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June 10, 2009

Mr. John Hill
U. S. Air Force Center for Engineering and the Environmental
HQ AFCEE/IWP
3300 Sydney Brooks
Brooks City-Base, TX 78235-5112

SUBJECT: Draft Record of Decision for the Old Construction Debris Landfill (SEAD-11) at Seneca Army Depot Activity; Contract FA8903-04-D-8675, Delivery Order 0031, CDRL A001C

Dear Mr. Hill:

Parsons Infrastructure & Technology Group Inc. (Parsons) is pleased to submit the Draft Record of Decision for the Old Construction Debris Landfill (SEAD-11) at the Seneca Army Depot Activity (SEDA) in Seneca County, New York.

This work was performed in accordance with the Scope of Work (SOW) for Contract No. FA8903-04-D-8675, Task Order No. 0031.

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

Sincerely,

Todd Heino, P.E.
Project Manager

Enclosures

cc: J. Chavez, AFCEE
AFCEE CDL (letter only)
S. Absolom, SEDA
K. Hoddinott, USACHPPM
R. Walton, USAEC
R. Battaglia, USACE, NY District
T. Battaglia, USACE, NY District

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June 10, 2009

Mr. Julio Vazquez
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.
New York State Department of Environmental Conservation (NYSDEC)
Division of Environmental Remediation
Remedial Bureau A, Section C
625 Broadway
Albany, NY 12233-7015

Mr. Mark Sergott
New York State Department of Health
Bureau of Environmental Exposure Investigation, Room 300
547 River Street, Flanigan Square
Troy, NY 12180

SUBJECT: Draft Record of Decision for the Old Construction Debris Landfill (SEAD-11) at Seneca Army Depot Activity, Romulus, NY; EPA Site ID# NY0213820830 and NY Site ID# 8-50-006

Dear Mr. Vazquez/Mr. Gupta/Mr. Sergott:

Parsons Infrastructure & Technology Group Inc. (Parsons) is pleased to submit the Draft Record of Decision for the Old Construction Debris Landfill (SEAD-11) located at the Seneca Army Depot Activity (SEDA) in Seneca County, New York (EPA Site ID# NY0213820830 and NY Site ID# 8-50-006).

An electronic copy of the complete Record of Decision is enclosed with this submittal.

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

Enclosures

cc: J. Chavez, AFCEE
S. Absolom, SEDA
R. Walton, USAEC
T. Battaglia, USACE, NY District
AFCEE CDL (letter only)
K. Hoddinott, USACHPPM
R. Battaglia, USACE, NY District
M. Heaney, TechLaw

US Army Corps of Engineers

Air Force Center for Engineering and the Environment

Seneca Army Depot Activity
Romulus, New York

DRAFT
RECORD OF DECISION

FOR THE OLD CONSTRUCTION DEBRIS LANDFILL (SEAD-11)
SENECA ARMY DEPOT ACTIVITY

AFCEE CONTRACT NO. FA8903-04-D-8675
TASK ORDER NO. 0031
CDRL A001C

EPA SITE ID# NY0213820830
NY SITE ID# 8-50-006

PARSONS
JUNE 2009

DRAFT
RECORD OF DECISION

FOR

THE OLD CONSTRUCTION DEBRIS LANDFILL (SEAD-11)

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared for:

SENECA ARMY DEPOT ACTIVITY
5786 STATE ROUTE 96
ROMULUS, NEW YORK 14541

and

AIR FORCE CENTER FOR ENGINEERING AND THE ENVIRONMENT
3300 SIDNEY BROOKS, BUILDING 532
BROOKS CITY-BASE, TX 78235-5122

Prepared By:

PARSONS
150 Federal Street
Boston, Massachusetts 02110

Contract Number: FA8903-04-D-8675
Task Order: 0031
CDRL: A001C
EPA Site ID: NY0213820830; NY Site ID: 8-50-006 **June 2009**

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ACRONYMS AND ABBREVIATIONS

AOC(s)	Area(s) of Concern
ARAR	Applicable or Relevant and Appropriate Requirement
AWQS	Ambient Water Quality Standard
BCT	Base Clean-up Team
bgs	below ground surface or below grade surface
BRA	Baseline Risk Assessment
BRAC	Base Realignment and Closure
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	Contaminant of Concern
COPC	Contaminants of Potential Concern
DoD	Department of Defense
EBS	Environmental Baseline Survey
ECL	Environmental Conservation Law
EPA	U.S. Environmental Protection Agency
ESI	Expanded Site Investigation
FFA	Federal Facilities Agreement
FS	Feasibility Study
ft.	foot or feet (dependent on context)
GA	NYSDEC groundwater classification for a source that is suitable for drinking water
HI(s)	Hazard Index (Indices)
LORAN	**LO**ng **R**ange **A**id to **N**avigation
LRA	Local Redevelopment Authority
LUC(s)	Land Use Control(s)
MCL	Maximum Contaminant Level
mg	milligrams
mg/kg	milligrams per kilogram

ACRONYMS AND ABBREVIATIONS (continued)

NCP	National Contingency Plan or National Oil and Hazardous Substances Pollution Contingency Plan
NGVD	National Geodetic Vertical Data
NPL	National Priorities List
NYCRR	New York Code of Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OM&M	Operation, Maintenance, and Monitoring
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyls
PRG	Preliminary Remediation Goal
PVC	Polyvinyl Chloride
RAB	Restoration Advisory Board
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
ROD	Record of Decision
SCIDA	Seneca County Industrial Development Agency
SCO(s)	Soil Cleanup Objective(s)
SEAD	Acronym for the Seneca Army Depot used to designate SWMU numbers
SEDA	Seneca Army Depot Activity
SLERA	Screening Level Ecological Risk Assessment
SVOC(s)	Semivolatile Organic Compound(s)
SWMU	Solid Waste Management Unit
TBC	To Be Considered
TCLP	Toxic Characteristic Leaching Procedure
TPH	Total Petroleum Hydrocarbons
TRC	Technical Review Committee
TSDF	Treatment, Storage and Disposal Facility
UCL	Upper Confidence Limit
µg/L	micrograms per liter
VOC(s)	Volatile Organic Compound(s)

REFERENCES

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New York State Department of Environmental Conservation (NYSDEC). 1993 with 1998 and 1999 updates. Technical Guidance for Screening Contaminated Sediments.

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Title 40 Code of Federal Regulations, Part 261, Identification and Listing of Hazardous Waste.

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USACE. 1998. U.S. Department of Defense, Base Realignment and Closure, Ordnance and Explosives, Archives Search Report, Findings, Seneca Army Depot, Romulus, Seneca County, New York, prepared by US Army Corps of Engineers (USACE), St. Louis District. December.

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1.0 DECLARATION OF THE RECORD OF DECISION

Name and Location of Areas of Concern (AOCs)

The Old Construction Debris Landfill (SEAD-11)
Seneca Army Depot Activity
5786 State Route 96
Romulus, New York 14541
EPA Site ID: NY0213820830; NY Site ID: 8-50-006

Statement of Basis and Purpose

This Record of Decision (ROD) documents the U.S. Army's (Army's) and the U.S. Environmental Protection Agency's (EPA's) selection of a remedy for the Old Construction Debris Landfill (SEAD-11) located in the Seneca Army Depot Activity (SEDA), Seneca County, New York. The remedy selected for the Area of Concern (AOC) was chosen in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), 42 U.S.C. Section 9601, *et seq*. and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300. The Base Realignment and Closure (BRAC) Environmental Coordinator, the Chief of the Consolidations Branch, BRAC Division, and the Director of Emergency and the Director of the Remedial Response Division of EPA Region II have been delegated the authority to approve this ROD.

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, 5786 State Route 96, Building 123, Romulus, NY 14541. The Administrative Record Index identifies each of the items considered during the selection of the remedial actions. This index is included in **Appendix A**.

AOC Assessment

When necessary, a ROD should select a response action that protects human health and the environment from actual of threatened releases of hazardous substances in the environment, or from actual or threatened releases of pollutants or contaminants, which may present an imminent and substantial endangerment to public health or welfare. In those instances when there does not exist a need for additional response to protect human health and the environment, a No Further Action determination is appropriate.

The response action selected in this ROD for SEAD-11, the former Old Construction Debris Landfill, is No Further Action. No Further Action is required because the Army conducted an Interim Removal Action (IRA) during which waste materials previously buried at the SEAD-11 landfill site were excavated, evaluated, characterized, and shipped off-site for disposal at a licensed solid waste landfill. Subsequent to the IRA, confirmatory samples were collected and analyzed, and the results of these samples indicate that No Further Action is necessary at SEAD-11 to protect human health and the environment from actual or threatened releases of hazardous substances, pollutants, or contaminants.

Description of the Selected Remedy

The selected remedy for SEAD-11, the Old Construction Debris Landfill, is No Further Action (NFA). The selection of the remedy is based on the determination that the AOC does not pose a significant threat to human health or the environment.

State Concurrence

The New York State Department of Environmental Conservation (NYSDEC) forwarded to EPA a letter of concurrence regarding the selected remedy for SEAD-11. This letter of concurrence has been placed in **Appendix B**.

Declaration

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 are cost effective. The remedy uses permanent solutions. Insofar as contamination does not remain at the Solid Waste Management Unit (SWMU) at concentrations above levels that provide for unrestricted use and unlimited exposure, institutional controls and five-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 Date
BRAC Environmental Coordinator

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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:

_____ _____

JOSEPH J. VIGNALI Date
Chief, Consolidations Branch
BRAC Division

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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:

_____ _____

WALTER E. MUGDAN Date
Acting Director, Emergency and Remedial Response Division
U.S. Environmental Protection Agency, Region II

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2.0 SITE NAME, LOCATION, AND DESCRIPTION

The Seneca Army Depot Activity previously occupied approximately 10,600 acres of land in Seneca County in the Towns of Romulus and Varick, New York. The property was acquired by the United States Government in 1941, and was operated by the Department of the Army from that time until approximately September 2000 when the installation closed. Prior to the acquisition of the land and the construction of the Depot, the land was used for agriculture, farming, and residential purposes.

The location of SEDA is shown on **Figure 2-1**, which shows that SEDA is partially bordered by New York State Highway 96 on the east and New York State Highway 96A on the west. Abutting land surrounding the Depot is primarily used for agriculture, farming, and residential purposes, and Romulus center is located adjacent to the midway point of the SEDA's eastern border.

SEDA is located in an uplands area, which forms a divide that separates two of New York's Finger Lakes; Cayuga Lake on the east and Seneca Lake on the west. Ground surface elevations are generally higher along the eastern and southern borders of the Depot, and lower along the northern and western borders. The approximate elevation at the southeastern corner of SEDA is 740 feet (ft., National Geodetic Vertical Datum [NGVD] 1929), while the approximate elevation at the southwestern and northeastern corners is 650 ft. (NGVD, 1929). The approximate elevation at the southwestern corner of the Depot is 590 ft. (NGVD, 1929).

SEAD-11, the former Old Construction Debris Landfill, is located in the southwestern portion of the Seneca Army Depot Activity. The landfill reportedly operated in the 1940s and is currently vacant property. The future land use of this portion of the former Depot is defined by the Seneca County Industrial Development Agency (SCIDA), the owner of all non-Army retained property in this portion of the Depot, as Training. The focus of the training is further described as training for Homeland Security, training for first responders, and special warfare training.

The former Old Construction Debris Landfill measured approximately four acres in size. **Figure 2-2** presents the location of SEAD-11 and the predominant features. Prior to the interim removal action (IRA), which was conducted between October 2006 and January 2007, SEAD-11 was characterized as a terraced area of elevated topography that was located on the generally vacant, downwardly sloping terrain that predominated this portion of the Depot. The regional topography surrounding SEAD-11 slopes from higher ground on the east to lower elevations on the west.

SEAD-11 is bounded to the east by SEDA railroad tracks; beyond these tracks is an upward sloping field covered with grass and low brush. SEAD-4 is located east and southeast of the railroad tracks and SEAD-11. As shown in **Figure 2-2**, the AOC is bounded to the north by Indian Creek Road, beyond which is an open grass field which gives way to trees and low brush several hundred feet from the road. Indian Creek flows around the north and west sides of the former landfill. It approaches the vicinity of the former landfill from the north, before turning due west at a location roughly 2,000 feet north of the former landfill site. Subsequently, flow within Indian Creek curves from a westerly to a southerly path until it passes underneath West Patrol Road and Indian Creek Road at a point that is roughly 1,500 feet and topographically downgradient of the former landfill site.

A thicker fill layer was indicated in the southern and western portions of the landfill and resulted in steeper scarps on its southern and southwestern sides. The more gently sloping hills on the north and northwestern sides suggested a thinner layer of fill. The landfill had an average thickness of 4 feet. Assorted construction debris included metal, scrap wood, and several empty 55-gallon drums were observed on the southern and southwestern edges of the former landfill before the IRA. Upon completion of the IRA, the filled area overlying the native land was removed, and the associated waste and cover fill were transported off-site for disposal at a State licensed landfill.

Habitat and Ecological Community Characterization

The former Old Construction Debris Landfill is currently a vacant property. Prior to the IRA, the surface of the AOC was generally vegetated with brush, grasses, and weeds. There was prior evidence of debris on the surface of the former landfill, intermixed with the vegetation. Currently, the southern perimeter of the former landfill is vegetated with deciduous trees; the area further south of the AOC is covered with dense low brush. West of the AOC is an open, grass-covered field that ends at West Patrol Road and the perimeter security fence that constitutes the SEDA boundary. Since the IRA, a vegetative covering has been re-established over the top of AOC. There are no developed portions within SEAD-11.

The NYSDEC Natural Heritage Program Biological and Conservation Data System identifies no known occurrences of federal- or state-designated threatened or endangered plant or animal species within a 2-mile radius of the SEDA. No species of special concern are documented within the Depot property. No rare or endangered species have been observed during the SEAD-11 investigations.

Hydrology

Regionally, four distinct hydrologic units have been identified within Seneca County. These include two distinct shale formations, a series of limestone units, and unconsolidated beds of Pleistocene glacial drift. The geologic material that comprises the overburden is generally Pleistocene till.

Seismic profiles made for SEAD-11 prior to the IRA detected 4 to 17 feet of till overlying bedrock. The till material included layers of loose, unsaturated till, compact unsaturated till, and saturated till. The bedrock surface slopes downwards to the west following the slope of the surface topography. Groundwater flow at SEAD-11 in the till / weathered shale aquifer is generally to the west. The distribution of groundwater in the till portion of the aquifer is characterized by moist soil with coarse-grained lenses of water-saturated soil. Some more saturated zones were noted at the base of the upper, less dense till suggesting that in some locations the water may be perched on the upper surface of the dense till. Recharge of groundwater to the wells during sampling events was generally poor.

The primary direction of surface water flow throughout the SEDA is to the west towards Seneca Lake. Isolated portions of the Depot drain to the northeast (Seneca-Cayuga Canal) and east (Cayuga Lake). Primary surface water flow conduits to Seneca Lake are Reeder, Kendaia, Indian, and Silver Creeks, while Kendig Creek flows to the northeast and an unnamed creek flows away from the southeast corner of the Depot towards the east. Prior to the IRA, the surface of the landfill sloped to the northwest, back towards the intersection of Indian Creek Road and the railroad tracks. A historic plan, showing SEAD-11's topography before the IRA, is presented in **Figure 2-3**. Given the slope of the landfill cover prior to

the IRA, surface water flow over the former landfill probably was captured in the east-west trending swale that was located between the landfill surface and the southern edge of Indian Creek Road. Flow captured in the swale subsequently drained towards the west and Indian Creek. After the IRA, the area of the former landfill generally slopes to the west and is less steep than before. Surface water flowing over the AOC is now likely to flow towards the west, and some may pool and infiltrate into the ground in a localized low spot that is located near the southeastern corner of the former landfill. No mapped wetlands are present within SEAD-11.

3.0 SITE HISTORY AND ENFORCEMENT ACTIVITIES

The SEDA was owned by the U.S. Government and operated by the Army between 1941 and approximately 2000, when the SEDA military mission ceased. The SEDA's historic military mission included receipt, storage, distribution, maintenance, and demilitarization of conventional ammunition, explosives, and special weapons. In addition, administrative and plant operational facilities were also established in support of the Depot's mission. Waste management was integrated with the SEDA mission. Subsequent to 1976, management of waste materials produced from these operations was completed in accordance with the requirements of the Resource Conservation and Recovery Act (RCRA).

The EPA nominated the Depot for inclusion on the National Priorities List (NPL) as a Federal Facility on July 14, 1989; SEDA was officially listed on the NPL on August 30, 1990. Once the SEDA was listed, the Army, EPA, and NYSDEC identified 57 SWMUs where historic data or information suggested, or evidence existed to support, that hazardous substances or hazardous wastes had been handled and may have possibly been released and migrated into the environment. Each of these sites was identified in the "Federal Facilities Agreement" (EPA, Army, and NYSDEC, 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 Federal Facilities Agreement (FFA). The SEDA was a Generator and a Treatment, Storage and Disposal Facility (TSDF) and thus subject to regulation under RCRA. Under this permit system, corrective action is required at all SWMUs, if warranted.

Remedial goals are the same for CERCLA and RCRA; 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 the 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 conveyance of non-affected portions of the Depot to the surrounding community for their reuse for non-military purposes (e.g., industrial, municipal, and residential). To address employment and economic impacts associated with the SEDA's closure, 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 prepare a plan for redevelopment of the SEDA property. Following a comprehensive planning process, a "Reuse Plan and Implementation Strategy for Seneca Army Depot" was completed and adopted by the LRA on October 8, 1996. The Seneca County Board of Supervisors subsequently approved this Reuse Plan on October 22, 1996. The designated reuse of the Depot was revised in 2005 by SCIDA and the current future use model for land at the Depot is reflected in **Figure 3-1**. As shown in **Figure 3-1**, the current future land use for SEAD-11 is designated as Training.

Since 1995, more than 8,000 acres of the former Depot has been released to the SCIDA. An additional 250 acres of land at the Depot has been transferred to the U.S. Coast Guard for continued operation of a LORAN Station.

When the "SWMU Classification Report, *Final*" (Parsons, 1994) was issued, SEAD-11 was classified as a "Moderately High Priority AOC". An Expanded Site Investigation (ESI) was completed at SEAD-11 in 1993 and 1994, which included geophysics surveys, a gas soil survey, and sampling and analysis of surface and subsurface soil and groundwater. Based on the data collected during the ESI, an Additional Sampling Program was conducted in 2000 and 2001.

The Additional Sampling Program consisted of test pit and monitoring well installation, and soil and groundwater sampling and analysis. Based on the sampling results, the Army determined that the disposed materials placed at the landfill represented a potential human health and environmental risk due to the presence of volatile organic carbons (VOCs), carcinogenic polycyclic aromatic hydrocarbons (cPAHs), and metals which were found in the collected soil and groundwater samples.

Based on the results of the ESI and the Additional Sampling Program, the Army prepared the "Action Memorandum for Removal Action at SWMU SEAD-11, *Revised Final"* (Parsons, 2004). The Removal Action was conducted between October 2006 and January 2007, and the final report ("Final Construction Completion Report at Old Construction Debris Landfill (SEAD-11)") was issued in 2008. The IRA was conducted to remove the landfilled materials and associated contaminated soils to eliminate potential source materials that might have posed human health and environmental risks. The objectives of the IRA at SEAD-11 were documented in the Work Plan as follows:

- Remove the landfilled materials and contaminated soils to eliminate the potential threat that they represent to surrounding populations and to the environment;
- Remove the potential source of trichloroethylene (TCE) and metals detected in the groundwater immediately downgradient of the landfill, and
- Provide documentation to support a NFA finding for SEAD-11 upon completion of the IRA.

A total of 32,900 cubic yards (42,188 tons) of material was excavated during the IRA. The Army prepared and submitted a Construction Completion Report (CCR) to provide record documentation of the IRA construction activities and to provide documentation that all landfill material and soil exceeding cleanup goals were removed. The CCR concluded that no further action (NFA) was required at SEAD-11.

Within this ROD, the Army is recommending NFA at SEAD-11 as the final step in the CERCLA process required for the AOC. Since the listing of SEDA on the NPL in 1990, the Army has worked to develop and prepare the information and data needed to support determinations of what remedial actions are needed at each of the identified SWMUs to ensure that site conditions are protective of human health and the environment, comply with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practical, and are cost effective. Data and information developed and evaluated by the Army that serves as the basis for the final recommendations for SEAD-11

are summarized in this ROD. More complete presentation of the data and information that form the basis of the Army's final recommendation for SEAD-11 are provided in the CCR submitted per the requirements of the FFA listed in the Administrative Record provided as **Appendix A**. This ROD is submitted to fulfill the requirements of the FFA for the Seneca Army Depot Activity.

4.0 COMMUNITY PARTICIPATION

The Army relies on public input to ensure that the concerns of the community are considered in selecting an effective remedy for each Superfund site. To this end, the ESI Report, the Decision Document, the Action Memorandum, the Interim Removal Action Work Plan, the Construction Completion Report, the Proposed Plan, and other supporting documentation have been made available to the public during a public comment period, which began on May 8, 2009 and concluded on June 6, 2009. All findings of the previously conducted investigations at SEAD-11 are presented in the above-referenced documents. The Army's and EPA's preferred remedy and the basis for that preference was identified in the Proposed Plan. NYSDEC's concurrence with the preferred remedy is documented in **Appendix B** of this ROD. These documents were made available to the public at the SEDA repository (location provided below).

Seneca Army Depot Activity
Building 123
5786 State Route 96
Romulus, New York 14541-0009
(607) 869-1309
Hours: Mon – Thurs. 8:30 a.m. – 4:30 p.m.

A public meeting was held during the public comment period at the Seneca County Office Building on May 20, 2009 to present the conclusions of the Construction Completion Report, to elaborate further on the reasons for recommending the preferred remedy, and to receive public comments. No comments were received during the public meeting or during the public comment period. Efforts undertaken to date to promote community involvement in the remedy selection process are documented in the Responsiveness Summary and Public Comments Section of the ROD, **Appendix C**.

During the BRAC process there have been, and continue to be, periodic presentations to the Restoration Advisory Board (RAB) regarding the progress of SEAD-11 and other investigations related to the closure of SEDA. In addition, the SEDA RAB was established to facilitate the exchange of information between SEDA and the community. RAB members include representatives from the Army, EPA, NYSDEC, New York State Department of Health (NYSDOH), and the community.

