threat to human health and the environment in the vicinity of SEAD-50/54 due to the presence of identified elevated concentrations of compounds in the soil at the site. The Army’s decision was documented in the “Final Action Memorandum and Decision Document, Time-Critical Removal Actions, Four Metal Sites (SEADs 24, 50/54, & 67)” (Parsons, 2002). The TCRA proposed for SEAD-50/54 was performed by Weston Solutions Inc. on behalf of the Army in late 2002 and early 2003.

A final copy of the SEAD-50/54 Completion Report was submitted by the Army and Weston to the EPA and NYSDEC in 2003. This document was titled “Final Completion Report, SEAD-50/54” (Weston Solution, Inc., 2003), and provided a description of TCRA activities and confirmatory sampling results obtained for SEAD-50/54. The Completion Report presents data that supports the Army’s claims that SEAD-50/54 no longer “poses a threat to the public health, welfare, or the environment.”

The Army has prepared this Record of Decision for the two “No Further Action” SWMUs as the final step in the CERCLA process required for these sites. Since the listing of SEDA on the NPL in 1990, the Army has worked to develop and prepare the information and data that are needed to support determinations of what remedial actions are needed at each of the identified SWMUs and AOCs to ensure that site conditions are protective of human health and the environment, the selected remedy complies with State and Federal requirements that are legally applicable or relevant and appropriate to the extent practicable, and is cost effective. Data and information developed and evaluated by the Army for these sites are summarized in this Record of Decision and are discussed in detail in the Completion Report submitted for SEDA per requirements of the FFA (Section 10.6) listed in the Administrative Record provided as **Appendix A**. This Record of Decision is submitted to fulfill the requirements of the Section 10.8 of the FFA for the Seneca Army Depot Activity.

4.0 COMMUNITY PARTICIPATION

The Army, the EPA, and the NYSDEC rely on public input to ensure that the concerns of the community are considered in selecting an effective remedy for each Superfund site. The public comment period for the SWMUs SEAD-50/54 was held from December 15, 2003 through January 13, 2004 to provide an opportunity for public participation in the remedy selection process for these sites. A public meeting was held on December 16, 2003 at the Seneca County Office Building in Waterloo, NY beginning at 7 pm.

At the public meeting, the results of the investigations and the remedial action (RA) at the sites were presented along with a summary of the preferred remedy. At the presentation, a question-and-answer period was held, during which the public had the opportunity to ask questions or submit written comments during the comment period on the site investigation and preferred remedy.

Information and data summarized within this ROD for SEAD-50/54 is presented and described in greater detail within the Final "Completion Report for SEAD-50/54" (Weston Solutions Inc., 2003), and the Final "Action Memorandum and Decision Document, Time-Critical Removal Actions, Four Metal Sites (SEADs 24, 50/54, & 67" Report (Parsons, 2002)). To better understand the sites and the investigations and studies that have been conducted at the sites, the public was encouraged to review the project documents at the Seneca Army Depot Activity during the public comment period. The building location to view the documents was given during the public meeting. Written comments could be submitted to the SEDA BRAC Environmental Coordinator (address given during public meeting) at any time during the public comment period.

No substantive public comments warranting a formal response were received. Comments on the Draft and Draft Final ROD were provided to the Army by NYSDEC and EPA and changes required to address these comments have been incorporated in this final document.

5.0 SCOPE AND ROLE

The Army has selected No Further Action as the remedy for the SWMUs SEAD-50/54 addressed in this ROD. The selected remedy at the sites is based on the Army's and EPA's determination that no residual hazardous substances remains that poses a significant threat to human health or the environment at these SWMUs.

**FINAL
RECORD OF DECISION
FOR**

NO FURTHER ACTION FOR SWMUS SEAD 50/54

**SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK**

Prepared for:

**SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK**

and

UNITED STATES ARMY CORPS OF ENGINEERS
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**CERCLIS Site ID No.: NY0213820830
NY State Site ID No.: 8-50-006
Contract Number: DACA87-02-D-0005
Delivery Order 0022**

September 2005

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ACRONYMS AND ABBREVIATIONS

<u>Acronym</u>	<u>Definition</u>
AM/DD	Action Memorandum / Decision Document
AOC	Area of Concern
Army	U.S. Department of the Army
BCT	Base Cleanup Team
BRAC	Base Realignment and Closure
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
cy	Cubic yard
Depot	Seneca Army Depot Activity or SEDA
DLA	Defense Logistics Agency
DoD	Department of Defense
EPA	U.S. Environmental Protection Agency
ESI	Expanded Site Investigation
et seq.	and the following one
FFA	Federal Facility Agreement
LRA	Local Redevelopment Authority
mg/Kg	milligrams per kilogram
MSL	Mean Sea Level
NCP	National Oil and Hazardous Substances Pollution Contingency Plan or National Contingency Plan
NERL	National Exposure Research Laboratory
NFA	No Further Action
NPL	National Priorities List
NYS	New York State
NYCRR	Codes, Rules and Regulations of the State of New York
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health

ACRONYMS AND ABBREVIATIONS
(Continued)

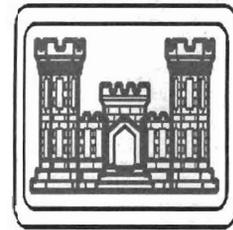
<u>Acronym</u>	<u>Definition</u>
PAH(s)	Polycyclic Aromatic Hydrocarbon(s)
PCB	Polychlorinated Biphenyl
ppm	part(s) per million
RA	Remedial Action
RAB	Restoration Advisory Board
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act
SCIDA	Seneca County Industrial Development Agency
SEAD	Former acronym for the Seneca Army Depot used to designate SWMU numbers
SEDA	Seneca Army Depot Activity
SVOC	Semivolatile Organic Compound
SWMU(s)	Solid Waste Management Unit(s)
TAGM	Technical and Administrative Guidance Memorandum
TAL	Target Analyte List
TCL	Target Compound List
TCRA	Time-Critical Removal Action
TPH	Total Petroleum Hydrocarbon
TRC	Technical Review Committee
TSDf	Treatment, Storage, and Disposal Facility
USC	United States Code
USA	United States of America
VOC	Volatile Organic Compound