5.0 SCOPE AND ROLE

The Army's ultimate goal for SEDA is to transfer the entire site to other private or public parties for beneficial reuse. Prior to the transfer of any property at the Depot, the Army is required to ensure that the property is suitable for release and reuse at a level that is consistent with its intended foreseeable future use. If information or evidence exists to indicate that hazardous substances may be present at any location slated for transfer, the Army is obligated to conduct investigations needed to verify the presence/absence of hazardous substances, and assess the potential risks that may exist due to the presence of hazardous substances at the site. These investigations and assessments are conducted under the oversight of, and subject to the review and concurrence of the EPA and the NYSDEC. The findings, results, and the conclusions of the investigations and assessments, and the subsequent land use decisions that are made based on the Army's investigations and assessments are also made available to the public for review and comment.

If the results and conclusions of the investigations and assessments of property at the SEDA indicate that unacceptable risks to human health or the environment exist due to the continuing presence of hazardous substances, the Army is obligated to propose, design, implement, monitor, inspect, and report on the remedial actions used to eliminate, mitigate or control the threat. The remedial actions are also subject to review and approval by all parties.

Once the Army is able to demonstrate, and gain oversight agency concurrence, that a site is suitable for transfer, such transfer may be approved and allowed.

Based on the available data and information contained in the Administrative Record for SEAD-11, the former Old Construction Debris Landfill, the Army and the EPA have selected NFA as the remedy for SEAD-11. The selected remedy is based on the Army's and the EPA's determination that SEAD-11 does not pose a significant threat to human health or the environment

6.0 SUMMARY OF AOC CHARACTERISTICS

Due to the performance of the IRA at SEAD-11, environmental conditions previously identified for the soil were removed from the site and transported off-site to a licensed landfill. Information and data provided below describing results of historic site investigations conducted prior to 2007 are summarized to document the basis for the performance of the IRA. The purpose of the IRA was to remove the landfilled materials and contaminated soils to eliminate the potential threat that they represented to surrounding populations and to the environment; to remove the potential source of TCE and metals detected in the groundwater immediately downgradient of the landfill; and, to provide documentation to support a NFA finding for SEAD-11 upon completion of the IRA. The contaminants of potential concern (COPCs) identified at SEAD-11 included landfill material (e.g., drums and metal containers), volatile organic compounds (VOCs), cPAHs, and metals in soil. In addition, metals and VOCs were identified as COPCs in groundwater.

Pre-IRA site investigations included geophysical surveys, including seismic refraction, electromagnetic, and ground penetrating radar surveys, and four test pits were performed during the ESI to identify burial sites at SEAD-11. Four monitoring wells were installed. Soil (surface, subsurface), soil gas, and groundwater were collected and analyzed as part of the investigation. Additional soil and groundwater sampling, and test pitting operations were performed in 2000 and 2001 during the Additional Sampling Program. Ten test pits were excavated and three additional monitoring wells were installed during the field program. Two rounds of groundwater sampling were conducted in November 2000 and February 2001.

Pertinent information about the environmental conditions remaining at SEAD-11 are provided after the historic overview of the site prior to 2007.

6.1 Historic Data

Soil Gas Survey (1993-1994)

Soil gas samples were collected at 31 of 39 sample locations developed at the site during the ESI on a rough six line by six point, 100 foot grid-wise pattern. One additional point was set approximately 100 feet due east and upgradient to the landfill in the center of the eastern face, while the other two were advanced in the middle of the landfill to further define and delineate one of the identified soil gas anomalies.

Results of this survey identified two areas where elevated concentrations of VOCs, 1,2-dichloroethene (DCE), TCE, toluene, and ethylbenzene, were detected.

Soil – ESI (1993-1994) and Additional Sampling Program (2000-2001) Results

One soil boring was drilled at an upgradient location and three soil samples were collected from the soil boring. Four test pits were excavated to the base of the landfill debris and three samples were obtained from each test pit. Four monitoring wells were installed and one groundwater sample was collected from each well. Soil and groundwater samples were analyzed for Target Compound List (TCL) VOCs, semi-volatile

organic compounds (SVOCs), pesticides/polychlorinated biphenyls (PCBs), explosives, herbicides, and Target Analyte List (TAL) metals.

During the Additional Sampling Program, conducted in 2000 to investigate the geophysical anomalies detected during the ESI, ten test pits were excavated. The test pits were sampled twice during November 2000 and February 2001 and analyzed for VOCs and metals. As predicted by the EM in-phase response, much of the excavated material was metallic debris, including various scrap metal, metallic rods, and metallic webbing. In addition, crushed 55-gallon drums and other metal containers were found in the landfill. Although abundant metallic material was encountered, the dominant type of fill was nonmetallic, including soil, large concrete slabs and fragments, ash material, and asphalt. The predominant fill materials were construction debris (concrete, glass, and nails), dark brown soil, gravel, and boulders. The test pits dug above the soil gas anomalies did not identify sources of the observed soil gas concentration.

The results of the soil sampling completed during the ESI and the Additional Sampling Program indicate that soil at the site had been impacted above relevant cleanup goals by VOCs, cPAHs, and metals. Five nitroaromatics and three herbicides were detected in the soil, and the detected concentrations were all below the NYSDEC Technical and Administrative Guidance Memorandum (TAGM) #4046 criteria and EPA Region IX Preliminary Remediation Goals (PRGs) for residential soil. PCBs were not detected in any of the soil samples. Ten pesticides were detected, and one pesticide, 4,4'-DDT, exceeded the TAGM criteria.

Soil analytical results showed that two VOCs, acetone and TCE, were detected at concentrations above their respective TAGM criteria. Sixteen (16) SVOCs were found at concentrations above their TAGM values in the soil samples analyzed. Of the 24 metals reported in the soil samples analyzed, 23 of these were found in one or more samples at concentrations above their associated TAGM values. Soil concentrations of particular note in the soil at the landfill include TCE (up to 42 ppm) and lead (up to 7,210 ppm).

All of the soils located within the bounds of the Old Construction Debris Landfill at the time when the ESI or the Additional Sampling Program were performed were subsequently excavated from the site and removed during the IRA. Therefore, the results summarized above are provided only to document the conditions present prior to the IRA.

Groundwater –ESI (1993-1994) and Additional Sampling Program (2000-2001) Results

During the ESI, four monitoring wells (MW11-1 through MW11-4) were installed and one groundwater sample was collected from each well. Groundwater samples were analyzed for TCL VOCs, SVOCs, pesticides/PCBs, explosives, herbicides, and TAL metals.

Three additional monitoring wells, MW11-5 through MW11-7, were installed as part of the Additional Sampling Program. All seven wells (MW11-1 through MW11-7) were sampled in 2000 and again in 2001 and analyzed for TCL VOCs, SVOCs, pesticides/PCBs, explosives, and TAL metals. Results indicated groundwater at the site appears to have been impacted by metals and possibly VOCs. A summary of the groundwater results are presented in **Tables 6-5** and **6-6**. PCE and TCE were detected in groundwater samples at concentrations below their respective NYS Class GA standard. The results of the

groundwater sampling program at SEAD-11 indicate that aluminum, antimony, iron, manganese, sodium, and thallium were present in individual wells at concentrations above groundwater standard values; however, these metals were found at levels generally consistent with background concentrations historically observed at SEDA.

6.2 Current Conditions

Soil - Interim Removal Action (2006-2008) Results

Excavation of the landfill, conducted as part of the IRA, began on November 1, 2006 at the southern edge of the former landfill, and proceeded to the north. A total of 32,900 cubic yards (cy) of material were excavated from the landfill and a total of 42,188 tons of material, comprised of soil and debris, were hauled off-site and disposed at Ontario County Landfill.

Before initiating the IRA, the Army defined project-specific cleanup goals for targeted VOCs, cPAHs, and metals. A listing of the defined cleanup goals is provided as **Table 6-1** and this listing shows that NYSDEC TAGMs were set as the cleanup goals for targeted VOCs, a value of 10 parts per million (ppm) benzo(a)pyrene toxicity equivalents (BTE)[1] was set for the cPAHs' cleanup goal, and EPA Region IX Preliminary Remediation Goals (PRGs) for residential soil were set as the cleanup goal for metals, except for selected metals[2] where SEDA background soil concentrations exceeded the PRGs, respectively. The acceptable completion of the IRA was then assessed by the collection, analysis, and evaluation of excavation base and perimeter confirmatory soil sample results versus the pre-defined cleanup goals.

Eighty (80) final grid confirmatory samples and 38 final perimeter samples, in addition to the appropriate number of quality assurance and quality control (QA/QC) samples, were collected, analyzed for the targeted hazardous constituents (VOCs, cPAHs, and metals), and compared to the established cleanup goals. Confirmatory samples were collected at a frequency of one sample per every 2,500 square feet (sf) or less from the base of the excavation and one sample per every 50 linear feet (ft) or less along the perimeter. A summary of the final results of the confirmatory analyses is presented in **Table 6-2**. Data for the individual confirmatory samples is provided in **Appendix D**. The results displayed in **Table 6-2** indicate that with the exception of iron, all final confirmatory sample results were less than the defined cleanup goals. Two samples of soil exhibited iron levels in excess of the SEDA background level of 38,600 mg/Kg. Based on this comparison, the Army concluded that no further removal was needed, and that the pre-defined cleanup goals of the IRA had been achieved.

After completion of the IRA, NYSDEC and the EPA announced new guidelines for evaluating the acceptability of interim removal action and site cleanups. NYSDEC implemented the use of soil cleanup objectives (SCO) to replace TAGMs. The EPA implemented Regional Screening Levels (RSLs) to replace Region IX PRGs as guidelines for acceptable residual chemical concentrations. Therefore, subsequent to the completion of the IRA, the Army also compared the available analytical data from the

[1] The Benzo(a)pyrene Toxicity Equivalent (BTE) is a screening tool previously used by the NYSDEC to estimate the potential carcinogenic toxicity of seven specific PAH compounds at sites. A reference value of 10 mg/Kg (ppm) of BTE was established by the Army as the SEAD 11 clean up goal prior to the IRA. BTE is computed by summing the concentrations of benzo(a)pyrene and dibenzo(a,h)anthracene at full value; the concentrations of benzo(a)anthracene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene at one-tenth (0.1 times) their reported value; and, benzo(k)fluoranthene and chrysene at one-one hundredth (0.01 times) their reported value.

[2] SEDA specific maximum background concentrations were set as the cleanup goals for arsenic and iron.

soil confirmatory samples to NYSDEC Unrestricted Use SCOs[3] and to the EPA RSLs[4] for residential soil. The results of these comparisons are summarized in **Table 6-3**. The results of this comparison indicate that one VOC (acetone), seven cPAHs, and eight metals were found one or more times in individual samples at concentrations in excess of their respective NYSDEC Unrestricted Use SCO levels. Acetone, one cPAH compound [i.e., benzo(b)fluoranthene], and one metal (zinc) exhibited a 95th upper confidence limit of the arithmetic mean (95th UCL)[5] value that was in excess of the State's Unrestricted Use SCO value. Six cPAH compounds and one metal were found one or more times in individual samples at concentrations in excess of their respective EPA RSL. The 95th UCL value computed for five of the cPAH compounds and arsenic were above their respective RSL value.

Groundwater

Groundwater – Interim Removal Action (2006-2008) Results

Monitoring wells MW11-1 through MW11-7 were sampled once during the IRA to confirm that the groundwater has not been impacted since prior sampling events, and the groundwater is either meeting the GA standard or consistent with background concentrations. A summary of the groundwater data is presented in **Table 6-7**. Three VOCs (1,1,2-trichloro-1,2,2-trifluoroethane, tetrachloroethene, and trichloroethene) were detected below their respective groundwater action levels. Three metals (aluminum, iron, and manganese) were detected at concentrations above their respective groundwater action levels; however the maximum detection of each of the metals was significantly below their respective SEDA site-wide background concentrations, as shown below:

Parameter	Maximum Detection (µg/L)	Average / Max. SEDA Background (µg/L)
Aluminum	340	2,730 / 42,400
Iron	727	4,480 / 69,400
Manganese	341	224 / 1,120

[3] Title 6 NYCRR Part 375-6 Remedial Soil Program Cleanup Objectives, Table 375-6.8(a).

[4] Source: http://www.epa.gov/region09/superfund/prg/pdf/composite_sl_table_run_APRIL2009.pdf

[5] Confidence limits for the mean (Snedecor and Cochran, 1989) are an interval estimate for the mean. Interval estimates are often desirable because the estimate of the mean varies from sample to sample. Instead of a single estimate for the mean, a confidence interval generates a lower and upper limit for the mean. The interval estimate gives an indication of how much uncertainty there is in our estimate of the true mean. The narrower the interval, the more precise is our estimate. The 95th upper confidence limit is the highest estimate for the mean that is expected to exist with 95 percent confidence for a particular set of data.

7.0 SUMMARY OF SEAD-11 RISKS

A human health risk assessment was performed at SEAD-11 to estimate potential human health risks that remain at the AOC after the IRA. Results of the IRA confirmatory soil sampling, and the groundwater sampling performed in 2000 – 2001 (for SVOCs, pesticides/PCBs, herbicides and explosives) and post-IRA groundwater monitoring (for VOCs and metals) were used as the basis of the risk assessment.

The risk assessment was conducted in accordance with the EPA's "Risk Assessment Guidance for Superfund (RAGS)" and the supplemental guidance and updates to the RAGS. The human health risk estimates summarized in this section are based on reasonable maximum exposure (RME) scenarios. Risk assessment assumptions, findings, and conclusions are presented in detail in the SEAD-11 Post Remediation Risk Assessment Memorandum (Parsons, 2007), which is included as **Appendix E** to this ROD.

SEAD-11 is currently vacant property. The designated future use of the land in the AOC is Training, based on SCIDA's (2005) future land use plan. Under the Training scenario, potential current and future threats to three human receptors were estimated: current and future construction worker, future industrial worker, and current adolescent trespasser/future visitor (ages 11-16 yrs). In addition, potential threats to a future resident were also estimated to evaluate the Unrestricted Use scenario.

Exposure pathways evaluated for soil exposure by human receptors included inhalation of ambient dusts caused by soil resuspension, ingestion of soil, and dermal contact with soil. In addition, groundwater exposure pathways assessed included: intake of groundwater, inhalation of groundwater (for future residents only), and dermal contact with groundwater (for construction workers and residential receptors only).

Table 7-1 summarizes potential risks calculated for exposures to SEAD-11 soil and groundwater, respectively.

Risk Characterization Results for Receptors under Training Scenario

The potential cancer risks and non-cancer hazard indices (HIs) for the industrial worker and the adolescent trespasser are within the EPA limits. The cancer risk for the construction worker is within the EPA limit ($1x10^{-6}$ vs. $1x10^{-4}$), but the non-cancer HI for the construction worker is above the EPA limit of 1 (4E+00).

Dust inhalation, soil ingestion, and groundwater intake contribute approximately 80%, 14%, and 6%, respectively, to the construction worker's total non-cancer HI. The largest components of the construction worker's HI are hazards that are associated with inhalation of dusts (i.e., 3E+00), followed by the construction worker's ingestion of soil. Almost all (> 99.9%) of the non-cancer HI via inhalation of ambient air dust is caused by the presence of aluminum (~15%) and manganese (~85%) in the post-IRA on-site soils. **Table 7-2** compares SEAD-11 on-site, post-IRA aluminum and manganese soil concentrations to SEAD-11 upgradient soils.

As is shown, the SEAD-11 on-site post-IRA soil concentrations are comparable or less than the SEAD-11 upgradient concentrations reported for aluminum and manganese. Additionally, neither aluminum nor

manganese are present in SEAD-11 soil samples at levels that are above the State of New York Unrestricted Use SCOs or EPA RSLs. Further, the construction worker's HI derived for manganese is predicated on exposure to manganese dioxide, which is but one of the many forms in which manganese may be present in the soil. The inhalation reference dose (RfC) associated with manganese dioxide is 4,000 times lower than the American Conference of Governmental and Industrial Hygienist's (ACGIH's) threshold limit value[6] for manganese exposure in the workplace, and thus the HI resulting from the use of manganese dioxide's RfC is considered to represent a maximum or ceiling level for the HI that might exist at SEAD-11. Finally, the HI associated with the construction worker's exposure via inhalation is based on a 24 hour per day exposure for the duration of the work, as opposed to a more realistic exposure point time of between 8 and 10 hours per day. This is evidenced in the EPA Integrated Risk Information System (IRIS) summary of the derivation of the RfC for manganese:

> *"Conversion Factors and Assumptions: Roels et al., 1992: The LOAEL is derived from an occupational-lifetime integrated respirable dust (IRD) concentration of manganese dioxide (MnO2) (based on 8-hour TWA occupational exposure multiplied by individual work histories in years) expressed as mg manganese (Mn)/cu.m x years. The IRD concentrations ranged from 0.040 to 4.433 mg Mn/cu.m x years, with a geometric mean of 0.793 mg Mn/cu.m x years and a geometric standard deviation of 2.907. The geometric mean concentration (0.793 mg/cu.m x years) was divided by the average duration of MnO2 exposure (5.3 years) to obtain a LOAEL TWA of 0.15 mg/cu.m. The LOAEL refers to an extrarespiratory effect of particulate exposure and is based on an 8-hour TWA occupational exposure. MVho = 10 cu.m/day, MVh = 20 cu.m/day. LOAEL(HEC) = 0.15 mg/cu.m x (MVho/MVh) x 5 days/7 days = 0.05 mg/cu.m. "*

The assumption for occupational exposure setting is 10 m^3/day. The RfC for manganese was calculated from a value derived from an occupational setting to a value that represents continuous exposure setting by extending the exposure from 5 days to 7 days and from inhalation rate of 10 m^3/day to 20 m^3/day. The use of 10 m^3/day, which represents the occupational exposure setting, should be representative of the construction working scenario and training scenario. The use of 20 m^3/day (a default value presented in the "EPA 2002 Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites"), along with the RfC of 5E-05 mg/m^3, will overstate the potential risks. Therefore, the levels of aluminum and manganese remaining at SEAD-11 individually are not considered to represent a potential concern via inhalation.

Similarly, the presence of aluminum, arsenic, iron, manganese, and vanadium in the SEAD-11 post-IRA on-site soils contribute to the majority of the construction worker's non-cancer hazard index via soil ingestion, but again in each case levels found in the upgradient soils are comparable or higher than those left at SEAD-11.

If aluminum, arsenic, iron, manganese, and vanadium in SEAD-11 soil were not considered as COPCs for the risk assessment, the non-cancer hazard index for the construction worker is below the EPA limit of 1. Therefore, soils left on-site at SEAD-11 do not pose an undo level of risk to the likely future receptors (industrial worker, construction worker, and adolescent trespasser).

[6] The concentration of a substance to which most workers can be exposed without adverse effects.

Risk Characterization Results for Residential Receptors

The potential cancer risks for the adult resident and the child resident at SEAD-11 are $4x10^{-5}$ and $5x10^{-5}$, respectively, both below the EPA's limit for cancer risk (i.e., $1x10^{-4}$). The total life-time cancer risk for the resident (sum of cancer risk for the adult resident and the child resident) is $9x10^{-5}$, below the EPA limit.

The non-cancer hazard indices for the adult resident and child resident are 1 and 5, respectively, at or above the EPA threshold of 1. Groundwater intake is the predominant exposure pathway that contributes to the non-cancer hazard indices for the adult resident (55%) and the child resident (47%), respectively. Manganese and TCE in groundwater are the largest contributors (i.e., HQ≥0.1) to the total HI computed for the adult resident.

The elevated HI computed for manganese is associated with the maximum concentration detected at the AOC, and the only sample that was found to contain manganese at a level that exceeded the State's GA groundwater standard. The measured concentration of manganese in the groundwater is below the EPA's RSL for Tap Water. Manganese is frequently identified as a contaminant in the groundwater at all AOCs at the Depot, and is associated with the interaction of the shallow groundwater with the soils that are indigenous to the area. As is shown in **Table 7-3**, while manganese's exposure point concentration for SEAD-11 groundwater exceeds the upgradient concentration reported at the AOC, it is generally consistent with the well concentration that is located upgradient of SEAD-11.

Therefore, manganese is not considered to be a COC in SEAD-11 groundwater.

TCE in groundwater is also a significant component of the adult and child resident's overall elevated HI. The elevated HI results even though the maximum measured concentration for TCE is below the State's GA standard and the EPA's maximum contaminant limit (MCL) for drinking water.

For the child resident, potential affects of soil ingestion results in an elevated HI component of 2. The predominant risk contributors for this exposure pathway include aluminum, arsenic, iron, manganese, and vanadium, all with associated HQs greater than 0.1. As shown above in **Table 7-2** and as was previously discussed for the construction worker, the aluminum, arsenic, iron, manganese, and vanadium concentrations in SEAD-11 soil are consistent with the upgradient conditions; therefore, none of these metals were identified as COCs in SEAD-11 soil.

Potential effects associated with TCE in groundwater also result in a non-cancer hazard index equal to the EPA limit of 1 for the child resident. As is explained above for the adult resident, the level of TCE found in the groundwater at SEAD-11 is below State and Federal guidance values.

Based on the results of the risk assessment, it is the Army's position that NFA is needed at SEAD-11.

8.0 SELECTED REMEDY

The Army and the EPA have selected "No Further Action" as the final remedy for SEAD-11, the former Old Construction Debris Landfill. No Further Action is needed at SEAD-11 because the contents of the former landfill have been excavated and transported off-site for disposal at licensed state landfills. While the results of post-IRA sampling and analysis indicate that some residual concentrations of hazardous substances remain in the soil and groundwater at the site, the results of a risk assessment indicate that they are not present at levels that pose a significant risk to human health or the environment.

9.0 DOCUMENTATION OF SIGNIFICANT CHANGES

(Reserved).

10.0 STATE ROLE

The State of New York, through the New York State Department of Environmental Conservation (NYSDEC), has concurred with the selected remedies documented in this ROD. The NYSDEC Declaration of Concurrence is provided in **Appendix B** of this ROD.

TABLES

Table 6-1
Site-Specific Cleanup Goals for Soil
SEAD-11 Record of Decision
Seneca Army Depot Activity

		Cleanup Goals	Source
TCL Volatile Organic Compounds [1]			
Acetone	UG/KG	200	NYSDEC TAGMs
Methylene chloride	UG/KG	100	NYSDEC TAGMs
Tetrachloroethene	UG/KG	1,400	NYSDEC TAGMs
Trichloroethene	UG/KG	700	NYSDEC TAGMs
Total Carcinogenic PAHs[2]	MG/KG	10 ppm benzo(a)pyrene Toxicity Equivalence	NYSDEC BTE Value
TAL Metals[4]			
Aluminum	MG/KG	76,100	USEPA Region IX PRGs - residential
Antimony	MG/KG	31	USEPA Region IX PRGs - residential
Arsenic	MG/KG	21.5 [3]	USEPA Region IX PRGs - residential
Barium	MG/KG	5,370	USEPA Region IX PRGs - residential
Beryllium	MG/KG	150	USEPA Region IX PRGs - residential
Cadmium	MG/KG	37	USEPA Region IX PRGs - residential
Cobalt	MG/KG	903	USEPA Region IX PRGs - residential
Copper	MG/KG	3,130	USEPA Region IX PRGs - residential
Iron	MG/KG	38,600 [3]	USEPA Region IX PRGs - residential
Lead	MG/KG	400	USEPA Region IX PRGs - residential
Manganese	MG/KG	1,760	USEPA Region IX PRGs - residential
Mercury	MG/KG	23.0	USEPA Region IX PRGs - residential
Nickel	MG/KG	1,560	USEPA Region IX PRGs - residential
Selenium	MG/KG	390	USEPA Region IX PRGs - residential
Silver	MG/KG	390	USEPA Region IX PRGs - residential
Thallium	MG/KG	5.2	USEPA Region IX PRGs - residential
Vanadium	MG/KG	78.2	USEPA Region IX PRGs - residential
Zinc	MG/KG	23,500	USEPA Region IX PRGs - residential

Notes:

1. The cleanup goal for VOCs are NYSDEC Technical and Administrative Guidance Memorandum (TAGM) values (HWR-94-4046, Revised January 24, 1994.)
2. Carcinogenic PAHs include benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene.
3. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
4. Calcium, chromium, magnesium, potassium, and sodium were omitted from this table since a Region IX PRG value is not available.

Table 6-2
Summary of Final Confirmatory Soil Samples
versus Cleanup Goals
SEAD-11 Record of Decision
Seneca Army Depot Activity

Parameter	Units	Maximum Detect	95th UCL Value [1]	Frequency of Detection	Cleanup Goal Value [2]	Number of Exceedances	Number of Detects	Number of Analyses [3]
Volatile Organic Compounds								
Acetone	UG/KG	67	22	2%	200	0	2	106
Cis-1,2-Dichloroethene	UG/KG	2.0	2.0 [5]	1%	--	0	1	114
Dichlorodifluoromethane	UG/KG	2	2.1 [4,5]	4%	--	0	5	114
Methylene chloride	UG/KG	49	14	89%	100	0	103	114
Tetrachloroethene	UG/KG	2.0	2.0 [5]	2%	1,400	0	2	114
Trichloroethene	UG/KG	77	5.0	19%	700	0	22	114
Carcinogenic PAHs								
BTE (calculated)	MG/KG	8.1	1.2	100%	10	0	119	119
Metals								
Aluminum	MG/KG	17,500	11,132	100%	76,100	0	114	114
Antimony	MG/KG	11.3	1.4	18%	31	0	21	114
Arsenic	MG/KG	19.5	5.8	100%	21.5 [6]	0	114	114
Barium	MG/KG	248	89.1	100%	5,370	0	114	114
Beryllium	MG/KG	1.0	0.59	100%	150	0	114	114
Cadmium	MG/KG	2.5	0.42	94%	37	0	107	114
Calcium	MG/KG	216,000	31,196	100%	--	0	114	114
Chromium	MG/KG	44.5	17.4	100%	--	0	113	113
Cobalt	MG/KG	16.8	9.28	100%	903	0	114	114
Copper	MG/KG	131	24.7	100%	3,130	0	114	114
Iron	MG/KG	51,100	23,289	100%	38,600 [6]	2	114	114
Lead	MG/KG	400	54.3	100%	400	0	113	113
Magnesium	MG/KG	25,200 [4]	5,756	100%	--	0	114	114
Manganese	MG/KG	1,540	623	100%	1,760	0	114	114
Mercury	MG/KG	0.327	0.050	99%	23.0	0	113	114
Nickel	MG/KG	38.6	24.6	100%	1,560	0	114	114
Potassium	MG/KG	1,750	1,158	100%	--	0	114	114
Selenium	MG/KG	3.4	1.40	25%	390	0	28	114
Silver	MG/KG	2.2	0.30	5%	390	0	6	114
Sodium	MG/KG	164	58.9	75%	--	0	86	114
Thallium	MG/KG	2.1	1.0	25%	5.2	0	28	114
Vanadium	MG/KG	31.6	19.9	100%	78.2	0	114	114
Zinc	MG/KG	591	114	100%	23,500	0	114	114

NOTES:
-- = No cleanup goal or soil objective available
1. 95th Upper Confidence Limit was calculated from USEPA program, ProUCL Ver 3.00.2, http://www.epa.gov/esd/tsc/download.htm

2. The cleanup goal (CUG) values were based on the following criteria:
   a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM)
      HWR-94-4046, Revised January 24, 1994.
   b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
   c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
3. Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table.
4. The maximum detected concentration was obtained from the average of the sample and its duplicate.
5. The calculated 95th UCL value is greater than maximum value detected in samples, and therefore has been replaced with the maximum value.
6. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.

Table 6-3
Summary of Final Confirmatory Sample Results versus Guidance Values
SEAD-11 Record of Decision
Seneca Army Depot Activity

Parameter	Units	95th UCL Value	Maximum Value	Frequency of Detection	Number of Times Detected	Number of Samples Analyses	NYSDEC Unrestricted Use SCO	Number of Exceedances	Does 95th UCL Exceed Unrestricted Use SCO?	USEPA Regional Screening Levels	Numer of Exceedences	Does 95th UCL Exceed RSL
Acetone	UG/KG	67	67	2%	2	106	50	1	Yes	6.1E+07	0	No
Cis-1,2-Dichloroethene	UG/KG		2	1%	1	114	250	0	No	7.8E+05	0	No
Dichlorodifluoromethane	UG/KG		2	4%	5	114		0	--	1.9E+05	0	No
Methylene chloride	UG/KG		49	90%	103	114	50	0	No	1.1E+04	0	No
Tetrachloroethene	UG/KG		2	2%	2	114	1300	0	No	5.7E+02	0	No
Trichloroethene	UG/KG	5.1	77	19%	22	114	470	0	No	2.8E+03	0	No
Benzo(a)anthracene	UG/KG	730.1	4800	49%	58	119	1000	11	No	1.5E+02	33	Yes
Benzo(a)pyrene	UG/KG	505.8	4500	45%	54	119	1000	11	No	1.5E+01	54	Yes
Benzo(b)fluoranthene	UG/KG	1090	7400	48%	57	119	1000	17	Yes	1.5E+02	36	Yes
Benzo(k)fluoranthene	UG/KG	191.7	2100	19%	23	119	800	4	No	1.5E+03	2	No
Chrysene	UG/KG	550.7	5500	47%	56	119	1000	12	No	1.5E+04	0	No
Dibenz(a,h)anthracene	UG/KG	164.5	850	30%	36	119	330	7	No	1.5E+01	34	Yes
Indeno(1,2,3-cd)pyrene	UG/KG	337.7	2800	42%	50	119	500	15	No	1.5E+02	27	Yes
BTE (calculated)	MG/KG		6.6	100%	119	119		0	--		0	--
Aluminum	MG/KG		17500	100%	114	114		0	--	7.7E+04	0	No
Antimony	MG/KG		11.3	18%	21	114		0	--	3.1E+01	0	No
Arsenic	MG/KG	5.8	19.5	100%	114	114	13	1	No	3.9E-01	114	Yes
Barium	MG/KG		248	100%	114	114	350	0	No	1.5E+04	0	No
Beryllium	MG/KG		1	100%	114	114	7.2	0	No	1.6E+02	0	No
Cadmium	MG/KG		2.5	94%	107	114	2.5	0	No	7.0E+01	0	No
Calcium	MG/KG		216000	100%	114	114		0	--		0	--
Chromium	MG/KG	17.4	44.5	100%	113	113	30	2	No	1.2E+05	0	No
Cobalt	MG/KG		16.8	100%	114	114		0	--	2.3E+01	0	No
Copper	MG/KG	24.9	131	100%	114	114	50	3	No	3.1E+03	0	No
Iron	MG/KG		51100	100%	114	114		0	--	5.5E+04	0	No
Lead	MG/KG	54.3	400	100%	113	113	63	8	No	4.0E+02	0	No
Magnesium	MG/KG		25200	100%	114	114		0	--		0	--
Manganese	MG/KG		1540	100%	114	114	1600	0	No	1.8E+03	0	No
Mercury	MG/KG	0.05	0.327	99%	113	114	0.18	2	No	2.3E+01	0	No
Nickel	MG/KG	24.6	38.6	100%	114	114	30	6	No	1.6E+03	0	No
Potassium	MG/KG		1750	100%	114	114		0	--		0	--
Selenium	MG/KG		3.4	25%	28	114	3.9	0	No	3.9E+02	0	No
Silver	MG/KG	0.49	2.2	5%	6	114	2	1	No	3.9E+02	0	No
Sodium	MG/KG		164	75%	86	114		0	--		0	--
Thallium	MG/KG		2.1	25%	28	114		0	--	5.1E+00	0	No
Vanadium	MG/KG		31.6	100%	114	114		0	--	5.5E+02	0	No
Zinc	MG/KG	114.4	591	100%	114	114	109	20	Yes	2.3E+04	0	No

Table 6-4
Summary Statistics of Compounds Detected in Groundwater
November 2000
SEAD-11 Record of Decision
Seneca Army Depot Activity

PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	LOWEST GW STANDARD	APPLICABLE GW STANDARD1	NUMBER ABOVE STANDARD	NUMBER OF DETECTS	NUMBER OF ANALYSES
Volatile Organic Compounds								
Tetrachloroethene	UG/L	2	25%	5	GA	0	2	8
Trichloroethene	UG/L	2	25%	5	GA	0	2	8
Semivolatile Organic Compounds								
2,4,5-Trichlorophenol	UG/L	0.073	13%			0	1	8
2,4,6-Trichlorophenol	UG/L	0.098	13%			0	1	8
Butylbenzylphthalate	UG/L	0.16	25%			0	2	8
Dimethylphthalate	UG/L	3.3	38%			0	3	8
Pyrene	UG/L	0.082	13%			0	1	8
Pesticides/PCBs								
4,4'-DDT	UG/L	0.006	13%	0.2	GA	0	1	8
Metals								
Aluminum	UG/L	184	75%	50	MCL	5	6	8
Antimony	UG/L	8	13%	3	GA	1	1	8
Barium	UG/L	68.9	100%	1000	GA	0	8	8
Beryllium	UG/L	0.27	25%	4	MCL	0	2	8
Cadmium	UG/L	0.35	13%	5	GA	0	1	8
Calcium	UG/L	236000	100%			0	8	8
Cobalt	UG/L	1.8	13%			0	1	8
Copper	UG/L	19.2	25%	200	GA	0	2	8
Iron	UG/L	302	75%	300	GA	1	6	8
Magnesium	UG/L	41000	100%			0	8	8
Manganese	UG/L	772	100%	50	SEC	3	8	8
Nickel	UG/L	2.5	13%	100	GA	0	1	8
Potassium	UG/L	6750	100%			0	8	8
Sodium	UG/L	36800	100%	20000	GA	3	8	8
Zinc	UG/L	9.2	25%	5000	MCL	0	2	8

Notes:
1. GA = New York State GA Groundwater Standards
   MCL = Federal Maximum Contaminant Level
   SEC = Federal Secondary Drinking Water Regulation guidance values

Table 6-5
Summary Statistics of Compounds Detected in Groundwater
February 2001
SEAD-11 Record of Decision
Seneca Army Depot Activity

PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	LOWEST GW STANDARD	APPLICABLE GW STANDARD 1	NUMBER ABOVE STANDARD	NUMBER OF DETECTS	NUMBER OF ANALYSES
Volatile Organic Compounds								
Tetrachloroethene	UG/L	2	38%	5	GA	0	3	8
Trichloroethene	UG/L	2.2	38%	5	GA	0	3	8
Semivolatile Organic Compounds								
Di-n-octylphthalate	UG/L	0.072	25%			0	2	8
Metals								
Aluminum	UG/L	284	88%	50	MCL	5	7	8
Arsenic	UG/L	3.9	88%	5	MCL	0	7	8
Barium	UG/L	71.2	100%	1000	GA	0	8	8
Cadmium	UG/L	0.32	13%	5	GA	0	1	8
Calcium	UG/L	193000	100%			0	8	8
Chromium	UG/L	1.8	50%	50	GA	0	4	8
Copper	UG/L	2	25%	200	GA	0	2	8
Iron	UG/L	533	100%	300	GA	1	8	8
Lead	UG/L	2.1	13%	15	MCL	0	1	8
Magnesium	UG/L	35800	100%			0	8	8
Manganese	UG/L	294	100%	50	SEC	3	8	8
Nickel	UG/L	1.9	38%	100	GA	0	3	8
Potassium	UG/L	6500	100%			0	8	8
Silver	UG/L	1.6	50%	50	GA	0	4	8
Sodium	UG/L	28900	100%	20000	GA	2	8	8
Thallium	UG/L	4.2	50%	2	MCL	4	4	8
Vanadium	UG/L	1.3	13%			0	1	8
Zinc	UG/L	33.4	88%	5000	MCL	0	7	8

Notes:
1. GA = New York State GA Groundwater Standards
   MCL = Federal Maximum Contaminant Level
   SEC = Federal Secondary Drinking Water Regulation guidance values

Table 6-6
Summary of Post-IRA Groundwater Data at SEAD-11
SEAD-11 Record of Decision
Seneca Army Depot Activity

Facility								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
Location ID								MW11-1	MW11-2	MW11-3	MW11-4	MW11-5	MW11-6	MW11-6	MW11-7
Matrix								GW	GW	GW	GW	GW	GW	GW	GW
Sample ID								11RA20000	11RA20001	11RA20007	11RA20002	11RA20003	11RA20005	11RA20004	11RA20006
Sample Date								2/22/2007	2/21/2007	2/21/2007	2/20/2007	2/20/2007	2/21/2007	2/21/2007	2/21/2007
QC Code								SA	SA	SA	SA	SA	DU	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM
Sampling Round								1	1	1	1	1	1	1	1
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Action Level**	**Action Level Source 1**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Collected**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds																
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	1.8	13%	5	GA	0	1	8	1.8	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	UG/L	2.1	25%	5	GA	0	2	8	1 U	1 U	1 U	1 U	1 U	2.1	2	1 U
Trichloroethene	UG/L	3.2	38%	5	GA	0	3	8	1 U	1 U	1 U	1 U	1.4	3.2	3	1 U
Metals																
Aluminum	UG/L	340	13%	50	SEC	1	1	8	**340**	200 U	200 U	200 U	200 U	200 U	200 U	200 U
Barium	UG/L	68.6	100%	1000	GA	0	8	8	36.4	57.8	29.4	68.6	64.8	32	32	30.9
Calcium	UG/L	169000	100%			0	8	8	80300	102000	134000	134000	124000	140000	140000	169000
Chromium	UG/L	3.5	25%	50	GA	0	2	8	3.5 J	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.53 J
Cobalt	UG/L	2	25%			0	2	8	0.79 U	0.79 U	2 J	0.79 U	0.79 U	0.79 U	0.79 U	1.4 J
Copper	UG/L	2.2	13%	200	GA	0	1	8	2.2 J	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Iron	UG/L	727	88%	300	GA	3	7	8	**427**	85.8	**727**	17 U	59.7	33.6 J	58.8	**374**
Magnesium	UG/L	30300	100%			0	8	8	23800	22100	23100	21000	20700	23900	23900	30300
Manganese	UG/L	341	100%	300	GA	1	8	8	40.8	11.5	**341**	8.5	10.8	5.9	6.4	230
Nickel	UG/L	3.2	38%	100	GA	0	3	8	3.2 J	1.4 U	2 J	1.4 U	1.4 U	1.4 U	1.4 U	1.4 J
Potassium	UG/L	4520	100%			0	8	8	1880	1200	1210	1590	2270	4450	4520	2070
Sodium	UG/L	14400	100%	20000	GA	0	8	8	4410 J	14400	6540 J	8070 J	9190 J	6970 J	7050 J	7220 J
Vanadium	UG/L	1.6	13%			0	1	8	0.98 U	0.98 U	0.98 U	1.6 J	0.98 U	0.98 U	0.98 U	0.98 U
Zinc	UG/L	10.8	63%	5000	SEC	0	5	8	10.8	3.6 U	5.2 J	8.7 J	3.6 U	3.6 U	3.7 J	4.2 J

Note(s):
U = compound was not detected
J = the reported value is an estimated concentration

Shading indicates concentration above action level

1. GA = NYSDEC Class GA Groundwater Standard (TOGS 1.1.1, June 1998)
SEC = Secondary Drinking Water Regulations - Drinking Water Standards and Health Advisory (EPA 82-B-00-001)

Table 7-1
Calculation of Total Noncarcinogenic And Carcinogenic Risks
Reasonable Maximum Exposure (RME)
SEAD-11 Record of Decision
Seneca Army Depot Activity

RECEPTOR	EXPOSURE ROUTE	HAZARD INDEX	CANCER RISK
INDUSTRIAL WORKER	Inhalation of Dust in Ambient Air	3E-01	4E-07
	Ingestion of Soil	5E-01	3E-05
	Dermal Contact to Soil	4E-02	2E-05
	TOTAL RECEPTOR RISK (Nc & Car)	***8E-01***	***4E-05***
CONSTRUCTION WORKER	Inhalation of Dust in Ambient Air	2E+01	9E-07
	Ingestion of Soil	2E+00	4E-06
	Dermal Contact to Soil	6E-02	1E-06
	TOTAL RECEPTOR RISK (Nc & Car)	***2E+01***	***6E-06***
ADOLESCENT TRESPASSER	Inhalation of Dust in Ambient Air	2E-03	5E-10
	Ingestion of Soil	4E-02	4E-07
	Dermal Contact to Soil	2E-03	2E-07
	TOTAL RECEPTOR RISK (Nc & Car)	***4E-02***	***6E-07***
DAY CARE CENTER CHILD	Inhalation of Dust in Ambient Air	2E-03	5E-10
	Ingestion of Soil	4E+00	6E-05
	Dermal Contact to Soil	2E-01	2E-05
	TOTAL RECEPTOR RISK (Nc & Car)	***5E+00***	***8E-05***
RESIDENT (ADULT)	Inhalation of Dust in Ambient Air	4.23E-01	5.76E-07
	Ingestion of Soil	6.63E-01	3.78E-05
	Dermal Contact to Soil	3.32E-02	1.31E-05
	TOTAL RECEPTOR RISK (Nc & Car)	***1.12E+00***	***5.15E-05***
RESIDENT (CHILD)	Inhalation of Dust in Ambient Air	7.00E-01	2.39E-07
	Ingestion of Soil	6.19E+00	8.82E-05
	Dermal Contact to Soil	2.17E-01	2.14E-05
	TOTAL RECEPTOR RISK (Nc & Car)	***7.11E+00***	***1.10E-04***
RESIDENT (TOTAL)	Inhalation of Dust in Ambient Air		8.15E-07
	Ingestion of Soil		1.26E-04
	Dermal Contact to Soil		3.45E-05
	TOTAL RECEPTOR RISK (Nc & Car)		***1.61E-04***
TOTAL RECEPTOR CANCER RISK			**9.00E-05**

Nc - Noncarcinogenic
Car - Carcinogenic

Table 7-2
Comparison of SEAD-11 Metal Concentrations in Soil with Upgradient Concentrations
SEAD-11 Record of Decision
Seneca Army Depot Activity

COPC	Post-IRA SEAD-11 Soil Concentration (mg/Kg)			SEAD-11 Upgradient Maximum (mg/Kg)	SEAD-4 Upgradient Maximum (mg/Kg)
	Maximum	Average	95% UCL		
Aluminum	17,500	10,769	11,132	17,600	21,000
Arsenic	19.5	5.57	5.85	NA	21.5
Iron	51,100	22,456	23,305	28,300	37,900
Manganese	1,540	583	623	674	NA
Vanadium	32	19.25	19.9	31.8	31

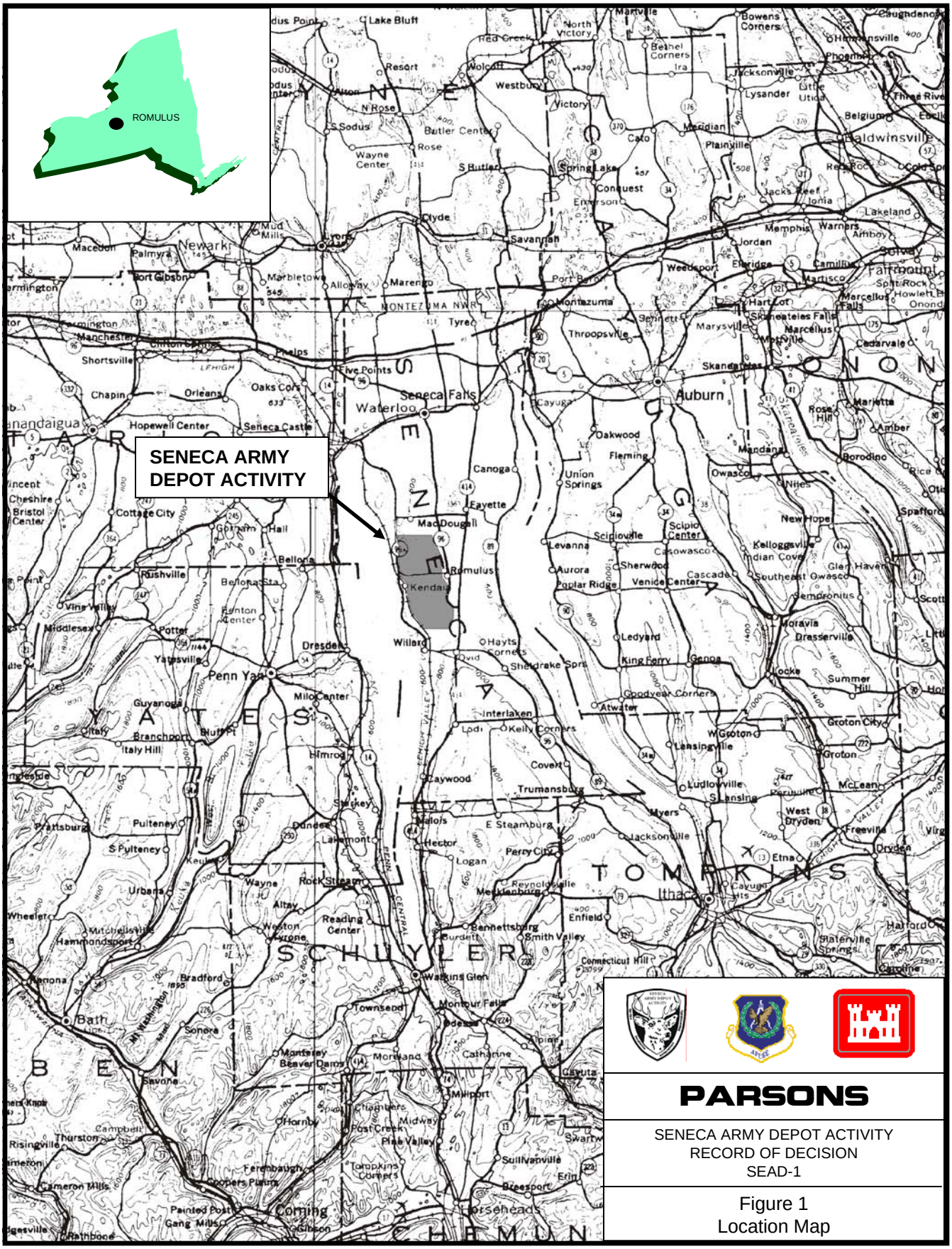
Notes:
1. 95% UCL based on normal distribution
2. Maximum detected concentration from SB11-3
3. Maximum detected concentration from SB4-1
NA - Not Available
UCL - upper confidence limit
mg/Kg - milligrams per kilogram