RECORD OF DECISION



NO FURTHER ACTION SWMUs SEAD-50/54

**SENECA ARMY DEPOT ACTIVITY (SEDA)
ROMULUS, NEW YORK**



1.0 DECLARATION OF THE RECORD OF DECISION

Site Name and Location

Seneca Army Depot Activity

CERCLIS ID# NY0213820830

NY State ID# 8-50-006

Romulus, Seneca County, New York

No Further Action (NFA) Sites:

SEAD-50, Tank (silo) Farm

SEAD-54, Location of Asbestos-Containing Tank (silo)

Statement of Basis and Purpose

This Record of Decision (ROD) presents the U.S. Department of the Army's (Army's) and the U.S. Environmental Protection Agency's (EPA's) selected remedy of No Further Action for two Solid Waste Management Units (SWMUs) SEADs 50 and 54 (henceforth SEAD-50/54) located at the Seneca Army Depot Activity (SEDA) near Romulus, Seneca County, New York (**Figure 1-1**). The decision was developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended by Superfund Amendments and Reauthorization Act (SARA), 42 United States Code (USC) §9601 et seq. and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), Title 40 Code of Federal Regulations (CFR) Part 300. The SEDA Base Realignment and Closure (BRAC) Environmental Coordinator, the Director of the National Capital Region Office, U.S. Army Installation Support Management Agency; and the Director of the Emergency and Remedial Response Division, U.S. Environmental Protection Agency (EPA) Region II have been delegated the authority to approve this ROD. The New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH) have been consulted on the planned remedy in accordance with CERCLA 121(f), 42 USC §9621 (f), and concur with the selected remedy.

1.0 DECLARATION OF THE RECORD OF DECISION

Site Name and Location

Seneca Army Depot Activity

CERCLIS ID# NY0213820830

NY State ID# 8-50-006

Romulus, Seneca County, New York

No Further Action (NFA) Sites:

SEAD-50, Tank (silo) Farm

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This ROD is based on the Administrative Record that has been developed in accordance with Section 113(k) of CERCLA. The Administrative Record is available for public review at the Seneca Army Depot Activity, Building 123, Romulus, NY. The Administrative Record Index identifies each of the items considered during the selection of the remedial action. This index is included in **Appendix A**.

The State of New York, through the NYSDEC, has concurred with the selected remedy. The NYSDEC Declaration of Concurrence is provided in **Appendix B** of this ROD.

Description of the Selected Remedy

Based on the findings of the investigations and activities completed for the sites, the Army has selected No Further Action as the remedy for two SWMUs, SEAD-50/54. These selections are based on the Army's proposal that these sites do not pose a significant threat to human health or the environment.

It should be noted that land within the Planned Industrial/Office Development (PID) area and Warehousing area, which includes land occupied by SEAD-50/54, is the subject of a separate Proposed Plan and Final ROD ["Final ROD for Sites Requiring Institutional Controls in the Planned Industrial/Office Development or Warehousing Areas" (Parsons, 2004)] in which institutional controls (ICs), including an area-wide groundwater use and a residential activity use restriction, have been implemented.

Statutory Determination

The Army and EPA have selected No Further Action as the remedy for SEAD-50/54.

Authorizing Signatures and USEPA and NYSDEC Acceptance of Remedy

This Declaration also serves as the formal authorizing signature page for the No Further Action SWMUs SEAD-50/54 ROD. Pursuant to the *Federal Facility Agreement for the Seneca Army Depot* (FFA), the ROD shall be adopted by the Army, EPA, and NYSDEC if all parties agree to the contents of the ROD. In the event that mutual agreement cannot be reached on the ROD, the Federal Facility Agreement (FFA) designates the responsibility for the selection of the final remedial action to the EPA Administrator, and further specifies that the EPA shall then prepare the final ROD. The selection of any remedial action by the EPA Administrator shall be final and not subject to dispute by the Army.

DECLARATION OF THE RECORD OF DECISION

The selected remedy (“No Further Action”) is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. The remedy uses permanent solutions. Insofar as contamination does not remain at the SWMUs at concentrations above levels that provide for unrestricted use and unlimited exposure, institutional controls and 5-year reviews are not necessary.

The foregoing represents the selection of a remedial action by the U.S. Department of the Army and the U.S. Environmental Protection Agency, with the concurrence of the New York State Department of Environmental Conservation.

Concur and recommend for immediate implementation:

STEPHEN M. ABSOLOM
BRAC Environmental Coordinator
Seneca Army Depot Activity

Date

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DECLARATION OF THE RECORD OF DECISION

The selected remedy (“No Further Action”) is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. The remedy uses permanent solutions. Insofar as contamination does not remain at the SWMUs at concentrations above levels that provide for unrestricted use and unlimited exposure, institutional controls and 5-year reviews are not necessary.

The foregoing represents the selection of a remedial action by the U.S. Department of the Army and the U.S. Environmental Protection Agency, with the concurrence of the New York State Department of Environmental Conservation.

Concur and recommend for immediate implementation:

THOMAS E. LEDERIE
Director, Base Realignment and Closure, Hampton Field Office
U.S. Army Installation Support
Management Agency

Date

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The foregoing represents the selection of a remedial action by the U.S. Department of the Army and the U.S. Environmental Protection Agency, with the concurrence of the New York State Department of Environmental Conservation.

Concur and recommend for immediate implementation:

GEORGE PAVLOU
Acting Director, Emergency and Remedial Response Division
U.S. Environmental Protection Agency, Region II

Date

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The New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH) forwarded to the U.S. Environmental Protection Agency a letter of concurrence regarding the selection of a remedial action in the future. This letter of concurrence is attached in **Appendix B**.