Table 7-3
Comparison of Manganese Concentration in SEAD-11 Groundwater with Upgradient Concentrations
SEAD-11 Record of Decision
Seneca Army Depot Activity

SEAD-11 Groundwater (Post-IRA Samples)	MW11-1 Maximum (Upgradient of SEAD-11)	MW4-1 Maximum (Upgradient of SEAD-4)
Maximum: 341 ug/L Average: 101.3 ug/L	47.7 ug/L	346 ug/L

Notes:
ug/L - micrograms per liter
IRA - Interim Removal Action

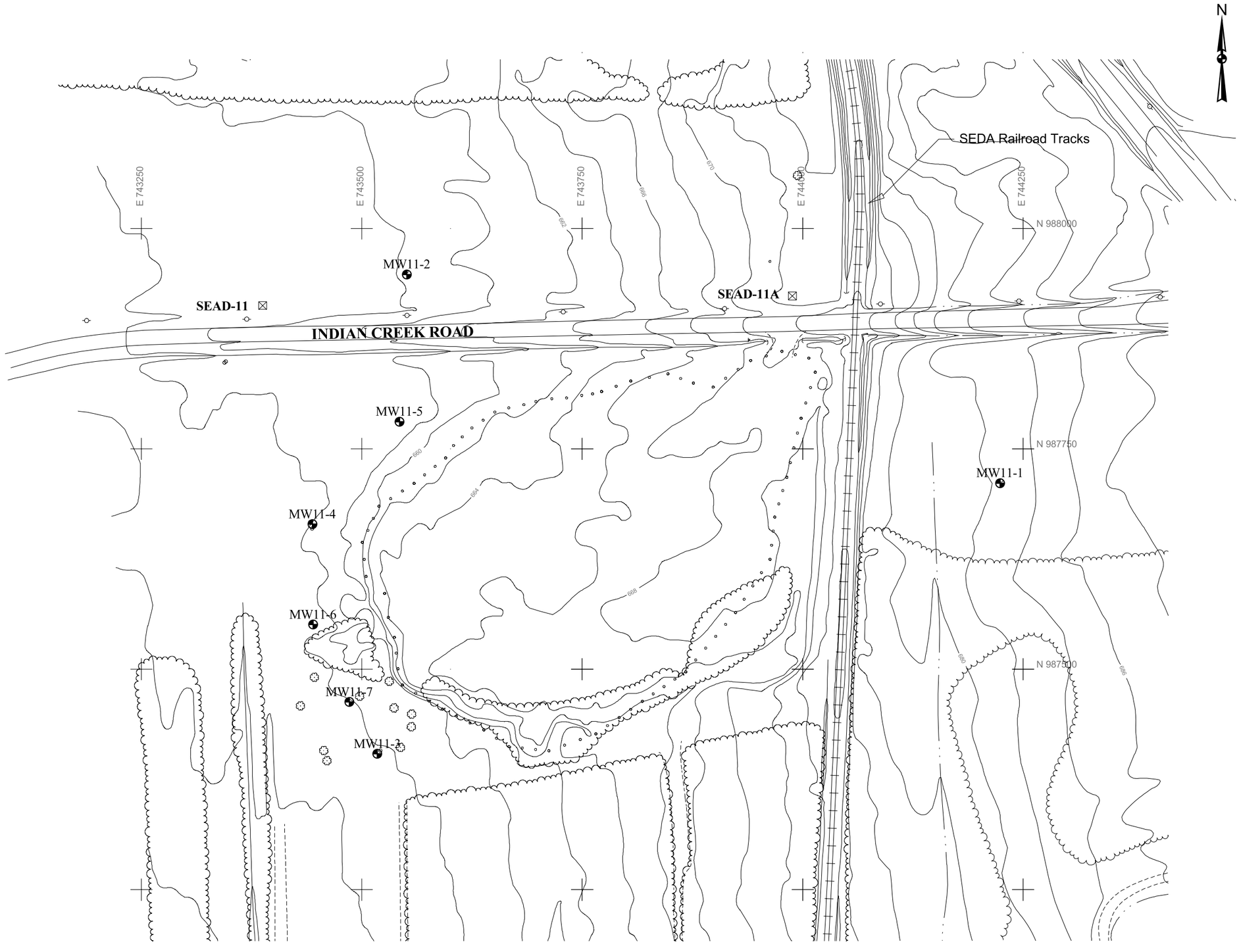
FIGURES



PARSONS

SENECA ARMY DEPOT ACTIVITY
RECORD OF DECISION
SEAD-1

Figure 1
Location Map



LEGEND

- RAILROAD TRACK
- EDGE OF WATER
- PROPERTY LINE
- ROAD
- FENCE
- 680 CONTOUR ELEVATION
- TREELINE
- SURVEY MONUMENT
- UTILITY POLE
- DECIDUOUS TREE
- LANDFILL EXTENT

MW11-1
682.33
MONITORING WELL WITH WATER TABLE ELEVATION

670
GROUNDWATER ELEVATION CONTOUR ARROW INDICATES DIRECTION OF FLOW

PARSONS

SENECA ARMY DEPOT

RECORD OF DECISION - SEAD-11

FIGURE 2-2
SEAD-11
Pre-Removal Action Condition

DATE: NOV 2008

o:\seneca\sead-11\sead11.apr\Pre Construction

LEGEND:

RAILROAD TRACKS
PROPERTY LINE
ROAD
650 POST EXCAVATION CONTOUR ELEVATION
TREELINE
FENCE
UTILITY POLE
SURVEY MONUMENT
EXTENT OF EXCAVATION
DECIDUOUS TREE
MW11-6 MONITORING WELL

NOTES:

1. ALL DISTURBED AREAS WERE SEEDED AND STABILIZED WITH STRAW MULCH TO PREVENT EROSION.

50 0 50 100
(feet)

PARSONS

CLIENT/PROJECT TITLE

SENECA ARMY DEPOT

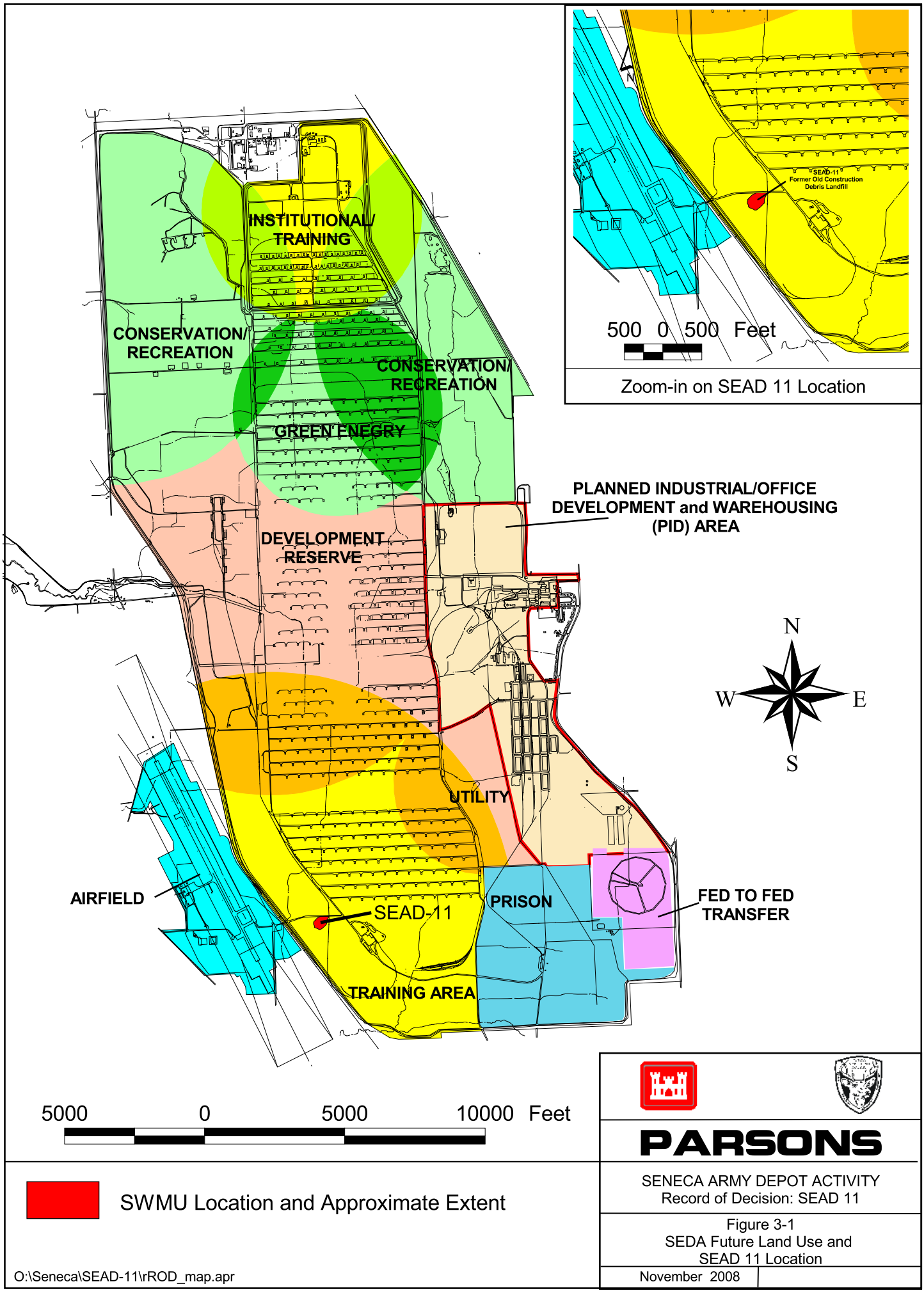
RECORD OF DECISION - SEAD-11

DEPT. ENVIRONMENTAL ENGINEERING | Dwg. No. 734543-01000

FIGURE 2-3
SEAD-11, Final Grading Plan

SCALE 1" = 100' | DATE MARCH 2007 | REV –

P:\PIT\Projects\Seneca PBC II\SEAD-11\Construction Completion Rpt\Final\Drawings\C-4.dwg



PARSONS

SENECA ARMY DEPOT ACTIVITY
Record of Decision: SEAD 11

Figure 3-1
SEDA Future Land Use and
SEAD 11 Location

November 2008

O:\Seneca\SEAD-11\rROD_map.apr

APPENDICES

NUMBER	TITLE
Appendix A:	Administrative Record
Appendix B:	State Letter of Concurrence
Appendix C:	Responsiveness Summary and Public Comments
Appendix D:	Final Confirmatory Soil Data from Interim Removal Action
Appendix E:	Risk Memo and EPA Comments

APPENDIX A

ADMINISTRATIVE RECORD

ADMINISTRATIVE RECORD

Old Construction Debris Landfill (SEAD-11)

OCDL-01-001 Data from the Additional Sampling Program Conducted at the Old Construction Debris Landfill (SEAD-11) at Seneca Army Depot Activity (SEDA), April 2001

OCDL-01-002 Cost Estimate Low Permeability Capping Alternative, October 2001

OCDL-01-003 Action Memorandum for Removal Action at SWMU SEAD-11, Seneca Army Depot Activity, (DRAFT), July 2001

OCDL-01-003 Action Memorandum for Removal Action at SWMU SEAD-11, Seneca Army Depot Activity, (DRAFT-FINAL), July 2002

OCDL-01-003 Final Action Memorandum for Removal Action at SWMU SEAD-11, Seneca Army Depot Activity, [CD], April 2003

OCDL-01-003 Revised Final Action Memorandum for Removal Action at SWMU SEAD-11, Seneca Army Depot Activity, [CD], June 2004

OCDL-01-004 Draft Interim Removal Action at Old Construction Debris Landfill (SEAD-11), Seneca Army Depot Activity PBC II, [CD], August 2006

OCDL-01-004 Final Interim Removal Action at Old Construction Debris Landfill (SEAD-11), Seneca Army Depot Activity PBC II, [CD], October 2006

OCDL-01-005 Draft Construction Completion Report at Old Construction Debris Landfill (SEAD-11), [CD], March 2007

OCDL-01-005 Final Construction Completion Report at Old Construction Debris Landfill (SEAD-11), [CD], February 2008

OCDL-03-001 Draft Proposed Plan, Old Construction Debris Landfill (SEAD-11), & CD, May 2008

SEAD-01-007 Engineering Evaluation/Cost Analysis (EE/CA) Approval Memorandum Construction Debris Landfill (SEAD-11) and Garbage Disposal Areas (SEAD-64A and SEAD-64D), December 1998

SEAD-01-008 SEAD-11, SEAD-64A, SEAD-64D Project Scoping Plan for Performing a CERCLA RI/FS at the Construction Debris Landfill (SEAD 11), Garbage Disposal Areas (SEAD 64A and 64D) (Draft-Final), February 1997

SEAD-01-008 SEAD-11, SEAD-64A, SEAD-64D Project Scoping Plan for Performing a CERCLA RI/FS at the Construction Debris Landfill (SEAD 11), Garbage Disposal Areas (SEAD 64A and 64D) (Final), September 1997

SEAD-01-009 Expanded Site Inspection Three Moderate Priority SWMUs - SEADs 11, 13, and 57 (Draft-Final), May 1995

SEAD-01-009 Expanded Site Inspection Three Moderate Priority SWMUs - SEADs 11, 13, and 57 (Final), December 1995

SEAD-01-020 Draft Contract-Specific Sampling and Analysis Plan, Remedial Actions at Seven Sites (SEADs-4, 11, 16, 17, 38, 70, and 121C), Seneca Army Depot Activity, [CD], July 2006

SEAD-01-020 Final Contract-Specific Sampling and Analysis Plan for Remedial Actions at Seven Sites (SEADs-4, 11, 16, 17, 38, 70, and 121C), Seneca Army Depot Activity, [CD], October 2006

SEAD-01-022 Project Safety Plan and Site-Specific Health and Safety Plan for Seneca Army Depot Activity PBC II, SEAD-4, SEAD-11, SEAD-16 (SEAD-001-R), SEAD-17 (SEAD-001-R), SEAD-38, SEAD-70, SEAD-121C, and Building Demolition, [CD], July 2006

SEAD-05-002 Decision Document for Removal Actions at SWMUs SEAD-11, SEAD-25, SEAD-26, SEAD-38, SEAD-39, SEAD-40, SEAD-41, Seneca Depot Activity (Draft Final), August 1995

Six Sites (SEADs-4, 11, 16, 17, 38, and 121C), Seneca Army Depot Activity PCB II, July 2006

APPENDIX B

LETTER OF CONCURRENCE

APPENDIX C

PUBLIC COMMENTS AND RESPONSIVENESS SUMMARY

PUBLIC COMMENTS AND RESPONSIVENESS SUMMARY

FORMER OLD CONSTRUCTION LANDFILL SITE, SEAD-11

SENECA ARMY DEPOT SUPERFUND SITE

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 Base Clean-up Team (BCT). 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 BCT 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 Base Clean-up Team (BCT). The BCT was comprised of several of the TRC members with the addition of additional Army and regulatory representatives. The BCT increased the frequency of the meetings to a monthly basis. Since the formation of the TRC and the BCT, the Army has met with the local community members on a regular basis and has discussed the finding of both the site investigations and the Interim Removal Action performed at SEAD-11. In addition, the proposed plan has been presented to the BCT.

SUMMARY OF COMMUNITY RELATIONS ACTIVITIES

The investigation reports, the Completion Report for the Interim Removal Action and the Proposed Plan for SEAD-11 were released to the public for comment. These documents were 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 public comment period on these documents was held from May 8, 2009 to June 6, 2009. The notice of availability for the above-referenced documents was published in the Finger Lake Times during this time period.

On May 20, 2009, the Army, the EPA and the NYSDEC conducted a public meeting at the Seneca County Board of Supervisors Room, located at the Seneca County Office Building in Waterloo, NY to inform local officials and interested citizens about the Superfund process, to review current and planned remedial activities at SEAD-11, 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 meeting. There is no official transcript since no comments were provided. There were also no written comments received by the Army from a private citizen during the public comment period.

APPENDIX D

FINAL CONFIRMATORY SOIL DATA FROM INTERIM REMOVAL ACTION

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLA501	11EXFLA601	11EXFLA701	11EXFLB301	11EXFLB301
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLA501	11EXFLA601	11EXFLA701	11EXFLB301	11EXFLB301V
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/6/2006	11/6/2006	11/6/2006	11/17/2006	11/22/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds												
1,1,1-Trichloroethane	UG/KG	0	0%	800	0	0	114	5 U	5 U	5 U		8 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	600	0	0	114	5 U	5 U	5 U		8 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U		8 U
1,1,2-Trichloroethane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U		8 U
1,1-Dichloroethane	UG/KG	0	0%	200	0	0	114	5 U	5 U	5 U		8 U
1,1-Dichloroethene	UG/KG	0	0%	400	0	0	114	5 U	5 U	5 U		8 U
1,2,3-Trichlorobenzene	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U		8 U
1,2,4-Trichlorobenzene	UG/KG	0	0%	3,400	0	0	114	5 U	5 U	5 U		8 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U		8 U
1,2-Dibromoethane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U		8 U
1,2-Dichlorobenzene	UG/KG	0	0%	7,900	0	0	114	5 U	5 U	5 U		8 U
1,2-Dichloroethane	UG/KG	0	0%	100	0	0	114	5 U	5 U	5 U		8 U
1,2-Dichloropropane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U		8 U
1,3-Dichlorobenzene	UG/KG	0	0%	1,600	0	0	114	5 U	5 U	5 U		8 U
1,4-Dichlorobenzene	UG/KG	0	0%	8,500	0	0	114	5 U	5 U	5 U		8 U
Acetone	UG/KG	67	2%	200	0	2	106	24 UJ	26 UJ	27 UJ		40 U
Benzene	UG/KG	0	0%	60	0	0	114	5 U	5 U	5 U		8 U
Bromochloromethane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U		8 U
Bromodichloromethane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U		8 U
Bromoform	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U		8 U
Carbon disulfide	UG/KG	0	0%	2,700	0	0	114	5 U	5 U	5 U		8 U
Carbon tetrachloride	UG/KG	0	0%	600	0	0	114	5 U	5 U	5 U		8 U
Chlorobenzene	UG/KG	0	0%	1,700	0	0	114	5 U	5 U	5 U		8 U
Chlorodibromomethane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U		8 U
Chloroethane	UG/KG	0	0%	1,900	0	0	114	10 U	10 U	11 U		16 U
Chloroform	UG/KG	0	0%	300	0	0	114	5 U	5 U	5 U		8 U
Cis-1,2-Dichloroethene	UG/KG	2	1%		NA	1	114	5 U	5 U	5 U		8 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U		8 U
Cyclohexane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U		8 U
Dichlorodifluoromethane	UG/KG	2.25 [1]	4%		NA	5	114	5 U	5 U	5 U		8 U
Ethyl benzene	UG/KG	0	0%	5,500	0	0	114	5 U	5 U	5 U		8 U
Isopropylbenzene	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U		8 U
Methyl Acetate	UG/KG	0	0%		NA	0	114	5 UJ	5 UJ	5 UJ		8 UJ
Methyl Tertbutyl Ether	UG/KG	0	0%		NA	0	114	5 UJ	5 UJ	5 UJ		8 UJ
Methyl bromide	UG/KG	0	0%		NA	0	89	10 UJ	10 UJ	11 UJ		16 UR
Methyl butyl ketone	UG/KG	0	0%		NA	0	114	24 U	26 U	27 U		40 U
Methyl chloride	UG/KG	0	0%		NA	0	114	10 U	10 U	11 U		16 U
Methyl cyclohexane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U		8 U
Methyl ethyl ketone	UG/KG	0	0%	300	0	0	114	24 U	26 U	27 U		40 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLA501	11EXFLA601	11EXFLA701	11EXFLB301	11EXFLB301
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLA501	11EXFLA601	11EXFLA701	11EXFLB301	11EXFLB301V
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/6/2006	11/6/2006	11/6/2006	11/17/2006	11/22/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Methyl isobutyl ketone	UG/KG	0	0%	1,000	0	0	114	24 U	26 U	27 U		40 U
Methylene chloride	UG/KG	49	89%	100	0	102	114	10 U	19 U	22 U		26 J
Styrene	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U		8 U
Tetrachloroethene	UG/KG	2	2%	1,400	0	2	114	5 U	2 J	2 J		8 U
Toluene	UG/KG	0	0%	1,500	0	0	114	5 U	5 U	5 U		8 U
Total Xylenes	UG/KG	0	0%	1,200	0	0	114	15 U	15 U	16 U		24 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	300	0	0	114	5 UJ	5 UJ	5 UJ		8 UJ
Trans-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U		8 U
Trichloroethene	UG/KG	77	19%	700	0	22	114	5 U	5 U	5 U		8 U
Trichlorofluoromethane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U		8 UJ
Vinyl chloride	UG/KG	0	0%	200	0	0	114	10 U	10 U	11 U		16 U
Carcinogenic PAHs												
Benzo(a)anthracene	UG/KG	260,000	52%		NA	66	127	200 J	23 J	2800	400 U	
Benzo(a)pyrene	UG/KG	240,000	49%		NA	62	127	200 J	400 U	2900	400 U	
Benzo(b)fluoranthene	UG/KG	310,000	51%		NA	65	127	340 J	24 J	5300 J	400 U	
Benzo(k)fluoranthene	UG/KG	59,000	24%		NA	30	127	380 UJ	400 U	2000 UJ	400 U	
Chrysene	UG/KG	240,000	50%		NA	64	127	180 J	400 U	2800	400 U	
Dibenz(a,h)anthracene	UG/KG	40,000	35%		NA	44	127	41 J	400 UJ	540 J	400 U	
Indeno(1,2,3-cd)pyrene	UG/KG	150,000	46%		NA	58	127	120 J	400 UJ	2000 J	400 U	
BTE (calculated)	MG/KG	355	94%	10 [b]	8	127	135	0.31	0.43	4.5	0.46	
Metals												
Aluminum	MG/KG	17,500	100%	76,100	0	114	114	10400 J	10000 J	10500 J	13400	
Antimony	MG/KG	11.3	18%	31	0	21	114	0.82 UJ	0.83 UJ	0.84 UJ	0.8 U	
Arsenic	MG/KG	19.5	100%	21.5 [d]	0	114	114	4.8 J	5 J	5.4 J	6.2	
Barium	MG/KG	248	100%	5,370	0	114	114	94.8 J	89.1 J	101 J	94.3 J	
Beryllium	MG/KG	1	100%	150	0	114	114	0.56 J	0.57 J	0.63 J	0.66	
Cadmium	MG/KG	2.5	94%	37	0	107	114	0.26 J	0.54 J	0.6 J	0.27	
Calcium	MG/KG	216,000	100%		NA	114	114	2250 J	2540 J	2770 J	2710	
Chromium	MG/KG	44.5	100%		NA	113	113	15.1 J	14.9 J	15 J	19	
Cobalt	MG/KG	16.8	100%	903	0	114	114	8.1 J	8.7 J	8.6 J	10.4	
Copper	MG/KG	131	100%	3,130	0	114	114	14.5 J	16.4 J	16.1 J	24.9	
Iron	MG/KG	51,100	100%	38,600 [d]	2	114	114	20100 J	20500 J	21200 J	26200	
Lead	MG/KG	469	100%	400	1	114	114	15.2 J	13.1 J	14.1 J	14.5	
Magnesium	MG/KG	25200 [1]	100%		NA	114	114	3070 J	3150 J	2880 J	3960 J	
Manganese	MG/KG	1,540	100%	1,760	0	114	114	478 J	776 J	921 J	666	
Mercury	MG/KG	0.327	99%	23	0	113	114	0.035	0.04	0.051	0.049	
Nickel	MG/KG	38.6	100%	1,560	0	114	114	18.4 J	22 J	19.9 J	28.4 J	
Potassium	MG/KG	1,750	100%		NA	114	114	910 J	891 J	1070 J	1220 J	
Selenium	MG/KG	3.4	25%	390	0	28	114	1.7 J	1.8 J	1.5 J	0.69 U	

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY							SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID							11EXFLA501	11EXFLA601	11EXFLA701	11EXFLB301	11EXFLB301
MATRIX							SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID							11EXFLA501	11EXFLA601	11EXFLA701	11EXFLB301	11EXFLB301V
SAMPLE DEPTH TO TOP OF SAMPLE							0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE							0.2	0.2	0.2	0.2	0.2
SAMPLE DATE							11/6/2006	11/6/2006	11/6/2006	11/17/2006	11/22/2006
QC CODE							SA	SA	SA	SA	SA
STUDY ID							IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Silver	MG/KG	2.2	5%	390	0	6	114	0.18 UJ	0.18 UJ	0.18 UJ	0.17 U	
Sodium	MG/KG	164	75%		NA	86	114	71.9 J	34.9 UJ	35.2 UJ	56.1 J	
Thallium	MG/KG	2.1	25%	5.2	0	28	114	1.3 J	2.1 J	1.6 J	0.77 U	
Vanadium	MG/KG	31.6	100%	78.2	0	114	114	21.5 J	17.4 J	18.7 J	23.5	
Zinc	MG/KG	591	100%	23,500	0	114	114	67.8 J	75.6 J	76.6 J	95.4 J	

Notes:
(1) Maximum value came from sample-duplicate pair averaged value.
(2) The cleanup goal (CUG) values were based on the following criteria:
  a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046, Revised January 24, 1994.
  b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
  c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
  d. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
(3) The number of exceedances is not applicable (NA) for parameters without site-specific CUGs.
(4) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLB401	11EXFLB501	11EXFLB601	11EXFLB701	11EXFLB801
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLB401	11EXFLB502	11EXFLB601	11EXFLB702	11EXFLB801
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/10/2006	11/22/2006	11/6/2006	11/22/2006	11/6/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds												
1,1,1-Trichloroethane	UG/KG	0	0%	800	0	0	114	5 U		4 U		5 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	600	0	0	114	5 U		4 U		5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		NA	0	114	5 U		4 U		5 U
1,1,2-Trichloroethane	UG/KG	0	0%		NA	0	114	5 U		4 U		5 U
1,1-Dichloroethane	UG/KG	0	0%	200	0	0	114	5 U		4 U		5 U
1,1-Dichloroethene	UG/KG	0	0%	400	0	0	114	5 U		4 U		5 U
1,2,3-Trichlorobenzene	UG/KG	0	0%		NA	0	114	5 U		4 U		5 U
1,2,4-Trichlorobenzene	UG/KG	0	0%	3,400	0	0	114	5 U		4 U		5 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		NA	0	114	5 U		4 U		5 U
1,2-Dibromoethane	UG/KG	0	0%		NA	0	114	5 U		4 U		5 U
1,2-Dichlorobenzene	UG/KG	0	0%	7,900	0	0	114	5 U		4 U		5 U
1,2-Dichloroethane	UG/KG	0	0%	100	0	0	114	5 U		4 U		5 U
1,2-Dichloropropane	UG/KG	0	0%		NA	0	114	5 U		4 U		5 U
1,3-Dichlorobenzene	UG/KG	0	0%	1,600	0	0	114	5 U		4 U		5 U
1,4-Dichlorobenzene	UG/KG	0	0%	8,500	0	0	114	5 U		4 U		5 U
Acetone	UG/KG	67	2%	200	0	2	106	26 U		22 UJ		24 UJ
Benzene	UG/KG	0	0%	60	0	0	114	5 U		4 U		5 U
Bromochloromethane	UG/KG	0	0%		NA	0	114	5 U		4 U		5 U
Bromodichloromethane	UG/KG	0	0%		NA	0	114	5 U		4 U		5 U
Bromoform	UG/KG	0	0%		NA	0	114	5 U		4 U		5 U
Carbon disulfide	UG/KG	0	0%	2,700	0	0	114	5 U		4 U		5 U
Carbon tetrachloride	UG/KG	0	0%	600	0	0	114	5 U		4 U		5 U
Chlorobenzene	UG/KG	0	0%	1,700	0	0	114	5 U		4 U		5 U
Chlorodibromomethane	UG/KG	0	0%		NA	0	114	5 U		4 U		5 U
Chloroethane	UG/KG	0	0%	1,900	0	0	114	10 U		9 U		10 U
Chloroform	UG/KG	0	0%	300	0	0	114	5 U		4 U		5 U
Cis-1,2-Dichloroethene	UG/KG	2	1%		NA	1	114	5 U		4 U		5 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	5 U		4 U		5 U
Cyclohexane	UG/KG	0	0%		NA	0	114	5 U		4 U		5 U
Dichlorodifluoromethane	UG/KG	2.25 [1]	4%		NA	5	114	5 U		4 U		5 U
Ethyl benzene	UG/KG	0	0%	5,500	0	0	114	5 U		4 U		5 U
Isopropylbenzene	UG/KG	0	0%		NA	0	114	5 U		4 U		5 U
Methyl Acetate	UG/KG	0	0%		NA	0	114	5 U		4 UJ		5 UJ
Methyl Tertbutyl Ether	UG/KG	0	0%		NA	0	114	5 U		4 UJ		5 UJ
Methyl bromide	UG/KG	0	0%		NA	0	89	10 U		9 UJ		10 UJ
Methyl butyl ketone	UG/KG	0	0%		NA	0	114	26 U		22 U		24 U
Methyl chloride	UG/KG	0	0%		NA	0	114	10 U		9 U		10 U
Methyl cyclohexane	UG/KG	0	0%		NA	0	114	5 U		4 U		5 U
Methyl ethyl ketone	UG/KG	0	0%	300	0	0	114	26 U		22 U		24 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLB401	11EXFLB501	11EXFLB601	11EXFLB701	11EXFLB801
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLB401	11EXFLB502	11EXFLB601	11EXFLB702	11EXFLB801
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/10/2006	11/22/2006	11/6/2006	11/22/2006	11/6/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Methyl isobutyl ketone	UG/KG	0	0%	1,000	0	0	114	26 U		22 U		24 U
Methylene chloride	UG/KG	49	89%	100	0	102	114	6 J		9 U		12 U
Styrene	UG/KG	0	0%		NA	0	114	5 U		4 U		5 U
Tetrachloroethene	UG/KG	2	2%	1,400	0	2	114	5 U		4 U		5 U
Toluene	UG/KG	0	0%	1,500	0	0	114	5 U		4 U		5 U
Total Xylenes	UG/KG	0	0%	1,200	0	0	114	15 U		13 U		14 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	300	0	0	114	5 U		4 UJ		5 UJ
Trans-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	5 U		4 U		5 U
Trichloroethene	UG/KG	77	19%	700	0	22	114	5 U		4 U		5 U
Trichlorofluoromethane	UG/KG	0	0%		NA	0	114	5 U		4 U		5 U
Vinyl chloride	UG/KG	0	0%	200	0	0	114	10 U		9 U		10 U
Carcinogenic PAHs												
Benzo(a)anthracene	UG/KG	260,000	52%		NA	66	127	400 U	390 U	1300 J	390 U	1400
Benzo(a)pyrene	UG/KG	240,000	49%		NA	62	127	400 U	390 U	1200 J	390 U	1200
Benzo(b)fluoranthene	UG/KG	310,000	51%		NA	65	127	400 U	390 U	2100 J	390 U	2200 J
Benzo(k)fluoranthene	UG/KG	59,000	24%		NA	30	127	400 U	390 U	1900 UJ	390 U	370 UJ
Chrysene	UG/KG	240,000	50%		NA	64	127	400 U	390 U	1200 J	390 U	1300
Dibenz(a,h)anthracene	UG/KG	40,000	35%		NA	44	127	400 U	390 U	240 J	390 U	230 J
Indeno(1,2,3-cd)pyrene	UG/KG	150,000	46%		NA	58	127	400 U	390 U	780 J	390 U	820 J
BTE (calculated)	MG/KG	355	94%	10 [b]	8	127	135	0.46	0.45	1.9	0.45	1.9
Metals												
Aluminum	MG/KG	17,500	100%	76,100	0	114	114	13200		8810 J		7400 J
Antimony	MG/KG	11.3	18%	31	0	21	114	0.78 UJ		0.8 UJ		0.79 UJ
Arsenic	MG/KG	19.5	100%	21.5 [d]	0	114	114	6.8		5.3 J		3.7 J
Barium	MG/KG	248	100%	5,370	0	114	114	96.5 J		68.8 J		37.8 J
Beryllium	MG/KG	1	100%	150	0	114	114	0.64		0.47 J		0.38 J
Cadmium	MG/KG	2.5	94%	37	0	107	114	0.31		0.35 J		0.42 J
Calcium	MG/KG	216,000	100%		NA	114	114	2140		2750 J		30600 J
Chromium	MG/KG	44.5	100%		NA	113	113	19		13.1 J		12.5 J
Cobalt	MG/KG	16.8	100%	903	0	114	114	11.3 J		7.9 J		7 J
Copper	MG/KG	131	100%	3,130	0	114	114	19.3		20.1 J		18.3 J
Iron	MG/KG	51,100	100%	38,600 [d]	2	114	114	27200		18700 J		16800 J
Lead	MG/KG	469	100%	400	1	114	114	15		12.6 J		10.3 J
Magnesium	MG/KG	25200 [1]	100%		NA	114	114	3560		3320 J		7620 J
Manganese	MG/KG	1,540	100%	1,760	0	114	114	900 J		600 J		315 J
Mercury	MG/KG	0.327	99%	23	0	113	114	0.044		0.034		0.012
Nickel	MG/KG	38.6	100%	1,560	0	114	114	24.8 J		21.5 J		19.8 J
Potassium	MG/KG	1,750	100%		NA	114	114	1470 J		930 J		764 J
Selenium	MG/KG	3.4	25%	390	0	28	114	2.1 J		2.2 J		1.4 J

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY							SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID							11EXFLB401	11EXFLB501	11EXFLB601	11EXFLB701	11EXFLB801
MATRIX							SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID							11EXFLB401	11EXFLB502	11EXFLB601	11EXFLB702	11EXFLB801
SAMPLE DEPTH TO TOP OF SAMPLE							0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE							0.2	0.2	0.2	0.2	0.2
SAMPLE DATE							11/10/2006	11/22/2006	11/6/2006	11/22/2006	11/6/2006
QC CODE							SA	SA	SA	SA	SA
STUDY ID							IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Silver	MG/KG	2.2	5%	390	0	6	114	0.17 U		0.17 UJ		0.17 UJ
Sodium	MG/KG	164	75%		NA	86	114	66 J		36.6 J		59.6 UJ
Thallium	MG/KG	2.1	25%	5.2	0	28	114	1.5 J		1.3 J		0.82 J
Vanadium	MG/KG	31.6	100%	78.2	0	114	114	31.6		16.1 J		12.5 J
Zinc	MG/KG	591	100%	23,500	0	114	114	77.3 J		81.8 J		81.4 J

Notes:
(1) Maximum value came from sample-duplicate pair averaged value.
(2) The cleanup goal (CUG) values were based on the following criteria:
  a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046, Revised January 24, 1994.
  b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
  c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
  d. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
(3) The number of exceedances is not applicable (NA) for parameters without site-specific CUGs.
(4) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLC001	11EXFLC1001	11EXFLC1001	11EXFLC101	11EXFLC101
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLC001	11EXFLC1002	11EXFLC1001	11EXFLC101	11EXFLC101V
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/15/2006	11/30/2006	11/30/2006	11/17/2006	11/22/2006
QC CODE								SA	DU	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds												
1,1,1-Trichloroethane	UG/KG	0	0%	800	0	0	114		4 U	4 U		10 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	600	0	0	114		4 U	4 U		10 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		NA	0	114		4 U	4 U		10 U
1,1,2-Trichloroethane	UG/KG	0	0%		NA	0	114		4 U	4 U		10 U
1,1-Dichloroethane	UG/KG	0	0%	200	0	0	114		4 U	4 U		10 U
1,1-Dichloroethene	UG/KG	0	0%	400	0	0	114		4 U	4 U		10 U
1,2,3-Trichlorobenzene	UG/KG	0	0%		NA	0	114		4 U	4 U		10 U
1,2,4-Trichlorobenzene	UG/KG	0	0%	3,400	0	0	114		4 U	4 U		10 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		NA	0	114		4 U	4 U		10 U
1,2-Dibromoethane	UG/KG	0	0%		NA	0	114		4 U	4 U		10 U
1,2-Dichlorobenzene	UG/KG	0	0%	7,900	0	0	114		4 U	4 U		10 U
1,2-Dichloroethane	UG/KG	0	0%	100	0	0	114		4 U	4 U		10 U
1,2-Dichloropropane	UG/KG	0	0%		NA	0	114		4 U	4 U		10 U
1,3-Dichlorobenzene	UG/KG	0	0%	1,600	0	0	114		4 U	4 U		10 U
1,4-Dichlorobenzene	UG/KG	0	0%	8,500	0	0	114		4 U	4 U		10 U
Acetone	UG/KG	67	2%	200	0	2	106		20 U	20 U		49 U
Benzene	UG/KG	0	0%	60	0	0	114		4 U	4 U		10 U
Bromochloromethane	UG/KG	0	0%		NA	0	114		4 U	4 U		10 U
Bromodichloromethane	UG/KG	0	0%		NA	0	114		4 U	4 U		10 U
Bromoform	UG/KG	0	0%		NA	0	114		4 U	4 U		10 U
Carbon disulfide	UG/KG	0	0%	2,700	0	0	114		4 U	4 U		10 U
Carbon tetrachloride	UG/KG	0	0%	600	0	0	114		4 U	4 U		10 U
Chlorobenzene	UG/KG	0	0%	1,700	0	0	114		4 U	4 U		10 U
Chlorodibromomethane	UG/KG	0	0%		NA	0	114		4 U	4 U		10 U
Chloroethane	UG/KG	0	0%	1,900	0	0	114		8 U	8 U		20 U
Chloroform	UG/KG	0	0%	300	0	0	114		4 U	4 U		10 U
Cis-1,2-Dichloroethene	UG/KG	2	1%		NA	1	114		4 U	4 U		10 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114		4 U	4 U		10 U
Cyclohexane	UG/KG	0	0%		NA	0	114		4 U	4 U		10 U
Dichlorodifluoromethane	UG/KG	2.25 [1]	4%		NA	5	114		4 U	4 U		10 U
Ethyl benzene	UG/KG	0	0%	5,500	0	0	114		4 U	4 U		10 U
Isopropylbenzene	UG/KG	0	0%		NA	0	114		4 U	4 U		10 U
Methyl Acetate	UG/KG	0	0%		NA	0	114		4 U	4 U		10 UJ
Methyl Tertbutyl Ether	UG/KG	0	0%		NA	0	114		4 U	4 U		10 UJ
Methyl bromide	UG/KG	0	0%		NA	0	89		8 UJ	8 UJ		20 UR
Methyl butyl ketone	UG/KG	0	0%		NA	0	114		20 U	20 U		49 U
Methyl chloride	UG/KG	0	0%		NA	0	114		8 U	8 U		20 U
Methyl cyclohexane	UG/KG	0	0%		NA	0	114		4 U	4 U		10 U
Methyl ethyl ketone	UG/KG	0	0%	300	0	0	114		20 U	20 U		49 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLC001	11EXFLC1001	11EXFLC1001	11EXFLC101	11EXFLC101
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLC001	11EXFLC1002	11EXFLC1001	11EXFLC101	11EXFLC101V
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/15/2006	11/30/2006	11/30/2006	11/17/2006	11/22/2006
QC CODE								SA	DU	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Methyl isobutyl ketone	UG/KG	0	0%	1,000	0	0	114		20 U	20 U		49 U
Methylene chloride	UG/KG	49	89%	100	0	102	114		8 J	8 J		26 J
Styrene	UG/KG	0	0%		NA	0	114		4 U	4 U		10 U
Tetrachloroethene	UG/KG	2	2%	1,400	0	2	114		4 U	4 U		10 U
Toluene	UG/KG	0	0%	1,500	0	0	114		4 U	4 U		10 U
Total Xylenes	UG/KG	0	0%	1,200	0	0	114		12 U	12 U		29 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	300	0	0	114		4 U	4 U		10 UJ
Trans-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114		4 U	4 U		10 U
Trichloroethene	UG/KG	77	19%	700	0	22	114		4 U	4 U		10 U
Trichlorofluoromethane	UG/KG	0	0%		NA	0	114		4 UJ	4 UJ		10 UJ
Vinyl chloride	UG/KG	0	0%	200	0	0	114		8 U	8 U		20 U
Carcinogenic PAHs												
Benzo(a)anthracene	UG/KG	260,000	52%		NA	66	127	410 U	170 J	240 J	28 J	
Benzo(a)pyrene	UG/KG	240,000	49%		NA	62	127	410 U	140 J	220 J	24 J	
Benzo(b)fluoranthene	UG/KG	310,000	51%		NA	65	127	410 U	210 J	320 J	33 J	
Benzo(k)fluoranthene	UG/KG	59,000	24%		NA	30	127	410 U	61 J	97 J	400 U	
Chrysene	UG/KG	240,000	50%		NA	64	127	410 U	160 J	240 J	28 J	
Dibenz(a,h)anthracene	UG/KG	40,000	35%		NA	44	127	410 U	27 J	40 J	400 U	
Indeno(1,2,3-cd)pyrene	UG/KG	150,000	46%		NA	58	127	410 U	96 J	150 J	400 U	
BTE (calculated)	MG/KG	355	94%	10 [b]	8	127	135	0.48	0.22	0.33	0.25	
Metals												
Aluminum	MG/KG	17,500	100%	76,100	0	114	114		9620 J	7170 J	12700	
Antimony	MG/KG	11.3	18%	31	0	21	114		0.58 U	0.53 U	0.83 U	
Arsenic	MG/KG	19.5	100%	21.5 [d]	0	114	114		5.4	4.8	6	
Barium	MG/KG	248	100%	5,370	0	114	114		76.6 J	51.4 J	116 J	
Beryllium	MG/KG	1	100%	150	0	114	114		0.53	0.4	0.62	
Cadmium	MG/KG	2.5	94%	37	0	107	114		0.33	0.19 U	0.29	
Calcium	MG/KG	216,000	100%		NA	114	114		49400 J	36200 J	3130	
Chromium	MG/KG	44.5	100%		NA	113	113		53 R	11.2 R	17.9	
Cobalt	MG/KG	16.8	100%	903	0	114	114		11.7	9.7	10.3	
Copper	MG/KG	131	100%	3,130	0	114	114		21.1	16.8	18.1	
Iron	MG/KG	51,100	100%	38,600 [d]	2	114	114		22100	17300	24600	
Lead	MG/KG	469	100%	400	1	114	114		134 R	10.6 R	12.4	
Magnesium	MG/KG	25200 [1]	100%		NA	114	114		9730	8760	3410 J	
Manganese	MG/KG	1,540	100%	1,760	0	114	114		541	483	803	
Mercury	MG/KG	0.327	99%	23	0	113	114		0.011 J	0.02	0.037	
Nickel	MG/KG	38.6	100%	1,560	0	114	114		28.6	22.2	24.1 J	
Potassium	MG/KG	1,750	100%		NA	114	114		1060	894	1130 J	
Selenium	MG/KG	3.4	25%	390	0	28	114		0.41 U	0.38 U	0.71 U	