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2.0 SITE NAME, LOCATION AND DESCRIPTION

The Seneca Army Depot Activity (SEDA or the Depot) previously occupied approximately 10,600 acres of land that is located near the Village of Romulus in Seneca County, New York. The military facility was owned by the U.S. Government and operated by the Army between 1941 and approximately 2000, when the SEDA military mission ceased.

SEDA is located in an uplands area, which forms a divide separating two of the New York Finger Lakes, Cayuga Lake on the east and Seneca Lake on the west. The elevation of the facility is approximately 600 feet above Mean Sea Level (MSL).

SEAD-50/54 encompasses land where the Depot's historic Tank Farm was located. The Tank Farm was located in the southeastern portion of the SEDA in an area where the future land use is designated as Warehousing. The Tank Farm was sited in a triangular-shaped tract of land encompassing approximately 22 acres, immediately west of East Patrol Road between Building 350 and Buildings 356 and 357 (**Figure 2-1**). At one time, approximately 160 aboveground storage tanks (silos) were located at the Tank Farm site, but all tanks have since been removed from the site. According to SEDA personnel, the tanks were always used to store dry materials such as antimony, rutile ore, and other ores and minerals which were part of the country's strategic material stockpiles.

SEAD-54, which was assigned to historic Tank #88, is listed as a separate SWMU under the Depot's prior submissions because it previously contained asbestos material.

3.0 SITE HISTORY AND ENFORCEMENT ACTIVITIES

On July 14, 1989, the EPA proposed SEDA for inclusion on the National Priorities List (NPL). Supporting its recommendation for listing, the EPA stated “the Army identified a number of potentially contaminated areas, including an unlined 13-acre landfill in the west-central portion of the depot, where solid waste and incinerator ash were disposed of intermittently for 30 years during 1941-79; two incinerator pits adjacent to the landfill, where refuse was burned at least once a week during 1941-74; a 90-acre open burning/detonation area in the northwest portion of the depot, where explosives and related wastes have been burned and detonated during the past 30 years; and the APE-1236 Deactivation Furnace in the east-central portion of the depot, where small arms are destroyed.” The EPA recommendation was approved and finalized on August 30, 1990, when SEDA was listed in Group 14 of the Federal Facilities portion of the NPL.

Once SEDA was listed on the NPL, the Army, USEPA, and NYSDEC identified 57 solid waste management units (SWMUs) where historic data or information suggested, or evidence existed to support, that hazardous substances have been handled and may have possibly been released and migrated into the environment. Each of these AOCs was identified in the “Federal Facilities Agreement” (i.e., FFA, USEPA, NYSDEC, Army, 1993) signed by the three parties in 1993. This list was subsequently expanded to include 72 sites when the Army completed the “SWMU Classification Report, *Final*” (Parsons, 1994), which was required under the terms of the FFA. The SEDA was a generator and Treatment, Storage and Disposal Facility (TSDF) and thus subject to regulation under the Resource Conservation and Recovery Act (RCRA). Under this permit system, corrective action is required at all SWMUs.

Remedial goals for CERCLA and RCRA are equivalent; thus when the 72 SWMUs were classified in the “SWMU Classification Report, *Final*” (Parsons, 1994), the Army recommended that they be listed either as No Action sites or Areas of Concern (AOCs). SWMUs listed as AOCs in the “SWMU Classification Report, *Final*” (Parsons, 1994) were then scheduled for further investigations based upon data and potential risks to the environment.

In 1995, the SEDA was designated for closure under the Department of Defense’s (DoD’s) Base Realignment and Closure (BRAC) process. With SEDA’s inclusion on the BRAC list, the Army’s emphasis expanded from expediting necessary investigations and remedial actions at prioritized sites to include the release of non-affected portions of the Depot to the surrounding community for their reuse for non-military purposes (i.e., industrial, municipal, and residential).

Since the inclusion of the SEDA in the BRAC program, approximately 8,000 acres have been released to the community. An additional 250 acres of land have undergone a federal-to-federal transfer for use by the U.S. Coast Guard.

When the “SWMU Classification Report, *Final*” (Parsons, 1994) was issued, SEAD-50 was identified as a Moderately Low Priority AOC, and SEAD-54 was listed as a Low Priority AOC. An expanded site investigation (ESI), including geophysical surveys (seismic refraction survey), installation and sampling of three groundwater wells; and the collection and analysis of 15 surface soil, three sediment, three surface water and three groundwater samples was performed in the area of the Tank Farm in 1993. The collected samples were analyzed for Target Compound List (TCL) volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides/polychlorinated biphenyls (Pest/PCBs), Target Analyte List (TAL) metals and cyanide according to the NYSDEC Contract Laboratory Program Statement of Work. In addition, all of the surface soil samples were analyzed for bulk asbestos by polarized light microscopy. The results of the ESI were reported in “Expanded Site Inspection, 8 Moderately Low Priority AOCs, SWMUs 5, 9, 123 (A and B), (43, 56, and 69), 44 (A and B), 50, 58 and 59, *Draft Final*” (Parsons, December 1995).

The results of the ESI indicated that elevated levels of contaminants were present at the AOC; additional information describing the contaminants identified is presented in Section 6 of this ROD and in the report identified immediately above. Based on the results of the ESI, the Army decided that it would perform a removal action at the site to reduce or eliminate any potential threat to human health and the environment in the vicinity of SEAD-50/54 due to the presence of identified elevated concentrations of compounds in the soil at the site. The Army’s decision was documented in the “Final Action Memorandum and Decision Document, Time-Critical Removal Actions, Four Metal Sites (SEADs 24, 50/54, & 67)” (Parsons, 2002). The TCRA proposed for SEAD-50/54 was performed by Weston Solutions Inc. on behalf of the Army in late 2002 and early 2003.