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLC001	11EXFLC1001	11EXFLC1001	11EXFLC101	11EXFLC101
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLC001	11EXFLC1002	11EXFLC1001	11EXFLC101	11EXFLC101V
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/15/2006	11/30/2006	11/30/2006	11/17/2006	11/22/2006
QC CODE								SA	DU	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Silver	MG/KG	2.2	5%	390	0	6	114		0.52 U	0.48 U	0.18 U	
Sodium	MG/KG	164	75%		NA	86	114		95.5 J	61.7 J	34.7 U	
Thallium	MG/KG	2.1	25%	5.2	0	28	114		0.51 U	0.47 U	0.79 U	
Vanadium	MG/KG	31.6	100%	78.2	0	114	114		14.4 J	11.4 J	21.9	
Zinc	MG/KG	591	100%	23,500	0	114	114		98.8 J	70.8 J	86.6 J	

Notes:
(1) Maximum value came from sample-duplicate pair averaged value.
(2) The cleanup goal (CUG) values were based on the following criteria:
  a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM)
    HWR-94-4046, Revised January 24, 1994.
  b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
  c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
  d. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
(3) The number of exceedances is not applicable (NA) for parameters without site-specific CUGs.
(4) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLC201	11EXFLC201	11EXFLC301	11EXFLC301	11EXFLC401
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLC202	11EXFLC201	11EXFLC301	11EXFLC301V	11EXFLC402
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/10/2006	11/10/2006	11/17/2006	11/22/2006	11/17/2006
QC CODE								DU	SA	SA	SA	DU
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds												
1,1,1-Trichloroethane	UG/KG	0	0%	800	0	0	114	5 U	5 U		14 U	
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	600	0	0	114	5 U	5 U		14 U	
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		NA	0	114	5 U	5 U		14 U	
1,1,2-Trichloroethane	UG/KG	0	0%		NA	0	114	5 U	5 U		14 U	
1,1-Dichloroethane	UG/KG	0	0%	200	0	0	114	5 U	5 U		14 U	
1,1-Dichloroethene	UG/KG	0	0%	400	0	0	114	5 U	5 U		14 U	
1,2,3-Trichlorobenzene	UG/KG	0	0%		NA	0	114	5 U	5 U		14 U	
1,2,4-Trichlorobenzene	UG/KG	0	0%	3,400	0	0	114	5 U	5 U		14 U	
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		NA	0	114	5 U	5 U		14 U	
1,2-Dibromoethane	UG/KG	0	0%		NA	0	114	5 U	5 U		14 U	
1,2-Dichlorobenzene	UG/KG	0	0%	7,900	0	0	114	5 U	5 U		14 U	
1,2-Dichloroethane	UG/KG	0	0%	100	0	0	114	5 U	5 U		14 U	
1,2-Dichloropropane	UG/KG	0	0%		NA	0	114	5 U	5 U		14 U	
1,3-Dichlorobenzene	UG/KG	0	0%	1,600	0	0	114	5 U	5 U		14 U	
1,4-Dichlorobenzene	UG/KG	0	0%	8,500	0	0	114	5 U	5 U		14 U	
Acetone	UG/KG	67	2%	200	0	2	106	23 U	25 U		70 U	
Benzene	UG/KG	0	0%	60	0	0	114	5 U	5 U		14 U	
Bromochloromethane	UG/KG	0	0%		NA	0	114	5 U	5 U		14 U	
Bromodichloromethane	UG/KG	0	0%		NA	0	114	5 U	5 U		14 U	
Bromoform	UG/KG	0	0%		NA	0	114	5 U	5 U		14 U	
Carbon disulfide	UG/KG	0	0%	2,700	0	0	114	5 U	5 U		14 U	
Carbon tetrachloride	UG/KG	0	0%	600	0	0	114	5 U	5 U		14 U	
Chlorobenzene	UG/KG	0	0%	1,700	0	0	114	5 U	5 U		14 U	
Chlorodibromomethane	UG/KG	0	0%		NA	0	114	5 U	5 U		14 U	
Chloroethane	UG/KG	0	0%	1,900	0	0	114	9 U	10 U		28 U	
Chloroform	UG/KG	0	0%	300	0	0	114	5 U	5 U		14 U	
Cis-1,2-Dichloroethene	UG/KG	2	1%		NA	1	114	5 U	5 U		14 U	
Cis-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	5 U	5 U		14 U	
Cyclohexane	UG/KG	0	0%		NA	0	114	5 U	5 U		14 U	
Dichlorodifluoromethane	UG/KG	2.25 [1]	4%		NA	5	114	5 U	5 U		14 U	
Ethyl benzene	UG/KG	0	0%	5,500	0	0	114	5 U	5 U		14 U	
Isopropylbenzene	UG/KG	0	0%		NA	0	114	5 U	5 U		14 U	
Methyl Acetate	UG/KG	0	0%		NA	0	114	5 U	5 U		14 UJ	
Methyl Tertbutyl Ether	UG/KG	0	0%		NA	0	114	5 U	5 U		14 UJ	
Methyl bromide	UG/KG	0	0%		NA	0	89	9 U	10 U		28 UR	
Methyl butyl ketone	UG/KG	0	0%		NA	0	114	23 U	25 U		70 U	
Methyl chloride	UG/KG	0	0%		NA	0	114	9 U	10 U		28 U	
Methyl cyclohexane	UG/KG	0	0%		NA	0	114	5 U	5 U		14 U	
Methyl ethyl ketone	UG/KG	0	0%	300	0	0	114	23 U	25 U		70 U	

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLC201	11EXFLC201	11EXFLC301	11EXFLC301	11EXFLC401
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLC202	11EXFLC201	11EXFLC301	11EXFLC301V	11EXFLC402
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/10/2006	11/10/2006	11/17/2006	11/22/2006	11/17/2006
QC CODE								DU	SA	SA	SA	DU
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Methyl isobutyl ketone	UG/KG	0	0%	1,000	0	0	114	23 U	25 U		70 U	
Methylene chloride	UG/KG	49	89%	100	0	102	114	4 J	7 J		42 J	
Styrene	UG/KG	0	0%		NA	0	114	5 U	5 U		14 U	
Tetrachloroethene	UG/KG	2	2%	1,400	0	2	114	5 U	5 U		14 U	
Toluene	UG/KG	0	0%	1,500	0	0	114	5 U	5 U		14 U	
Total Xylenes	UG/KG	0	0%	1,200	0	0	114	14 U	15 U		42 U	
Trans-1,2-Dichloroethene	UG/KG	0	0%	300	0	0	114	5 U	5 U		14 UJ	
Trans-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	5 U	5 U		14 U	
Trichloroethene	UG/KG	77	19%	700	0	22	114	5 U	5 U		14 U	
Trichlorofluoromethane	UG/KG	0	0%		NA	0	114	5 U	5 U		14 UJ	
Vinyl chloride	UG/KG	0	0%	200	0	0	114	9 U	10 U		28 U	
Carcinogenic PAHs												
Benzo(a)anthracene	UG/KG	260,000	52%		NA	66	127	54 J	180 J	79 J		380 U
Benzo(a)pyrene	UG/KG	240,000	49%		NA	62	127	40 J	190 J	64 J		380 U
Benzo(b)fluoranthene	UG/KG	310,000	51%		NA	65	127	59 J	380	120 J		380 U
Benzo(k)fluoranthene	UG/KG	59,000	24%		NA	30	127	390 U	370 U	400 U		380 U
Chrysene	UG/KG	240,000	50%		NA	64	127	53 J	260 J	77 J		380 U
Dibenz(a,h)anthracene	UG/KG	40,000	35%		NA	44	127	390 U	37 J	400 U		380 U
Indeno(1,2,3-cd)pyrene	UG/KG	150,000	46%		NA	58	127	29 J	150 J	38 J		380 U
BTE (calculated)	MG/KG	355	94%	10 [b]	8	127	135	0.25	0.30	0.29		0.44
Metals												
Aluminum	MG/KG	17,500	100%	76,100	0	114	114	12200	12900	17500		13100
Antimony	MG/KG	11.3	18%	31	0	21	114	0.77 UJ	0.8 UJ	0.79 U		0.72 U
Arsenic	MG/KG	19.5	100%	21.5 [d]	0	114	114	5.9	5.6	6.8		6.4
Barium	MG/KG	248	100%	5,370	0	114	114	92.4 J	78.3 J	182 J		62.8 J
Beryllium	MG/KG	1	100%	150	0	114	114	0.65	0.49	1		0.56
Cadmium	MG/KG	2.5	94%	37	0	107	114	0.17 J	0.3	0.36		0.18 J
Calcium	MG/KG	216,000	100%		NA	114	114	2480	2080	5710		1460
Chromium	MG/KG	44.5	100%		NA	113	113	17.5	20	21.8		18.4
Cobalt	MG/KG	16.8	100%	903	0	114	114	10.8 J	7.9 J	12.3		10.9
Copper	MG/KG	131	100%	3,130	0	114	114	19.1	22.3	23.7		20.4
Iron	MG/KG	51,100	100%	38,600 [d]	2	114	114	23400	25500	29200		26600
Lead	MG/KG	469	100%	400	1	114	114	93.1 J	11.4 J	16.3		16
Magnesium	MG/KG	25200 [1]	100%		NA	114	114	3820	3900	5750 J		3540 J
Manganese	MG/KG	1,540	100%	1,760	0	114	114	813 J	252 J	1140		584
Mercury	MG/KG	0.327	99%	23	0	113	114	0.047	0.031	0.036		0.052
Nickel	MG/KG	38.6	100%	1,560	0	114	114	27.3 J	23.1 J	29.9 J		24.5 J
Potassium	MG/KG	1,750	100%		NA	114	114	1060 J	1320 J	1520 J		1210 J
Selenium	MG/KG	3.4	25%	390	0	28	114	1.6 J	1.8 J	0.67 U		0.61 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY							SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID							11EXFLC201	11EXFLC201	11EXFLC301	11EXFLC301	11EXFLC401
MATRIX							SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID							11EXFLC202	11EXFLC201	11EXFLC301	11EXFLC301V	11EXFLC402
SAMPLE DEPTH TO TOP OF SAMPLE							0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE							0.2	0.2	0.2	0.2	0.2
SAMPLE DATE							11/10/2006	11/10/2006	11/17/2006	11/22/2006	11/17/2006
QC CODE							DU	SA	SA	SA	DU
STUDY ID							IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Silver	MG/KG	2.2	5%	390	0	6	114	0.17 U	0.17 U	0.17 U		0.16 U
Sodium	MG/KG	164	75%		NA	86	114	49.2 J	45.9 J	62.9 J		41.5 J
Thallium	MG/KG	2.1	25%	5.2	0	28	114	0.95 J	1.5 J	0.75 U		0.69 U
Vanadium	MG/KG	31.6	100%	78.2	0	114	114	21.8	23.4	31.2		23.7
Zinc	MG/KG	591	100%	23,500	0	114	114	82.5 J	82.7 J	92.1 J		92.3 J

Notes:
(1) Maximum value came from sample-duplicate pair averaged value.
(2) The cleanup goal (CUG) values were based on the following criteria:
  a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046, Revised January 24, 1994.
  b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
  c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
  d. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
(3) The number of exceedances is not applicable (NA) for parameters without site-specific CUGs.
(4) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLC401	11EXFLC401	11EXFLC401	11EXFLC501	11EXFLC601
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLC402V	11EXFLC401	11EXFLC401V	11EXFLC501	11EXFLC602
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/22/2006	11/17/2006	11/22/2006	11/10/2006	11/22/2006
QC CODE								DU	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds												
1,1,1-Trichloroethane	UG/KG	0	0%	800	0	0	114	6 U		9 U	5 U	
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	600	0	0	114	6 U		9 U	5 U	
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		NA	0	114	6 U		9 U	5 U	
1,1,2-Trichloroethane	UG/KG	0	0%		NA	0	114	6 U		9 U	5 U	
1,1-Dichloroethane	UG/KG	0	0%	200	0	0	114	6 U		9 U	5 U	
1,1-Dichloroethene	UG/KG	0	0%	400	0	0	114	6 U		9 U	5 U	
1,2,3-Trichlorobenzene	UG/KG	0	0%		NA	0	114	6 U		9 U	5 U	
1,2,4-Trichlorobenzene	UG/KG	0	0%	3,400	0	0	114	6 U		9 U	5 U	
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		NA	0	114	6 U		9 U	5 U	
1,2-Dibromoethane	UG/KG	0	0%		NA	0	114	6 U		9 U	5 U	
1,2-Dichlorobenzene	UG/KG	0	0%	7,900	0	0	114	6 U		9 U	5 U	
1,2-Dichloroethane	UG/KG	0	0%	100	0	0	114	6 U		9 U	5 U	
1,2-Dichloropropane	UG/KG	0	0%		NA	0	114	6 U		9 U	5 U	
1,3-Dichlorobenzene	UG/KG	0	0%	1,600	0	0	114	6 U		9 U	5 U	
1,4-Dichlorobenzene	UG/KG	0	0%	8,500	0	0	114	6 U		9 U	5 U	
Acetone	UG/KG	67	2%	200	0	2	106	33 U		44 U	27 U	
Benzene	UG/KG	0	0%	60	0	0	114	6 U		9 U	5 U	
Bromochloromethane	UG/KG	0	0%		NA	0	114	6 U		9 U	5 U	
Bromodichloromethane	UG/KG	0	0%		NA	0	114	6 U		9 U	5 U	
Bromoform	UG/KG	0	0%		NA	0	114	6 U		9 U	5 U	
Carbon disulfide	UG/KG	0	0%	2,700	0	0	114	6 U		9 U	5 U	
Carbon tetrachloride	UG/KG	0	0%	600	0	0	114	6 U		9 U	5 U	
Chlorobenzene	UG/KG	0	0%	1,700	0	0	114	6 U		9 U	5 U	
Chlorodibromomethane	UG/KG	0	0%		NA	0	114	6 U		9 U	5 U	
Chloroethane	UG/KG	0	0%	1,900	0	0	114	13 U		18 U	11 U	
Chloroform	UG/KG	0	0%	300	0	0	114	6 U		9 U	5 U	
Cis-1,2-Dichloroethene	UG/KG	2	1%		NA	1	114	6 U		9 U	5 U	
Cis-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	6 U		9 U	5 U	
Cyclohexane	UG/KG	0	0%		NA	0	114	6 U		9 U	5 U	
Dichlorodifluoromethane	UG/KG	2.25 [1]	4%		NA	5	114	6 U		9 U	5 U	
Ethyl benzene	UG/KG	0	0%	5,500	0	0	114	6 U		9 U	5 U	
Isopropylbenzene	UG/KG	0	0%		NA	0	114	6 U		9 U	5 U	
Methyl Acetate	UG/KG	0	0%		NA	0	114	6 UJ		9 UJ	5 U	
Methyl Tertbutyl Ether	UG/KG	0	0%		NA	0	114	6 UJ		9 UJ	5 U	
Methyl bromide	UG/KG	0	0%		NA	0	89	13 UR		18 UR	11 U	
Methyl butyl ketone	UG/KG	0	0%		NA	0	114	33 U		44 U	27 U	
Methyl chloride	UG/KG	0	0%		NA	0	114	13 U		18 U	11 U	
Methyl cyclohexane	UG/KG	0	0%		NA	0	114	6 U		9 U	5 U	
Methyl ethyl ketone	UG/KG	0	0%	300	0	0	114	33 U		44 U	27 U	

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLC401	11EXFLC401	11EXFLC401	11EXFLC501	11EXFLC601
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLC402V	11EXFLC401	11EXFLC401V	11EXFLC501	11EXFLC602
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/22/2006	11/17/2006	11/22/2006	11/10/2006	11/22/2006
QC CODE								DU	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Methyl isobutyl ketone	UG/KG	0	0%	1,000	0	0	114	33 U		44 U	27 U	
Methylene chloride	UG/KG	49	89%	100	0	102	114	16 J		17 J	12 J	
Styrene	UG/KG	0	0%		NA	0	114	6 U		9 U	5 U	
Tetrachloroethene	UG/KG	2	2%	1,400	0	2	114	6 U		9 U	5 U	
Toluene	UG/KG	0	0%	1,500	0	0	114	6 U		9 U	5 U	
Total Xylenes	UG/KG	0	0%	1,200	0	0	114	20 U		26 U	16 U	
Trans-1,2-Dichloroethene	UG/KG	0	0%	300	0	0	114	6 UJ		9 UJ	5 U	
Trans-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	6 U		9 U	5 U	
Trichloroethene	UG/KG	77	19%	700	0	22	114	6 U		9 U	5 U	
Trichlorofluoromethane	UG/KG	0	0%		NA	0	114	6 UJ		9 UJ	5 U	
Vinyl chloride	UG/KG	0	0%	200	0	0	114	13 U		18 U	11 U	
Carcinogenic PAHs												
Benzo(a)anthracene	UG/KG	260,000	52%		NA	66	127		380 U		150 J	380 U
Benzo(a)pyrene	UG/KG	240,000	49%		NA	62	127		380 U		110 J	380 U
Benzo(b)fluoranthene	UG/KG	310,000	51%		NA	65	127		380 U		140 J	380 U
Benzo(k)fluoranthene	UG/KG	59,000	24%		NA	30	127		380 U		39 J	380 U
Chrysene	UG/KG	240,000	50%		NA	64	127		380 U		140 J	380 U
Dibenz(a,h)anthracene	UG/KG	40,000	35%		NA	44	127		380 U		23 J	380 U
Indeno(1,2,3-cd)pyrene	UG/KG	150,000	46%		NA	58	127		380 U		62 J	380 U
BTE (calculated)	MG/KG	355	94%	10 [b]	8	127	135		0.44		0.17	0.44
Metals												
Aluminum	MG/KG	17,500	100%	76,100	0	114	114		13200		12400	
Antimony	MG/KG	11.3	18%	31	0	21	114		0.72 U		0.81 UJ	
Arsenic	MG/KG	19.5	100%	21.5 [d]	0	114	114		6.4		5.4	
Barium	MG/KG	248	100%	5,370	0	114	114		68.3 J		114 J	
Beryllium	MG/KG	1	100%	150	0	114	114		0.56		0.7	
Cadmium	MG/KG	2.5	94%	37	0	107	114		0.17 J		0.32	
Calcium	MG/KG	216,000	100%		NA	114	114		1460		2920	
Chromium	MG/KG	44.5	100%		NA	113	113		19.1		16.8	
Cobalt	MG/KG	16.8	100%	903	0	114	114		9		9 J	
Copper	MG/KG	131	100%	3,130	0	114	114		18.6		15.5	
Iron	MG/KG	51,100	100%	38,600 [d]	2	114	114		26800		21100	
Lead	MG/KG	469	100%	400	1	114	114		15		13.6	
Magnesium	MG/KG	25200 [1]	100%		NA	114	114		3590 J		2830	
Manganese	MG/KG	1,540	100%	1,760	0	114	114		451		862 J	
Mercury	MG/KG	0.327	99%	23	0	113	114		0.04		0.039	
Nickel	MG/KG	38.6	100%	1,560	0	114	114		23.7 J		20.5 J	
Potassium	MG/KG	1,750	100%		NA	114	114		1290 J		1660 J	
Selenium	MG/KG	3.4	25%	390	0	28	114		0.62 U		2.1 J	

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLC401	11EXFLC401	11EXFLC401	11EXFLC501	11EXFLC601
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLC402V	11EXFLC401	11EXFLC401V	11EXFLC501	11EXFLC602
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/22/2006	11/17/2006	11/22/2006	11/10/2006	11/22/2006
QC CODE								DU	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Silver	MG/KG	2.2	5%	390	0	6	114		0.16 U		0.18 U	
Sodium	MG/KG	164	75%		NA	86	114		48.1 J		67.9 J	
Thallium	MG/KG	2.1	25%	5.2	0	28	114		0.69 U		1.2 J	
Vanadium	MG/KG	31.6	100%	78.2	0	114	114		23.5		21.8	
Zinc	MG/KG	591	100%	23,500	0	114	114		86.3 J		85.9 J	

Notes:
(1) Maximum value came from sample-duplicate pair averaged value.
(2) The cleanup goal (CUG) values were based on the following criteria:
  a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM)
    HWR-94-4046, Revised January 24, 1994.
  b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
  c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
  d. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
(3) The number of exceedances is not applicable (NA) for parameters without site-specific CUGs.
(4) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLC701	11EXFLC801	11EXFLC901	11EXFLD001	11EXFLD1001
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLC702	11EXFLC802	11EXFLC901	11EXFLD001	11EXFLD1001
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/22/2006	11/22/2006	11/6/2006	12/15/2006	11/9/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds												
1,1,1-Trichloroethane	UG/KG	0	0%	800	0	0	114			6 U		4 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	600	0	0	114			6 U		4 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		NA	0	114			6 U		4 U
1,1,2-Trichloroethane	UG/KG	0	0%		NA	0	114			6 U		4 U
1,1-Dichloroethane	UG/KG	0	0%	200	0	0	114			6 U		4 U
1,1-Dichloroethene	UG/KG	0	0%	400	0	0	114			6 U		4 U
1,2,3-Trichlorobenzene	UG/KG	0	0%		NA	0	114			6 U		4 U
1,2,4-Trichlorobenzene	UG/KG	0	0%	3,400	0	0	114			6 U		4 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		NA	0	114			6 U		4 U
1,2-Dibromoethane	UG/KG	0	0%		NA	0	114			6 U		4 U
1,2-Dichlorobenzene	UG/KG	0	0%	7,900	0	0	114			6 U		4 U
1,2-Dichloroethane	UG/KG	0	0%	100	0	0	114			6 U		4 U
1,2-Dichloropropane	UG/KG	0	0%		NA	0	114			6 U		4 U
1,3-Dichlorobenzene	UG/KG	0	0%	1,600	0	0	114			6 U		4 U
1,4-Dichlorobenzene	UG/KG	0	0%	8,500	0	0	114			6 U		4 U
Acetone	UG/KG	67	2%	200	0	2	106			30 UJ		22 UR
Benzene	UG/KG	0	0%	60	0	0	114			6 U		4 U
Bromochloromethane	UG/KG	0	0%		NA	0	114			6 U		4 U
Bromodichloromethane	UG/KG	0	0%		NA	0	114			6 U		4 U
Bromoform	UG/KG	0	0%		NA	0	114			6 U		4 U
Carbon disulfide	UG/KG	0	0%	2,700	0	0	114			6 U		4 U
Carbon tetrachloride	UG/KG	0	0%	600	0	0	114			6 U		4 U
Chlorobenzene	UG/KG	0	0%	1,700	0	0	114			6 U		4 U
Chlorodibromomethane	UG/KG	0	0%		NA	0	114			6 U		4 U
Chloroethane	UG/KG	0	0%	1,900	0	0	114			12 U		9 U
Chloroform	UG/KG	0	0%	300	0	0	114			6 U		4 U
Cis-1,2-Dichloroethene	UG/KG	2	1%		NA	1	114			6 U		4 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114			6 U		4 U
Cyclohexane	UG/KG	0	0%		NA	0	114			6 U		4 U
Dichlorodifluoromethane	UG/KG	2.25 [1]	4%		NA	5	114			6 U		4 U
Ethyl benzene	UG/KG	0	0%	5,500	0	0	114			6 U		4 U
Isopropylbenzene	UG/KG	0	0%		NA	0	114			6 U		4 U
Methyl Acetate	UG/KG	0	0%		NA	0	114			6 UJ		4 UJ
Methyl Tertbutyl Ether	UG/KG	0	0%		NA	0	114			6 UJ		4 UJ
Methyl bromide	UG/KG	0	0%		NA	0	89			12 UJ		9 UR
Methyl butyl ketone	UG/KG	0	0%		NA	0	114			30 U		22 U
Methyl chloride	UG/KG	0	0%		NA	0	114			12 U		9 U
Methyl cyclohexane	UG/KG	0	0%		NA	0	114			6 U		4 U
Methyl ethyl ketone	UG/KG	0	0%	300	0	0	114			30 U		22 UJ

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLC701	11EXFLC801	11EXFLC901	11EXFLD001	11EXFLD1001
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLC702	11EXFLC802	11EXFLC901	11EXFLD001	11EXFLD1001
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/22/2006	11/22/2006	11/6/2006	12/15/2006	11/9/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Methyl isobutyl ketone	UG/KG	0	0%	1,000	0	0	114			30 U		22 U
Methylene chloride	UG/KG	49	89%	100	0	102	114			11 U		12
Styrene	UG/KG	0	0%		NA	0	114			6 U		4 U
Tetrachloroethene	UG/KG	2	2%	1,400	0	2	114			6 U		4 U
Toluene	UG/KG	0	0%	1,500	0	0	114			6 U		4 U
Total Xylenes	UG/KG	0	0%	1,200	0	0	114			18 U		13 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	300	0	0	114			6 UJ		4 UJ
Trans-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114			6 U		4 U
Trichloroethene	UG/KG	77	19%	700	0	22	114			6 U		4 U
Trichlorofluoromethane	UG/KG	0	0%		NA	0	114			6 U		4 U
Vinyl chloride	UG/KG	0	0%	200	0	0	114			12 U		9 U
Carcinogenic PAHs												
Benzo(a)anthracene	UG/KG	260,000	52%		NA	66	127	390 U	400 U	1300 J	410 U	370 U
Benzo(a)pyrene	UG/KG	240,000	49%		NA	62	127	390 U	400 U	1200 J	410 U	370 U
Benzo(b)fluoranthene	UG/KG	310,000	51%		NA	65	127	390 U	400 U	2000 J	410 U	370 U
Benzo(k)fluoranthene	UG/KG	59,000	24%		NA	30	127	390 U	400 U	2100 UJ	410 U	370 U
Chrysene	UG/KG	240,000	50%		NA	64	127	390 U	400 U	1100 J	410 U	370 U
Dibenz(a,h)anthracene	UG/KG	40,000	35%		NA	44	127	390 U	400 U	2100 UJ	410 U	370 U
Indeno(1,2,3-cd)pyrene	UG/KG	150,000	46%		NA	58	127	390 U	400 U	770 J	410 U	370 U
BTE (calculated)	MG/KG	355	94%	10 [b]	8	127	135	0.45	0.46	2.7	0.48	0.43
Metals												
Aluminum	MG/KG	17,500	100%	76,100	0	114	114			11500 J		11100
Antimony	MG/KG	11.3	18%	31	0	21	114			0.82 UJ		0.76 U
Arsenic	MG/KG	19.5	100%	21.5 [d]	0	114	114			5.1 J		5.2
Barium	MG/KG	248	100%	5,370	0	114	114			95.6 J		60.3
Beryllium	MG/KG	1	100%	150	0	114	114			0.65 J		0.59
Cadmium	MG/KG	2.5	94%	37	0	107	114			0.46 J		0.54
Calcium	MG/KG	216,000	100%		NA	114	114			4170 J		23800
Chromium	MG/KG	44.5	100%		NA	113	113			16.5 J		17.4 J
Cobalt	MG/KG	16.8	100%	903	0	114	114			9 J		9.3
Copper	MG/KG	131	100%	3,130	0	114	114			17.7 J		20.5
Iron	MG/KG	51,100	100%	38,600 [d]	2	114	114			20900 J		22400
Lead	MG/KG	469	100%	400	1	114	114	13.3 J		14.2 J		12.7 J
Magnesium	MG/KG	25200 [1]	100%		NA	114	114			3410 J		7290
Manganese	MG/KG	1,540	100%	1,760	0	114	114			573 J		489
Mercury	MG/KG	0.327	99%	23	0	113	114			0.037		0.03
Nickel	MG/KG	38.6	100%	1,560	0	114	114			21.8 J		26.3 J
Potassium	MG/KG	1,750	100%		NA	114	114			1080 J		1040 J
Selenium	MG/KG	3.4	25%	390	0	28	114			1.9 J		0.65 U

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Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLC701	11EXFLC801	11EXFLC901	11EXFLD001	11EXFLD1001
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLC702	11EXFLC802	11EXFLC901	11EXFLD001	11EXFLD1001
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/22/2006	11/22/2006	11/6/2006	12/15/2006	11/9/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Silver	MG/KG	2.2	5%	390	0	6	114			0.18 UJ		0.17 U
Sodium	MG/KG	164	75%		NA	86	114			167 UJ		73.5 J
Thallium	MG/KG	2.1	25%	5.2	0	28	114			1.6 J		0.73 U
Vanadium	MG/KG	31.6	100%	78.2	0	114	114			19.3 J		18.6
Zinc	MG/KG	591	100%	23,500	0	114	114			74.9 J		85.1 J

Notes:
(1) Maximum value came from sample-duplicate pair averaged value.
(2) The cleanup goal (CUG) values were based on the following criteria:
  a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046, Revised January 24, 1994.
  b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
  c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
  d. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
(3) The number of exceedances is not applicable (NA) for parameters without site-specific CUGs.
(4) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLD101	11EXFLD1101	11EXFLD201	11EXFLD201	11EXFLD301
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLD102	11EXFLD1101	11EXFLD201	11EXFLD201V	11EXFLD301
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/21/2006	11/9/2006	11/17/2006	11/22/2006	11/17/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds												
1,1,1-Trichloroethane	UG/KG	0	0%	800	0	0	114		6 U		10 U	
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	600	0	0	114		6 U		10 U	
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		NA	0	114		6 U		10 U	
1,1,2-Trichloroethane	UG/KG	0	0%		NA	0	114		6 U		10 U	
1,1-Dichloroethane	UG/KG	0	0%	200	0	0	114		6 U		10 U	
1,1-Dichloroethene	UG/KG	0	0%	400	0	0	114		6 U		10 U	
1,2,3-Trichlorobenzene	UG/KG	0	0%		NA	0	114		6 U		10 U	
1,2,4-Trichlorobenzene	UG/KG	0	0%	3,400	0	0	114		6 U		10 U	
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		NA	0	114		6 U		10 U	
1,2-Dibromoethane	UG/KG	0	0%		NA	0	114		6 U		10 U	
1,2-Dichlorobenzene	UG/KG	0	0%	7,900	0	0	114		6 U		10 U	
1,2-Dichloroethane	UG/KG	0	0%	100	0	0	114		6 U		10 U	
1,2-Dichloropropane	UG/KG	0	0%		NA	0	114		6 U		10 U	
1,3-Dichlorobenzene	UG/KG	0	0%	1,600	0	0	114		6 U		10 U	
1,4-Dichlorobenzene	UG/KG	0	0%	8,500	0	0	114		6 U		10 U	
Acetone	UG/KG	67	2%	200	0	2	106		28 UR		50 U	
Benzene	UG/KG	0	0%	60	0	0	114		6 U		10 U	
Bromochloromethane	UG/KG	0	0%		NA	0	114		6 U		10 U	
Bromodichloromethane	UG/KG	0	0%		NA	0	114		6 U		10 U	
Bromoform	UG/KG	0	0%		NA	0	114		6 U		10 U	
Carbon disulfide	UG/KG	0	0%	2,700	0	0	114		6 U		10 U	
Carbon tetrachloride	UG/KG	0	0%	600	0	0	114		6 U		10 U	
Chlorobenzene	UG/KG	0	0%	1,700	0	0	114		6 U		10 U	
Chlorodibromomethane	UG/KG	0	0%		NA	0	114		6 U		10 U	
Chloroethane	UG/KG	0	0%	1,900	0	0	114		11 U		20 U	
Chloroform	UG/KG	0	0%	300	0	0	114		6 U		10 U	
Cis-1,2-Dichloroethene	UG/KG	2	1%		NA	1	114		6 U		10 U	
Cis-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114		6 U		10 U	
Cyclohexane	UG/KG	0	0%		NA	0	114		6 U		10 U	
Dichlorodifluoromethane	UG/KG	2.25 [1]	4%		NA	5	114		6 U		10 U	
Ethyl benzene	UG/KG	0	0%	5,500	0	0	114		6 U		10 U	
Isopropylbenzene	UG/KG	0	0%		NA	0	114		6 U		10 U	
Methyl Acetate	UG/KG	0	0%		NA	0	114		6 UJ		10 UJ	
Methyl Tertbutyl Ether	UG/KG	0	0%		NA	0	114		6 UJ		10 UJ	
Methyl bromide	UG/KG	0	0%		NA	0	89		11 UR		20 UR	
Methyl butyl ketone	UG/KG	0	0%		NA	0	114		28 U		50 U	
Methyl chloride	UG/KG	0	0%		NA	0	114		11 U		20 U	
Methyl cyclohexane	UG/KG	0	0%		NA	0	114		6 U		10 U	
Methyl ethyl ketone	UG/KG	0	0%	300	0	0	114		28 UJ		50 U	

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLD101	11EXFLD1101	11EXFLD201	11EXFLD201	11EXFLD301
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLD102	11EXFLD1101	11EXFLD201	11EXFLD201V	11EXFLD301
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/21/2006	11/9/2006	11/17/2006	11/22/2006	11/17/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Methyl isobutyl ketone	UG/KG	0	0%	1,000	0	0	114		28 U		50 U	
Methylene chloride	UG/KG	49	89%	100	0	102	114		11		30 J	
Styrene	UG/KG	0	0%		NA	0	114		6 U		10 U	
Tetrachloroethene	UG/KG	2	2%	1,400	0	2	114		6 U		10 U	
Toluene	UG/KG	0	0%	1,500	0	0	114		6 U		10 U	
Total Xylenes	UG/KG	0	0%	1,200	0	0	114		17 U		30 U	
Trans-1,2-Dichloroethene	UG/KG	0	0%	300	0	0	114		6 UJ		10 UJ	
Trans-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114		6 U		10 U	
Trichloroethene	UG/KG	77	19%	700	0	22	114		6 U		10 U	
Trichlorofluoromethane	UG/KG	0	0%		NA	0	114		6 U		10 UJ	
Vinyl chloride	UG/KG	0	0%	200	0	0	114		11 U		20 U	
Carcinogenic PAHs												
Benzo(a)anthracene	UG/KG	260,000	52%		NA	66	127	77 J	4800	980		31 J
Benzo(a)pyrene	UG/KG	240,000	49%		NA	62	127	67 J	3700 J	1000		400 U
Benzo(b)fluoranthene	UG/KG	310,000	51%		NA	65	127	99 J	7400	2100		25 J
Benzo(k)fluoranthene	UG/KG	59,000	24%		NA	30	127	41 J	1700 J	400 U		400 U
Chrysene	UG/KG	240,000	50%		NA	64	127	85 J	5500	1300		25 J
Dibenz(a,h)anthracene	UG/KG	40,000	35%		NA	44	127	380 U	850 J	180 J		400 U
Indeno(1,2,3-cd)pyrene	UG/KG	150,000	46%		NA	58	127	52 J	2800 J	800		400 U
BTE (calculated)	MG/KG	355	94%	10 [b]	8	127	135	0.28	6.1	1.6		0.43
Metals												
Aluminum	MG/KG	17,500	100%	76,100	0	114	114		10400	12400		15900
Antimony	MG/KG	11.3	18%	31	0	21	114		5.5 J	0.75 U		0.77 U
Arsenic	MG/KG	19.5	100%	21.5 [d]	0	114	114		7.2	6		5.3
Barium	MG/KG	248	100%	5,370	0	114	114		79.3	100 J		144 J
Beryllium	MG/KG	1	100%	150	0	114	114		0.54	0.59		0.92
Cadmium	MG/KG	2.5	94%	37	0	107	114		0.86	0.23		0.34
Calcium	MG/KG	216,000	100%		NA	114	114		18100	2540		2090
Chromium	MG/KG	44.5	100%		NA	113	113		18.7 J	18.4		19.7
Cobalt	MG/KG	16.8	100%	903	0	114	114		10	10.4		10.4
Copper	MG/KG	131	100%	3,130	0	114	114		35.5	22		18.6
Iron	MG/KG	51,100	100%	38,600 [d]	2	114	114		23200	24700		24500
Lead	MG/KG	469	100%	400	1	114	114		162 J	12.7		14.5
Magnesium	MG/KG	25200 [1]	100%		NA	114	114		6080	4380 J		3340 J
Manganese	MG/KG	1,540	100%	1,760	0	114	114		1210	396		1290
Mercury	MG/KG	0.327	99%	23	0	113	114		0.058	0.036		0.044
Nickel	MG/KG	38.6	100%	1,560	0	114	114		28.6 J	26.9 J		23.1 J
Potassium	MG/KG	1,750	100%		NA	114	114		1110 J	1270 J		1320 J
Selenium	MG/KG	3.4	25%	390	0	28	114		0.72 U	0.64 U		0.66 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLD101	11EXFLD1101	11EXFLD201	11EXFLD201	11EXFLD301
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLD102	11EXFLD1101	11EXFLD201	11EXFLD201V	11EXFLD301
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/21/2006	11/9/2006	11/17/2006	11/22/2006	11/17/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Silver	MG/KG	2.2	5%	390	0	6	114		0.18 U	0.16 U		0.17 U
Sodium	MG/KG	164	75%		NA	86	114		42.7 J	48.2 J		63.5 J
Thallium	MG/KG	2.1	25%	5.2	0	28	114		0.8 U	0.71 U		0.74 U
Vanadium	MG/KG	31.6	100%	78.2	0	114	114		19.3	30.1		25.4
Zinc	MG/KG	591	100%	23,500	0	114	114		130 J	111 J		87.1 J

Notes:
(1) Maximum value came from sample-duplicate pair averaged value.
(2) The cleanup goal (CUG) values were based on the following criteria:
  a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM)
    HWR-94-4046, Revised January 24, 1994.
  b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
  c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
  d. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
(3) The number of exceedances is not applicable (NA) for parameters without site-specific CUGs.
(4) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLD301	11EXFLD401	11EXFLD401	11EXFLD501	11EXFLD501
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLD301V	11EXFLD401	11EXFLD401V	11EXFLD501	11EXFLD501V
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/22/2006	11/17/2006	11/22/2006	11/17/2006	11/22/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds												
1,1,1-Trichloroethane	UG/KG	0	0%	800	0	0	114	8 U		9 U		6 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	600	0	0	114	8 U		9 U		6 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		NA	0	114	8 U		9 U		6 U
1,1,2-Trichloroethane	UG/KG	0	0%		NA	0	114	8 U		9 U		6 U
1,1-Dichloroethane	UG/KG	0	0%	200	0	0	114	8 U		9 U		6 U
1,1-Dichloroethene	UG/KG	0	0%	400	0	0	114	8 U		9 U		6 U
1,2,3-Trichlorobenzene	UG/KG	0	0%		NA	0	114	8 U		9 U		6 U
1,2,4-Trichlorobenzene	UG/KG	0	0%	3,400	0	0	114	8 U		9 U		6 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		NA	0	114	8 U		9 U		6 U
1,2-Dibromoethane	UG/KG	0	0%		NA	0	114	8 U		9 U		6 U
1,2-Dichlorobenzene	UG/KG	0	0%	7,900	0	0	114	8 U		9 U		6 U
1,2-Dichloroethane	UG/KG	0	0%	100	0	0	114	8 U		9 U		6 U
1,2-Dichloropropane	UG/KG	0	0%		NA	0	114	8 U		9 U		6 U
1,3-Dichlorobenzene	UG/KG	0	0%	1,600	0	0	114	8 U		9 U		6 U
1,4-Dichlorobenzene	UG/KG	0	0%	8,500	0	0	114	8 U		9 U		6 U
Acetone	UG/KG	67	2%	200	0	2	106	43 U		45 U		32 U
Benzene	UG/KG	0	0%	60	0	0	114	8 U		9 U		6 U
Bromochloromethane	UG/KG	0	0%		NA	0	114	8 U		9 U		6 U
Bromodichloromethane	UG/KG	0	0%		NA	0	114	8 U		9 U		6 U
Bromoform	UG/KG	0	0%		NA	0	114	8 U		9 U		6 U
Carbon disulfide	UG/KG	0	0%	2,700	0	0	114	8 U		9 U		6 U
Carbon tetrachloride	UG/KG	0	0%	600	0	0	114	8 U		9 U		6 U
Chlorobenzene	UG/KG	0	0%	1,700	0	0	114	8 U		9 U		6 U
Chlorodibromomethane	UG/KG	0	0%		NA	0	114	8 U		9 U		6 U
Chloroethane	UG/KG	0	0%	1,900	0	0	114	17 U		18 U		13 U
Chloroform	UG/KG	0	0%	300	0	0	114	8 U		9 U		6 U
Cis-1,2-Dichloroethene	UG/KG	2	1%		NA	1	114	8 U		9 U		6 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	8 U		9 U		6 U
Cyclohexane	UG/KG	0	0%		NA	0	114	8 U		9 U		6 U
Dichlorodifluoromethane	UG/KG	2.25 [1]	4%		NA	5	114	8 U		9 U		6 U
Ethyl benzene	UG/KG	0	0%	5,500	0	0	114	8 U		9 U		6 U
Isopropylbenzene	UG/KG	0	0%		NA	0	114	8 U		9 U		6 U
Methyl Acetate	UG/KG	0	0%		NA	0	114	8 UJ		9 UJ		6 U
Methyl Tertbutyl Ether	UG/KG	0	0%		NA	0	114	8 UJ		9 UJ		6 U
Methyl bromide	UG/KG	0	0%		NA	0	89	17 UR		18 UR		13 U
Methyl butyl ketone	UG/KG	0	0%		NA	0	114	43 U		45 U		32 U
Methyl chloride	UG/KG	0	0%		NA	0	114	17 U		18 U		13 U
Methyl cyclohexane	UG/KG	0	0%		NA	0	114	8 U		9 U		6 U
Methyl ethyl ketone	UG/KG	0	0%	300	0	0	114	43 U		45 U		32 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLD301	11EXFLD401	11EXFLD401	11EXFLD501	11EXFLD501
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLD301V	11EXFLD401	11EXFLD401V	11EXFLD501	11EXFLD501V
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/22/2006	11/17/2006	11/22/2006	11/17/2006	11/22/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Methyl isobutyl ketone	UG/KG	0	0%	1,000	0	0	114	43 U		45 U		32 U
Methylene chloride	UG/KG	49	89%	100	0	102	114	24 J		22 J		20 J
Styrene	UG/KG	0	0%		NA	0	114	8 U		9 U		6 U
Tetrachloroethene	UG/KG	2	2%	1,400	0	2	114	8 U		9 U		6 U
Toluene	UG/KG	0	0%	1,500	0	0	114	8 U		9 U		6 U
Total Xylenes	UG/KG	0	0%	1,200	0	0	114	26 U		27 U		19 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	300	0	0	114	8 UJ		9 UJ		6 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	8 U		9 U		6 U
Trichloroethene	UG/KG	77	19%	700	0	22	114	8 U		9 U		6 U
Trichlorofluoromethane	UG/KG	0	0%		NA	0	114	8 UJ		9 UJ		6 U
Vinyl chloride	UG/KG	0	0%	200	0	0	114	17 U		18 U		13 U
Carcinogenic PAHs												
Benzo(a)anthracene	UG/KG	260,000	52%		NA	66	127		410 U		390 U	
Benzo(a)pyrene	UG/KG	240,000	49%		NA	62	127		410 U		390 U	
Benzo(b)fluoranthene	UG/KG	310,000	51%		NA	65	127		410 U		390 U	
Benzo(k)fluoranthene	UG/KG	59,000	24%		NA	30	127		410 U		390 U	
Chrysene	UG/KG	240,000	50%		NA	64	127		410 U		390 U	
Dibenz(a,h)anthracene	UG/KG	40,000	35%		NA	44	127		410 U		390 U	
Indeno(1,2,3-cd)pyrene	UG/KG	150,000	46%		NA	58	127		410 U		390 U	
BTE (calculated)	MG/KG	355	94%	10 [b]	8	127	135		0.48		0.45	
Metals												
Aluminum	MG/KG	17,500	100%	76,100	0	114	114		10400		16100	
Antimony	MG/KG	11.3	18%	31	0	21	114		0.76 U		0.84 U	
Arsenic	MG/KG	19.5	100%	21.5 [d]	0	114	114		5.9		7.5	
Barium	MG/KG	248	100%	5,370	0	114	114		72.4 J		169 J	
Beryllium	MG/KG	1	100%	150	0	114	114		0.51		0.83	
Cadmium	MG/KG	2.5	94%	37	0	107	114		0.26		0.36	
Calcium	MG/KG	216,000	100%		NA	114	114		2140		3250	
Chromium	MG/KG	44.5	100%		NA	113	113		15		21.6	
Cobalt	MG/KG	16.8	100%	903	0	114	114		9.1		11.7	
Copper	MG/KG	131	100%	3,130	0	114	114		23.8		19.6	
Iron	MG/KG	51,100	100%	38,600 [d]	2	114	114		21900		30700	
Lead	MG/KG	469	100%	400	1	114	114		14.2		28.4	
Magnesium	MG/KG	25200 [1]	100%		NA	114	114		3350 J		3860 J	
Manganese	MG/KG	1,540	100%	1,760	0	114	114		639		1540	
Mercury	MG/KG	0.327	99%	23	0	113	114		0.043		0.048	
Nickel	MG/KG	38.6	100%	1,560	0	114	114		24.9 J		28.1 J	
Potassium	MG/KG	1,750	100%		NA	114	114		1200 J		1710 J	
Selenium	MG/KG	3.4	25%	390	0	28	114		0.65 U		0.72 U	