A final copy of the SEAD-50/54 Completion Report was submitted by the Army and Weston to the EPA and NYSDEC in 2003. This document was titled “Final Completion Report, SEAD-50/54” (Weston Solution, Inc., 2003), and provided a description of TCRA activities and confirmatory sampling results obtained for SEAD-50/54. The Completion Report presents data that supports the Army’s claims that SEAD-50/54 no longer “poses a threat to the public health, welfare, or the environment.”

The Army has prepared this Record of Decision for the two “No Further Action” SWMUs as the final step in the CERCLA process required for these sites. Since the listing of SEDA on the NPL in 1990, the Army has worked to develop and prepare the information and data that are needed to support determinations of what remedial actions are needed at each of the identified SWMUs and AOCs to ensure that site conditions are protective of human health and the environment, the selected remedy complies with State and Federal requirements that are legally applicable or relevant and appropriate to the extent practicable, and is cost effective. Data and information developed and evaluated by the Army for these sites are summarized in this Record of Decision and are discussed in detail in the Completion Report submitted for SEDA per requirements of the FFA (Section 10.6) listed in the Administrative Record provided as **Appendix A**. This Record of Decision is submitted to fulfill the requirements of the Section 10.8 of the FFA for the Seneca Army Depot Activity.

4.0 COMMUNITY PARTICIPATION

The Army, the EPA, and the NYSDEC rely on public input to ensure that the concerns of the community are considered in selecting an effective remedy for each Superfund site. The public comment period for the SWMUs SEAD-50/54 was held from December 15, 2003 through January 13, 2004 to provide an opportunity for public participation in the remedy selection process for these sites. A public meeting was held on December 16, 2003 at the Seneca County Office Building in Waterloo, NY beginning at 7 pm.

At the public meeting, the results of the investigations and the remedial action (RA) at the sites were presented along with a summary of the preferred remedy. At the presentation, a question-and-answer period was held, during which the public had the opportunity to ask questions or submit written comments during the comment period on the site investigation and preferred remedy.

Information and data summarized within this ROD for SEAD-50/54 is presented and described in greater detail within the Final "Completion Report for SEAD-50/54" (Weston Solutions Inc., 2003), and the Final "Action Memorandum and Decision Document, Time-Critical Removal Actions, Four Metal Sites (SEADs 24, 50/54, & 67" Report (Parsons, 2002)). To better understand the sites and the investigations and studies that have been conducted at the sites, the public was encouraged to review the project documents at the Seneca Army Depot Activity during the public comment period. The building location to view the documents was given during the public meeting. Written comments could be submitted to the SEDA BRAC Environmental Coordinator (address given during public meeting) at any time during the public comment period.

No substantive public comments warranting a formal response were received. Comments on the Draft and Draft Final ROD were provided to the Army by NYSDEC and EPA and changes required to address these comments have been incorporated in this final document.

5.0 SCOPE AND ROLE

The Army has selected No Further Action as the remedy for the SWMUs SEAD-50/54 addressed in this ROD. The selected remedy at the sites is based on the Army's and EPA's determination that no residual hazardous substances remains that poses a significant threat to human health or the environment at these SWMUs.

6.0 SITE CHARACTERISTICS

SEAD-50/54 is located at the Depot's Tank Farm, which is in the southeastern portion of the SEDA in an area where the designated future land use is designated as Warehousing. SEAD-50 is the "SWMU Classification Report, Final" (Parsons 1994) designation used for the overall Tank Farm, while SEAD-54 was the designation used for Tank #88 which was used to store asbestos material. The Tank Farm was sited in a triangular-shaped tract of land encompassing approximately 22 acres, immediately west of East Patrol Road between Building 350 and Buildings 356 and 357 (**Figure 2-1**). At one time, approximately 160 aboveground storage tanks (silos) were located at the Tank Farm site, but all tanks have since been removed from the site. According to SEDA personnel, the tanks were always used to store dry materials such as antimony, rutile ore, and other ores and minerals.

The topography of SEAD-50/54 is relatively flat, with a total relief of 2 to 3 feet. An east-west running access road bisects the site and connects Avenue H with the East Patrol Road. Drainage ditches run along both sides of the access road, and water captured in these ditches flows east towards intersecting ditches bordering the East Patrol Road. North of the access road, the vegetation is generally overgrown across the site except in spots where the circular footprints of former tanks are located. The circular footprints of the former tanks are generally clear of vegetation and covered with gravel. The former asbestos storage tank (Tank #88) was located immediately north of the access road on the east side of the Tank Farm and situated between excavation areas 1, 2, and 6 (**Figure 6-1**). The area south of the access road is flat and grassy. A ferro-chromate ore pile is located in the southern area of the historic Tank Farm at the border of the grassy area. There are no mapped wetlands located within the bounds of the former Tank Farm.

Expanded Site Investigation (ESI)

An Expanded Site Investigation (ESI) was performed at the Tank Farm area in 1993 to determine whether a release of hazardous constituents had occurred (Parsons, 1995). The ESI included a geophysical survey, drilling and installation of three groundwater monitoring wells, and the collection of soil, sediment, surface water and groundwater samples for subsequent chemical analyses. The geophysical survey conducted included a seismic refraction survey that was initially used to estimate the direction of groundwater flow, which was determined to flow approximately west to east.

All soil, sediment, groundwater, and surface water samples were submitted to the laboratory for chemical analysis. Collected samples were analyzed for Target Compound List (TCL) volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides/polychlorinated biphenyls (PCBs), and Target Analyte List (TAL) metals and cyanide according to the NYSDEC Contract Laboratory Program Statement of Work. In addition, all of the surface soil samples were analyzed for bulk asbestos by polarized light microscopy.

Fifteen surface soil samples were collected at random locations within the Tank Farm to assess potential releases from the tanks. Seven samples were collected from the 0-2 inch depth horizon, while the remaining eight samples were collected from the 0-12 inch depth horizon.

Three groundwater monitoring wells were installed in the till/weathered shale aquifer that exists in the area of the Tank Farm. One monitoring well was installed upgradient (west) of SEAD-50/54 and was used to obtain background water quality data, while the other two wells were installed downgradient (east) of the Tank Farm, between East Patrol Road and the Depot's perimeter fence, to determine if hazardous constituents from the site were impacting the groundwater. Three samples, one sample from each well, were collected and submitted to the laboratory for chemical analysis.

Three surface water and three collocated sediment (shallow soil) samples were collected from drainage culverts that run adjacent to roadway surfaces in the vicinity of the Tank Farm. One surface water and shallow soil sample pair was collected from a drainage ditch that runs parallel to the unnamed road that bisects the Tank Farm, while the remaining two surface water and shallow soil/sediment sample pairs were collected from a downgradient drainage ditch that runs between the East Patrol Road and Route 96. The drainage ditches that surround SEAD-50/54 are temporal, typically holding water only as a result of a storm or snowmelt event. As such, the "sediment" lining the base of the drainage ditches is considered to be, and was evaluated as, soil by the Army. The excavation locations of all sampling points are shown in **Figure 6-1**. A summary of the ESI results is presented below. For complete results, refer to the "Expanded Site Inspection, 8 Moderately Low Priority AOCs, SWMUs 5, 9, 123 (A and B), (43, 56, and 69), 44 (A and B), 50, 58 and 59, *Draft Final*" (Parsons, December 1995) or the "Final Action Memorandum and Decision Document (AM/DD), Time-Critical Removal Action, Four Metal Sites (SEADs 24, 50/54, & 67" Report (Parsons, 2002), which are available in the Administrative Record.

Soil sampling results are presented in **Tables 6-1** and **6-2**. Of 56 TCL/TAL analytes detected in one or more of the soil samples collected, one was a VOC, 20 were SVOCs, 13 were pesticides or PCBs, and the remaining 22 were metals. Asbestos was detected in one of the 15 soil samples, at location SS50-1, which is located in excavation Area 5.

Eight metals (antimony, arsenic, chromium, copper, lead, magnesium, mercury, and zinc) were found in soil samples at concentrations that exceeded their respective NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 recommended clean-up objective levels. Although lead was found at concentrations that exceeded NYSDEC's recommended level (24.8 mg/Kg based on site background) in 13 of the 15 surface soil samples characterized, it was not found at a concentration that exceeds the EPA's recommended soil cleanup level for residential properties (400 mg/Kg).

The maximum concentrations measured within SEAD-50/54 for chromium, lead, mercury, and zinc were found at sample location SS50-5, Area 1. Arsenic concentrations exceeded its TAGM value in three of the 15 surface soil samples collected; the maximum concentration detected was 151 mg/Kg at location

SS50-6, in excavation Area 1. Other concentrations measured for metals that exceeded TAGMs were generally evenly distributed amongst the soil sampling locations, and, typically, measured concentrations did not significantly exceed their respective cleanup levels.

Results for asbestos in soil are provided in **Table 6-2** at the end of this document. The surface soil sample collected from Area 5 contained 10 to 15 percent chrysotile asbestos. Area 5 is approximately 400 ft. south-east of Tank #88, which once stored dry asbestos (amosite). However, asbestos was not found in any of the other surface soil samples collected from the area of SEAD-50/54 or in subsequent confirmatory soil samples from Area 5 or SEAD-50/54.

Concentrations measured for seven SVOCs (including six PAHs and phenol) exceeded their respective NYSDEC cleanup objective levels in soils. A majority of the PAH concentrations identified above cleanup objective levels were found in the three samples collected from locations SS50-11 (Area 4), SS50-14 (Area 2), and SS50-15 (Area 3). Each of these sampling locations is in the northern part of the historic Tank Farm, north of the unnamed road that bisects the area.

Generally, available chemical analysis data indicate that groundwater at SEAD-50/54 has not been significantly impacted by the historic storage activities that were performed in this area. A summary of the groundwater sampling program is presented in **Table 6-3** at the end of this document. One SVOC and 18 metals were detected in one or more of the three groundwater samples collected. Concentrations measured for five of the metals (aluminum, iron, manganese, sodium and thallium) exceeded their respective GA groundwater criteria levels. In three out of five cases (not including sodium and thallium), the highest concentration measured for these metals were found in the upgradient well. Additionally, none of these five metals were found at concentrations exceeding NYSDEC recommended cleanup level objectives for soil at the Tank Farm. Thus, it is presumed that the presence of these metals in the groundwater results from other sources or activities unrelated to the historic Tank Farm operations.

Chemical analysis results indicate that surface water at the site has not been significantly impacted by the historic storage activities that were conducted at SEAD-50/54. A summary of the ESI surface water sampling program is presented in **Table 6-4** at the end of this document. Fifteen metals were detected in the surface water samples collected, and two of these metals (aluminum and iron) were found at a concentration that exceeded their NYS Class C surface water criteria at a single location, SW50-1.

The available chemical analysis data suggest that several targeted chemicals have impacted the surface soil in drainage ditches at SEAD-50/54. A summary of the results from samples collected in drainage ditches that abut the Tank Farm are presented in **Table 6-5**. Forty-four TCL/TAL analytes, including one VOC, 17 SVOCs, six pesticides and PCBs, and 20 metals were detected in samples collected. Of the compounds detected, 11 were detected at concentrations that exceeded their respective TAGM cleanup objective values. The 11 compounds found to exceed their respective TAGMs included 6 SVOCs and 5 metals.

The five metals (arsenic, lead, manganese, potassium and zinc) were detected at sampling location, SW50-1/SD50-1, closest to the former location of Tank #88 (SEAD-54). Arsenic, lead, manganese, and zinc were found due north of Tank #88 in the ditch adjacent to East Patrol Road. However, sample location SW50-3/SD50-3, which is at the furthest downstream location and within the same ditch network as SW50-1/SD50-1, showed metal concentrations well below the TAGM levels. SVOCs were found at concentrations exceeding their respective TAGM values in ditch soils located at SW50-1/SD50-1 (Area 6) and SW50-2/SD50-2 (Area 7).

Time Critical Removal Action (TCRA)

The results of the ESI suggested that metal contaminants (namely arsenic, mercury, and zinc) were present at levels that potentially represented a threat to the environment and surrounding populations. Additionally, localized areas of elevated PAH concentrations were also identified in several of the areas where the primary metal contaminants were found. In order to alleviate or eliminate the potential threat posed by these chemicals, the Army recommended that a Time-Critical Removal Action (TCRA) be implemented. Details of the Army's proposed removal were presented in the "Final Action Memorandum and Decision Document, Time-Critical Removal Actions, Four Metal Sites (SEADs 24, 50/54, & 67)" (Parsons, 2002).

The TCRA was performed from late November 2002 through late February 2003, and consisted of the excavation of soil from seven areas where high metal concentrations (specifically arsenic, mercury, and zinc) had previously been found. The seven excavation areas within SEAD 50/54 are shown in Figure 6-1. Final decisions pertinent to the completion of the excavation at each site were to be based on the results of confirmational sampling and analyses that were performed at each of the targeted areas.

Prior to the excavation of any soil from Area 5, asbestos and pre-characterization bulk soil samples were collected and analyzed at each planned grid cell location within the excavation area to verify if any asbestos containing material (ACM) was present. This work was included within the overall scope of the TCRA in response to the prior finding of ACM at sample location SS50-1 during the ESI. However, the results of sampling and analyses completed during the TCRA by Weston Solutions did not show that ACM was present at the site. Nonetheless, Weston Solutions prepared ACM notifications and submitted forms to the State of New York and to the EPA on

November 13, 2002 to perform a removal action in the area of SS50-1. The New York Department of Labor Asbestos Control Bureau approved the ACM work in a letter dated November 26, 2002. A term of the approval letter was that work was not to begin earlier than November 27, 2002.

Soil excavation was performed at grid cell (quadrant) FX-015 within Area 5, which is the area within which the ESI sample (i.e., SS50-1) found to contain asbestos was located, on December 4, 2002. The asbestos removal effort was conducted in compliance with: EPA 340/1-90/019 Asbestos/National Emission Standards for Hazardous Air Pollutants (NESHAP) Adequately Wet Guidelines (December 1990); EPA 340/1-90-018 Asbestos/NESHAP Regulated ACM Guidance (1990); State of New York Department of Labor Industrial Code Rule No. 56; title 9 Code of Federal Regulations (CFR) 1910.1001 General Industry; Title 29 CFR 1926.1101 Asbestos Standard for the Construction Industry; title 29 CFR 1910.134 Respiratory Protection and, US Army Corps of Engineers (USACE) Safety and Health Requirements Manual, EM 385-1-1. During this portion of the excavation work, real-time air monitoring was performed for asbestos and the work was completed by personnel suited in Level C PPE. Soil excavated from this grid cell [approximately 17 cubic yards (cy)] was live-loaded into double-lined dump trucks and was transported off-site for disposal as ACM at Seneca Meadows Landfill. Post-excavation confirmatory sampling was conducted by Sci Labs, Inc. using polarized light microscopy (PLM) and indicated negative results for ACM at a depth of 6 inches; therefore, additional soil removal for ACM was not required.

At the other areas, excavations were advanced to a depth of six inches below grade using an excavator with a 4-ft. wide grading bucket. Under this approach, approximately 5150 cy of soil were excavated from the sites. Once all excavations reached the planned depth (e.g., 6 inches) confirmational sampling was performed. Under the proposed TCRA excavation plan, digging at an excavation area could be halted if all confirmational sample results showed that target analyte (i.e., arsenic, mercury, and zinc) concentrations were less than or equal to cleanup objectives (TAGMs); alternatively, digging continued within specific grid blocks if confirmational sampling results indicated target analyte levels above the cleanup goals. If the results of a floor conformational sample failed to meet the cleanup criteria, then the

excavation continued to a greater depth, typically in 6 to 12 inch steps, while the bounds of the grid were extended outwardly if a perimeter sample did not achieve the cleanup criteria. Based on this process, the majority of the grid cells or quadrants advanced at SEADs-50/54 were excavated to a final depth of 6 inches; 5 grid cells were excavated to a final depth of 9 inches; 46 quadrants were excavated to a final depth of 12 inches; 1 grid cell was excavated to a final depth of 15 inches; 20 grid cells were excavated to a depth of 18 inches; and 7 quadrants were excavated to a final depth of 2 feet or greater below grade before reaching satisfactory confirmatory soil sample results (2 quadrants in Area 1; 1 quadrant in Area 3; 1 quadrant in Area 4; and 3 quadrants in Area 6). The deepest excavation performed in any of the areas was located at quadrant FX-023 in Area 4 where the final excavation extended 6 feet below grade. Excavations extending below 6 inches resulted in the excavation of an additional 1,880 cy of soil being removed (total excavated 7,030 cy).

Confirmatory soil samples were collected from the bottom and either the perimeter or sidewall of the each grid cell or quadrant within the overall area of excavation. Initially, most excavation areas were subdivided into 30 foot by 30 foot grids, and confirmatory samples from the excavation floor or bottom were collected as five-point composites from each 900 square foot area (or fraction thereof). At Area 7 (drainage ditch), each grid cell was approximately 10 feet wide by 90 feet long. Each part of the five-point floor composite sample was collected from a depth of 2 to 6 inches below the base of the excavation.

Perimeter samples were collected beyond the bounds of each excavation advanced to a depth of either 6 or 12 inches. Perimeter confirmational samples were collected as discrete grab samples at bound locations of each grid (one per every 30 feet or less). Each perimeter sample was collected at a point 1 foot beyond the bounds of the excavation. At excavations advanced to depths of greater than 12 inches, sidewall samples were collected at grid marker positions at locations roughly halfway down the face of the excavation wall.

Based on the preliminary plan for the TCRA, the Army anticipated that a total of 423 (262 floor and 161 perimeter/sidewall) samples would be collected and analyzed as part of the TCRA. However, due to the need to expand the vertical and horizontal extent of several of the excavations, a final total of 607 confirmational samples (402 floor and 205 perimeter/sidewall) were collected and submitted for analysis. The distribution of confirmatory samples (floor and perimeter) over the surface area for each of the 7 areas were: Area 1 [110,260 square feet (ft²), 229 floor, 57 perimeter]; Area 2 (10,670 ft², 16 floor, 18 perimeter); Area 3 (10,220 ft², 16 floor, 16 perimeter); Area 4 (54,200 ft², 89 floor, 46 perimeter); Area 5 (23,250 ft², 26 floor, 23 perimeter); Area 6 (3,510 ft², 16 floor, 43 perimeter); and, Area 7 (9,150 ft², 10 floor, 2 perimeter).

The majority (approximately 80 percent) of all confirmatory samples collected were analyzed for the three target analytes, arsenic, mercury, and zinc using EPA Method SW-846/6010B. The remainder of the confirmatory samples (approximately 20 percent) were analyzed for 26 TAL metals via the same method. Additionally, approximately 20 percent of the collected soil samples were also analyzed to quantify 17 TCL PAHs concentrations.

A summary of the final confirmational soil sample results is presented in Table 6-6 for metals and the 17 PAH compounds characterized during the TCRA. Generally these data indicate that the TCRA was effective in alleviating the potential threat posed by these contaminants at the site as a result of the action. The TCRA data indicate that the majority of the remaining PAHs concentrations present at the site are reduced to levels below TAGM cleanup objectives. Exceptions to this general rule are noted for dibenz(a,h)anthracene, benzo(a)anthracene, and benzo(a)pyrene, which still exhibit sporadic detections that exceed NYSDEC's TAGM cleanup objectives. However, even for these three PAHs, the maximum concentrations found are reduced by a factor of 10 to 20 from what was observed in the data collected during the ESI. The maximum concentrations detected in confirmatory sampling for these three compounds, respectively, were 35, 290, and 320 g/Kg (versus 840, 5200, and 3700 g/Kg in the ESI). Total concentration measured for total carcinogenic PAHs is considerably lower than the 10 mg/Kg (i.e., ppm) total threshold recommended for soil at SEAD-26.

Confirmational data also indicated that that the overall concentrations of metals found at SEAD-50/54 were decreased on a site-wide basis. A summary of the site-wide and individual excavation area averages are presented in **Table 6-7**. Based on the analysis of site-wide averages, only the average concentration measured for thallium (i.e., 2.82 mg/Kg) was found to exceed its TAGM cleanup objective level. The average concentrations for all other metals detected in confirmational samples were less than the TAGM cleanup objectives. However, the confirmational data did indicate that isolated spots continued to exist where concentrations of metals, including the three primary metals drivers (arsenic, mercury, and zinc) were present at levels exceeding the TAGM cleanup goals.

Statistical Analysis of Confirmation Data

Based on the overall TCRA results for metals (i.e., generally the site-wide averages showed that the site's cleanup objective had been achieved), the Army requested a determination from the EPA and the NYSDEC regarding whether its effort under the TCRA was complete. In response to this request, a statistical analysis was performed on the confirmatory samples by the EPA National Exposure Research Laboratory (NERL) on the results obtained during the TCRA compared to the results of the SEDA-wide background soil dataset. NERL's stated objective of the analysis was to determine if contaminant concentrations found at SEAD-50/54 after the removal action were comparable to Depot background concentrations. The NERL used 2 statistical tests (95% UTLs and the 2 sample non-parametric Mann-Whitney test) to test the comparability of the SEAD-50/54 data with the Depot background dataset and concluded that "contaminant concentrations for arsenic, mercury, and zinc at the SEAD-50/54 Site (after final excavation) are not consistent with the background level contaminant concentrations."

At the subsequent request of the Army, Parsons conducted a review of the NERL's statistical analysis procedures and conclusions, and prepared a memo to SEDA, dated January 21, 2004, concluding that NERL's analysis was flawed, and, as a result, their conclusions were in error. In support of its findings, Parsons highlighted the Army's stated goal for the time-critical removal action at SEAD-50/54 which was presented in the "Action Memorandum and Decision Document, Time-Critical Removal Actions, Four Metals Sites (SEADs 24, 50/54, & 67), *Final*" (Parsons, August 2002) and was:

"The objectives of a removal action are to comply with ARARs and reduce the overall threat to human health and the environment to an acceptable level at the site. Therefore, to reduce the threat that appears to exist near the Tank Farm, the Army is proposing to conduct an action that focuses on the removal of soil that has been impacted by asbestos, arsenic, mercury, and polynuclear aromatic hydrocarbons at elevated concentrations. Specifically, the Army is proposing to address shallow soil contamination (i.e., soil in top 6 inches) that has been identified at five locations within the Tank Farm, as well as within two lengths of the drainage ditches that surround the Tank Farm."

Parsons argued that the work completed at SEAD-50/54 achieved these results. Specifically, with respect to the identified asbestos issue, the Army developed data as part of the removal action that indicated that the suspected localized detection of the Asbestos identified at SEAD-50/54 during earlier work was no longer present based on additional sampling and analysis completed as part of the overall time-critical

removal action. These data were reported in the Completion Report that was submitted by Weston Solutions, Inc. in December 2003.

Furthermore, Parsons indicated that the potential threat resulting from potential exposure to arsenic and mercury at the Site had been greatly reduced. Initial concentration measured for arsenic in the shallow soils at the Site ranged upwards to 151 mg/Kg whereas the highest concentrations detected in the soil after the removal action was performed was 41.9 mg/Kg. Similarly, 20 percent of the samples collected and analyzed during the ESI exceeded the Depot-specific soil cleanup objective and the maximum concentration determined for arsenic (i.e., 21.5 mg/Kg) in background samples before the work was performed whereas after the removal of soil, fewer than 10 percent of all samples characterized for arsenic (425 total) contained concentrations that exceeded the Depot-specific cleanup objective and only 2 of 425 sample results exhibited concentrations above the maximum concentration found for arsenic in the background data set. Finally, after the removal action, the Site-wide average concentration of arsenic determined from the analysis of all 425 samples was 6.2 mg/Kg which compared very favorably with the Depot-wide background average concentration for arsenic of 5.2 mg/Kg, and is greatly reduced from the prior average Site concentration determined during the ESI which was 20.9 mg/Kg.

Similar reductions were observed for mercury, where only two out of 419 total samples had concentrations that exceeded the State's recommended soil clean up level of 0.1 mg/Kg or the Depot-wide maximum mercury concentration of 0.13 mg/Kg. The overall site average concentration determined for mercury after the removal action is 0.047 mg/Kg, which again compared favorably to the Depot-wide background average of 0.038 mg/Kg.

With reference to the PAH compounds identified, the sampling results provided in the Completion Report indicate that there was a large reduction (at least a factor of 10 fold) for each of the maximum concentrations of carcinogenic PAHs previously detected at the site, and that the total concentration measured for total carcinogenic PAHs was considerably lower than the 10 mg/Kg (i.e., ppm) total threshold recommended for soil at SEAD-26.

Finally, Parsons highlighted certain additional points about the statistical evaluation that was performed by NERL personnel. NERL indicated that it had conducted the analysis in accordance with procedures described in two guidance documents, identified as EPA (1989) which is entitled "Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities Interim Final Guidance" (EPA/530-SW-89-026) and the Addendum to Interim Final Guidance (EPA, 1992). Within the analysis report, EPA NERL stated:

"It is observed that arsenic dataset consists of an outlier, 21.5 ppm. The 95% UTL and the 95% UPL for arsenic have been computed with and without the outlier."

And additionally:

"For example, for arsenic, the 95% UTL=8.0 ppm (instead of the maximum value= 21.5 ppm which may represent an outlier) can be used as the background threshold value. An exceedance of 8.0 ppm by a site arsenic concentration from an area of concern may be considered as an

indication of contamination possibly requiring further remediation action. It is noted that there are several site observations from the final excavation (from the final 6" lift) which exceed the 95% UTLs as listed in Table 1 suggesting that possible contamination due to site activities may still exist at the SEAD50/54 Site.”

Thus, NERL said that they had removed one piece of data from the background data set to further substantiate their claim that the Depot-wide background and the Site-specific confirmational analyses were different. Parsons countered this analysis methodology and indicated that EPA’s own guidance, as stated in the 1992 reference, specifically warned against the removal of statistical outliers until a specific reason for the outlier could be determined. Parsons indicated that this had not been done, so the indicated data value, in accordance with EPA guidance, should be treated as a true, but extreme, value and a member of the Depot-wide data set.

Parsons also indicated that NERL had not indicated within its statistical analysis that even if all of the noted arsenic exceedances of recommended soil cleanup levels were removed from the Site-specific data set and replaced with values equivalent to either the Site-wide average value or a value that is just below the recommended soil cleanup level, the comparison of the data sets would still indicate that the Site-wide data set was not consistent with the Depot-wide background data set. Thus, in either situation, Site-wide data that was fully compliant with the stated soil cleanup level objective defined for the Site would still be statistically different from the background data set. Given this information, Parsons questioned whether any Site-wide data set from SEAD-50/54 could ever be judged statistically comparable to the Depot-wide data set.

Parsons concluded that the TCRA completed at SEAD-50/54 achieved the results set out and no further action was warranted for SEAD-50/54. The EPA and NYSDEC accepted the review of the statistical analysis performed, and concluded that the stated goals of the TCRA had been met (NYSDEC, 2003; EPA, 2004).

7.0 CURRENT AND POTENTIAL FUTURE SITE AND RESOURCE USES

In accordance with the requirements of the BRAC process, the Seneca County Board of Supervisors established the Seneca Army Depot Local Redevelopment Authority (LRA) in October 1995. The primary responsibility assigned to the LRA was to plan and oversee the redevelopment of the Depot. The Reuse Plan and Implementation Strategy for Seneca Army Depot was adopted by the LRA and approved by the Seneca County Board of Supervisors on October 22, 1996. Under this plan and subsequent amendment, areas within the Depot were classified according to their most likely future use. These areas currently include:

- housing;
- institutional;
- planned industrial office development;
- warehousing;
- conservation/recreational land;
- an area designated for a future prison;
- an area for an airfield, special events, institutional, and training; and
- an area to be transferred from one federal entity to another (i.e., an area for the existing navigational LORAN transmitter).

The future land use of SEAD-50/54 assigned by the LRA was initially identified as warehousing (**Figure 7-1**).

8.0 SUMMARY OF SITE RISKS

The Army has selected No Further Action as the remedy for the SEAD-50/54 addressed in this ROD. This determination is based on the Army's determination that these sites do not pose a significant threat to human health or the environment. This determination is based on the following findings and conclusions:

All tanks have been removed.

An ESI conducted in 1993 showed soil contamination, specifically metals.

A TCRA was performed in response to the ESI results and recommendations, which included excavation of soils where high metal concentrations had previously been shown to exist; therefore, soils that may have posed a potential risk have been removed from the site.

Post-excavation confirmatory samples indicate that the stated goals of the TCRA, which were to reduce the overall threat to human health and the environment to an acceptable level at the site, have been met and no further action is necessary.

NYSDEC and EPA concurred that the goals of the TCRA were achieved.

SELECTED REMEDY

Based on the findings of the investigations completed for the sites, the Army and the EPA have selected No Further Action as the remedy for the SWMUs SEAD-50/54. This determination is based on the Army's determination that these sites do not pose a significant threat to human health or the environment.