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLD301	11EXFLD401	11EXFLD401	11EXFLD501	11EXFLD501
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLD301V	11EXFLD401	11EXFLD401V	11EXFLD501	11EXFLD501V
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/22/2006	11/17/2006	11/22/2006	11/17/2006	11/22/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Silver	MG/KG	2.2	5%	390	0	6	114		0.16 U		0.18 U	
Sodium	MG/KG	164	75%		NA	86	114		50.4 J		56.4 J	
Thallium	MG/KG	2.1	25%	5.2	0	28	114		0.72 U		0.81 U	
Vanadium	MG/KG	31.6	100%	78.2	0	114	114		19		27.2	
Zinc	MG/KG	591	100%	23,500	0	114	114		87.6 J		160 J	

Notes:
(1) Maximum value came from sample-duplicate pair averaged value.
(2) The cleanup goal (CUG) values were based on the following criteria:
  a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM)
    HWR-94-4046, Revised January 24, 1994.
  b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
  c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
  d. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
(3) The number of exceedances is not applicable (NA) for parameters without site-specific CUGs.
(4) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLD601	11EXFLD701	11EXFLD801	11EXFLD901	11EXFLE1001
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLD601	11EXFLD701	11EXFLD801	11EXFLD901	11EXFLE1002
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/27/2006	11/9/2006	11/9/2006	11/9/2006	11/9/2006
QC CODE								SA	SA	SA	SA	DU
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds												
1,1,1-Trichloroethane	UG/KG	0	0%	800	0	0	114	4 U	6 U	4 U	5 U	4 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	600	0	0	114	4 U	6 U	4 U	5 U	4 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		NA	0	114	4 U	6 U	4 U	5 U	4 U
1,1,2-Trichloroethane	UG/KG	0	0%		NA	0	114	4 U	6 U	4 U	5 U	4 U
1,1-Dichloroethane	UG/KG	0	0%	200	0	0	114	4 U	6 U	4 U	5 U	4 U
1,1-Dichloroethene	UG/KG	0	0%	400	0	0	114	4 U	6 U	4 U	5 U	4 U
1,2,3-Trichlorobenzene	UG/KG	0	0%		NA	0	114	4 U	6 U	4 U	5 U	4 U
1,2,4-Trichlorobenzene	UG/KG	0	0%	3,400	0	0	114	4 U	6 U	4 U	5 U	4 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		NA	0	114	4 U	6 U	4 U	5 U	4 U
1,2-Dibromoethane	UG/KG	0	0%		NA	0	114	4 U	6 U	4 U	5 U	4 U
1,2-Dichlorobenzene	UG/KG	0	0%	7,900	0	0	114	4 U	6 U	4 U	5 U	4 U
1,2-Dichloroethane	UG/KG	0	0%	100	0	0	114	4 U	6 U	4 U	5 U	4 U
1,2-Dichloropropane	UG/KG	0	0%		NA	0	114	4 U	6 U	4 U	5 U	4 U
1,3-Dichlorobenzene	UG/KG	0	0%	1,600	0	0	114	4 U	6 U	4 U	5 U	4 U
1,4-Dichlorobenzene	UG/KG	0	0%	8,500	0	0	114	4 U	6 U	4 U	5 U	4 U
Acetone	UG/KG	67	2%	200	0	2	106	22 U	28 UR	22 UR	27 UR	19 UR
Benzene	UG/KG	0	0%	60	0	0	114	4 U	6 U	4 U	5 U	4 U
Bromochloromethane	UG/KG	0	0%		NA	0	114	4 U	6 U	4 U	5 U	4 U
Bromodichloromethane	UG/KG	0	0%		NA	0	114	4 U	6 U	4 U	5 U	4 U
Bromoform	UG/KG	0	0%		NA	0	114	4 U	6 U	4 U	5 U	4 U
Carbon disulfide	UG/KG	0	0%	2,700	0	0	114	4 U	6 U	4 U	5 U	4 U
Carbon tetrachloride	UG/KG	0	0%	600	0	0	114	4 U	6 U	4 U	5 U	4 U
Chlorobenzene	UG/KG	0	0%	1,700	0	0	114	4 U	6 U	4 U	5 U	4 U
Chlorodibromomethane	UG/KG	0	0%		NA	0	114	4 U	6 U	4 U	5 U	4 U
Chloroethane	UG/KG	0	0%	1,900	0	0	114	9 U	11 U	9 U	11 U	8 U
Chloroform	UG/KG	0	0%	300	0	0	114	4 U	6 U	4 U	5 U	4 U
Cis-1,2-Dichloroethene	UG/KG	2	1%		NA	1	114	4 U	6 U	4 U	5 U	4 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	4 U	6 U	4 U	5 U	4 U
Cyclohexane	UG/KG	0	0%		NA	0	114	4 U	6 U	4 U	5 U	4 U
Dichlorodifluoromethane	UG/KG	2.25 [1]	4%		NA	5	114	4 U	2 J	4 U	2 J	1 J
Ethyl benzene	UG/KG	0	0%	5,500	0	0	114	4 U	6 U	4 U	5 U	4 U
Isopropylbenzene	UG/KG	0	0%		NA	0	114	4 U	6 U	4 U	5 U	4 U
Methyl Acetate	UG/KG	0	0%		NA	0	114	4 U	6 UJ	4 UJ	5 UJ	4 UJ
Methyl Tertbutyl Ether	UG/KG	0	0%		NA	0	114	4 U	6 UJ	4 UJ	5 UJ	4 UJ
Methyl bromide	UG/KG	0	0%		NA	0	89	9 UJ	11 UR	9 UR	11 UR	8 UR
Methyl butyl ketone	UG/KG	0	0%		NA	0	114	22 U	28 U	22 U	27 U	19 U
Methyl chloride	UG/KG	0	0%		NA	0	114	9 U	11 U	9 U	11 U	8 U
Methyl cyclohexane	UG/KG	0	0%		NA	0	114	4 U	6 U	4 U	5 U	4 U
Methyl ethyl ketone	UG/KG	0	0%	300	0	0	114	22 U	28 UJ	22 UJ	27 UJ	19 UJ

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLD601	11EXFLD701	11EXFLD801	11EXFLD901	11EXFLE1001
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLD601	11EXFLD701	11EXFLD801	11EXFLD901	11EXFLE1002
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/27/2006	11/9/2006	11/9/2006	11/9/2006	11/9/2006
QC CODE								SA	SA	SA	SA	DU
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Methyl isobutyl ketone	UG/KG	0	0%	1,000	0	0	114	22 U	28 U	22 U	27 U	19 U
Methylene chloride	UG/KG	49	89%	100	0	102	114	6 J	16	12	16	14
Styrene	UG/KG	0	0%		NA	0	114	4 U	6 U	4 U	5 U	4 U
Tetrachloroethene	UG/KG	2	2%	1,400	0	2	114	4 U	6 U	4 U	5 U	4 U
Toluene	UG/KG	0	0%	1,500	0	0	114	4 U	6 U	4 U	5 U	4 U
Total Xylenes	UG/KG	0	0%	1,200	0	0	114	13 U	16 U	13 U	16 U	12 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	300	0	0	114	4 U	6 UJ	4 UJ	5 UJ	4 UJ
Trans-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	4 U	6 U	4 U	5 U	4 U
Trichloroethene	UG/KG	77	19%	700	0	22	114	4 U	6 U	4 U	5 U	4 U
Trichlorofluoromethane	UG/KG	0	0%		NA	0	114	4 U	6 U	4 U	5 U	4 U
Vinyl chloride	UG/KG	0	0%	200	0	0	114	9 U	11 U	9 U	11 U	8 U
Carcinogenic PAHs												
Benzo(a)anthracene	UG/KG	260,000	52%		NA	66	127	360 U	380 J	20 J	420 U	350 U
Benzo(a)pyrene	UG/KG	240,000	49%		NA	62	127	360 U	350 J	360 U	420 U	350 U
Benzo(b)fluoranthene	UG/KG	310,000	51%		NA	65	127	360 U	400	20 J	420 U	350 U
Benzo(k)fluoranthene	UG/KG	59,000	24%		NA	30	127	360 U	130 J	360 U	420 U	350 U
Chrysene	UG/KG	240,000	50%		NA	64	127	360 U	350 J	21 J	420 U	350 U
Dibenz(a,h)anthracene	UG/KG	40,000	35%		NA	44	127	360 U	64 J	360 U	420 U	350 U
Indeno(1,2,3-cd)pyrene	UG/KG	150,000	46%		NA	58	127	360 U	170 J	360 U	420 U	350 U
BTE (calculated)	MG/KG	355	94%	10 [b]	8	127	135	0.42	0.51	0.38	0.49	0.41
Metals												
Aluminum	MG/KG	17,500	100%	76,100	0	114	114	6770 J	12000	10100	11600	6700
Antimony	MG/KG	11.3	18%	31	0	21	114	0.66 UJ	0.85 U	0.77 U	0.87 U	0.67 U
Arsenic	MG/KG	19.5	100%	21.5 [d]	0	114	114	3.5	5.4	5.2	5.2	5.2
Barium	MG/KG	248	100%	5,370	0	114	114	23.3 J	119	60	89.2	32.3
Beryllium	MG/KG	1	100%	150	0	114	114	0.32	0.74	0.53	0.64	0.42
Cadmium	MG/KG	2.5	94%	37	0	107	114	0.39	0.62	0.48	1.1	0.42
Calcium	MG/KG	216,000	100%		NA	114	114	61800 J	3460	14700	3650	75300
Chromium	MG/KG	44.5	100%		NA	113	113	10.8 J	16 J	15.3 J	16.6 J	9.7 J
Cobalt	MG/KG	16.8	100%	903	0	114	114	6.1 J	9.7	9.9	9.3	7.8
Copper	MG/KG	131	100%	3,130	0	114	114	13.6	19.3	22.6	17.5	17.5
Iron	MG/KG	51,100	100%	38,600 [d]	2	114	114	15200 J	21900	20200	19800 J	17900
Lead	MG/KG	469	100%	400	1	114	114	20.4 J	23.6 J	11.2 J	14.7 J	9 J
Magnesium	MG/KG	25200 [1]	100%		NA	114	114	7310 J	2870	6670	3300	26200
Manganese	MG/KG	1,540	100%	1,760	0	114	114	325 J	1120	394	278	410
Mercury	MG/KG	0.327	99%	23	0	113	114	0.01 J	0.041	0.104	0.066	0.004 U
Nickel	MG/KG	38.6	100%	1,560	0	114	114	18.3 J	21.8 J	27.5 J	21.5 J	19.2 J
Potassium	MG/KG	1,750	100%		NA	114	114	710 J	1070 J	1170 J	1250 J	760 J
Selenium	MG/KG	3.4	25%	390	0	28	114	0.57 U	0.73 U	0.65 U	0.75 U	0.58 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLD601	11EXFLD701	11EXFLD801	11EXFLD901	11EXFLE1001
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLD601	11EXFLD701	11EXFLD801	11EXFLD901	11EXFLE1002
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/27/2006	11/9/2006	11/9/2006	11/9/2006	11/9/2006
QC CODE								SA	SA	SA	SA	DU
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Silver	MG/KG	2.2	5%	390	0	6	114	0.48 U	0.18 U	0.17 U	0.19 U	0.15 U
Sodium	MG/KG	164	75%		NA	86	114	90.6 J	35.7 U	53 J	73.4 J	107 J
Thallium	MG/KG	2.1	25%	5.2	0	28	114	0.63 U	0.81 U	0.73 U	0.84 U	0.65 U
Vanadium	MG/KG	31.6	100%	78.2	0	114	114	11.1 J	20.2	17.5	19.9	12.4
Zinc	MG/KG	591	100%	23,500	0	114	114	354 J	84.1 J	78.1 J	85.3 J	84.2 J

Notes:
(1) Maximum value came from sample-duplicate pair averaged value.
(2) The cleanup goal (CUG) values were based on the following criteria:
  a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM)
    HWR-94-4046, Revised January 24, 1994.
  b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
  c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
  d. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
(3) The number of exceedances is not applicable (NA) for parameters without site-specific CUGs.
(4) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLE1001	11EXFLE101	11EXFLE1101	11EXFLE201	11EXFLE201
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLE1001	11EXFLE101	11EXFLE1101	11EXFLE201	11EXFLE201V
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/9/2006	11/27/2006	11/9/2006	11/17/2006	11/22/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds												
1,1,1-Trichloroethane	UG/KG	0	0%	800	0	0	114	4 U	6 U	5 U		8 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	600	0	0	114	4 U	6 U	5 U		8 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		NA	0	114	4 U	6 U	5 U		8 U
1,1,2-Trichloroethane	UG/KG	0	0%		NA	0	114	4 U	6 U	5 U		8 U
1,1-Dichloroethane	UG/KG	0	0%	200	0	0	114	4 U	6 U	5 U		8 U
1,1-Dichloroethene	UG/KG	0	0%	400	0	0	114	4 U	6 U	5 U		8 U
1,2,3-Trichlorobenzene	UG/KG	0	0%		NA	0	114	4 U	6 U	5 U		8 U
1,2,4-Trichlorobenzene	UG/KG	0	0%	3,400	0	0	114	4 U	6 U	5 U		8 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		NA	0	114	4 U	6 U	5 U		8 U
1,2-Dibromoethane	UG/KG	0	0%		NA	0	114	4 U	6 U	5 U		8 U
1,2-Dichlorobenzene	UG/KG	0	0%	7,900	0	0	114	4 U	6 U	5 U		8 U
1,2-Dichloroethane	UG/KG	0	0%	100	0	0	114	4 U	6 U	5 U		8 U
1,2-Dichloropropane	UG/KG	0	0%		NA	0	114	4 U	6 U	5 U		8 U
1,3-Dichlorobenzene	UG/KG	0	0%	1,600	0	0	114	4 U	6 U	5 U		8 U
1,4-Dichlorobenzene	UG/KG	0	0%	8,500	0	0	114	4 U	6 U	5 U		8 U
Acetone	UG/KG	67	2%	200	0	2	106	20 UR	30 U	23 UR		39 U
Benzene	UG/KG	0	0%	60	0	0	114	4 U	6 U	5 U		8 U
Bromochloromethane	UG/KG	0	0%		NA	0	114	4 U	6 U	5 U		8 U
Bromodichloromethane	UG/KG	0	0%		NA	0	114	4 U	6 U	5 U		8 U
Bromoform	UG/KG	0	0%		NA	0	114	4 U	6 U	5 U		8 U
Carbon disulfide	UG/KG	0	0%	2,700	0	0	114	4 U	6 U	5 U		8 U
Carbon tetrachloride	UG/KG	0	0%	600	0	0	114	4 U	6 U	5 U		8 U
Chlorobenzene	UG/KG	0	0%	1,700	0	0	114	4 U	6 U	5 U		8 U
Chlorodibromomethane	UG/KG	0	0%		NA	0	114	4 U	6 U	5 U		8 U
Chloroethane	UG/KG	0	0%	1,900	0	0	114	8 U	12 U	9 U		16 U
Chloroform	UG/KG	0	0%	300	0	0	114	4 U	6 U	5 U		8 U
Cis-1,2-Dichloroethene	UG/KG	2	1%		NA	1	114	4 U	6 U	5 U		8 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	4 U	6 U	5 U		8 U
Cyclohexane	UG/KG	0	0%		NA	0	114	4 U	6 U	5 U		8 U
Dichlorodifluoromethane	UG/KG	2.25 [1]	4%		NA	5	114	4 U	6 U	2 J		8 U
Ethyl benzene	UG/KG	0	0%	5,500	0	0	114	4 U	6 U	5 U		8 U
Isopropylbenzene	UG/KG	0	0%		NA	0	114	4 U	6 U	5 U		8 U
Methyl Acetate	UG/KG	0	0%		NA	0	114	4 UJ	6 U	5 UJ		8 UJ
Methyl Tertbutyl Ether	UG/KG	0	0%		NA	0	114	4 UJ	6 U	5 UJ		8 UJ
Methyl bromide	UG/KG	0	0%		NA	0	89	8 UR	12 UJ	9 UR		16 UR
Methyl butyl ketone	UG/KG	0	0%		NA	0	114	20 U	30 U	23 U		39 U
Methyl chloride	UG/KG	0	0%		NA	0	114	8 U	12 U	9 U		16 U
Methyl cyclohexane	UG/KG	0	0%		NA	0	114	4 U	6 U	5 U		8 U
Methyl ethyl ketone	UG/KG	0	0%	300	0	0	114	20 UJ	30 U	23 UJ		39 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLE1001	11EXFLE101	11EXFLE1101	11EXFLE201	11EXFLE201
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLE1001	11EXFLE101	11EXFLE1101	11EXFLE201	11EXFLE201V
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/9/2006	11/27/2006	11/9/2006	11/17/2006	11/22/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Methyl isobutyl ketone	UG/KG	0	0%	1,000	0	0	114	20 U	30 U	23 U		39 U
Methylene chloride	UG/KG	49	89%	100	0	102	114	12	9 J	13		22 J
Styrene	UG/KG	0	0%		NA	0	114	4 U	6 U	5 U		8 U
Tetrachloroethene	UG/KG	2	2%	1,400	0	2	114	4 U	6 U	5 U		8 U
Toluene	UG/KG	0	0%	1,500	0	0	114	4 U	6 U	5 U		8 U
Total Xylenes	UG/KG	0	0%	1,200	0	0	114	12 U	18 U	14 U		24 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	300	0	0	114	4 UJ	6 U	5 UJ		8 UJ
Trans-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	4 U	6 U	5 U		8 U
Trichloroethene	UG/KG	77	19%	700	0	22	114	4 U	6 U	5 U		8 U
Trichlorofluoromethane	UG/KG	0	0%		NA	0	114	4 U	6 U	5 U		8 UJ
Vinyl chloride	UG/KG	0	0%	200	0	0	114	8 U	12 U	9 U		16 U
Carcinogenic PAHs												
Benzo(a)anthracene	UG/KG	260,000	52%		NA	66	127	28 J	4700	370 U	390 U	
Benzo(a)pyrene	UG/KG	240,000	49%		NA	62	127	18 J	4500	370 U	390 U	
Benzo(b)fluoranthene	UG/KG	310,000	51%		NA	65	127	33 J	5800	370 U	390 U	
Benzo(k)fluoranthene	UG/KG	59,000	24%		NA	30	127	360 U	2100	370 U	390 U	
Chrysene	UG/KG	240,000	50%		NA	64	127	28 J	4900	370 U	390 U	
Dibenz(a,h)anthracene	UG/KG	40,000	35%		NA	44	127	360 U	700 J	370 U	390 U	
Indeno(1,2,3-cd)pyrene	UG/KG	150,000	46%		NA	58	127	360 U	2800	370 U	390 U	
BTE (calculated)	MG/KG	355	94%	10 [b]	8	127	135	0.22	6.6	0.43	0.45	
Metals												
Aluminum	MG/KG	17,500	100%	76,100	0	114	114	7250	7260 J	10300	12300	
Antimony	MG/KG	11.3	18%	31	0	21	114	0.71 U	1.1 J	8.1 J	0.7 U	
Arsenic	MG/KG	19.5	100%	21.5 [d]	0	114	114	4.4	3.6	5.5	5.7	
Barium	MG/KG	248	100%	5,370	0	114	114	38.8	62.2 J	78.6	139 J	
Beryllium	MG/KG	1	100%	150	0	114	114	0.43	0.35	0.57	0.62	
Cadmium	MG/KG	2.5	94%	37	0	107	114	0.39	0.35	0.83	0.32	
Calcium	MG/KG	216,000	100%		NA	114	114	75400	2590 J	22600	2540	
Chromium	MG/KG	44.5	100%		NA	113	113	23.7 J	10.5 J	21.9 J	16.9	
Cobalt	MG/KG	16.8	100%	903	0	114	114	9.9	4.8 J	8.8	9.7	
Copper	MG/KG	131	100%	3,130	0	114	114	18.2	17.3	50.8	13.6	
Iron	MG/KG	51,100	100%	38,600 [d]	2	114	114	16100	13400 J	22600	22500	
Lead	MG/KG	469	100%	400	1	114	114	68.3 J	16.8 J	400 J	11.3	
Magnesium	MG/KG	25200 [1]	100%		NA	114	114	24200	1930 J	7030	3100 J	
Manganese	MG/KG	1,540	100%	1,760	0	114	114	514	163 J	268	905	
Mercury	MG/KG	0.327	99%	23	0	113	114	0.009 J	0.072	0.049	0.043	
Nickel	MG/KG	38.6	100%	1,560	0	114	114	23.3 J	12.7 J	31.7 J	22.6 J	
Potassium	MG/KG	1,750	100%		NA	114	114	826 J	706 J	1040 J	1070 J	
Selenium	MG/KG	3.4	25%	390	0	28	114	0.6 U	0.67 U	0.65 U	0.6 U	

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY							SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID							11EXFLE1001	11EXFLE101	11EXFLE1101	11EXFLE201	11EXFLE201
MATRIX							SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID							11EXFLE1001	11EXFLE101	11EXFLE1101	11EXFLE201	11EXFLE201V
SAMPLE DEPTH TO TOP OF SAMPLE							0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE							0.2	0.2	0.2	0.2	0.2
SAMPLE DATE							11/9/2006	11/27/2006	11/9/2006	11/17/2006	11/22/2006
QC CODE							SA	SA	SA	SA	SA
STUDY ID							IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Silver	MG/KG	2.2	5%	390	0	6	114	0.15 U	0.26 J	0.23 J	0.15 U	
Sodium	MG/KG	164	75%		NA	86	114	118 J	32.9 U	96.1 J	46.3 J	
Thallium	MG/KG	2.1	25%	5.2	0	28	114	0.68 U	1 J	0.73 U	0.67 U	
Vanadium	MG/KG	31.6	100%	78.2	0	114	114	11.9	13.8 J	22.9	21.3	
Zinc	MG/KG	591	100%	23,500	0	114	114	87.7 J	66.9 J	256 J	82.7 J	

Notes:
(1) Maximum value came from sample-duplicate pair averaged value.
(2) The cleanup goal (CUG) values were based on the following criteria:
  a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046, Revised January 24, 1994.
  b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
  c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
  d. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
(3) The number of exceedances is not applicable (NA) for parameters without site-specific CUGs.
(4) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLE301	11EXFLE401	11EXFLE501	11EXFLE601	11EXFLE701
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLE301	11EXFLE401	11EXFLE501	11EXFLE601	11EXFLE701
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/22/2006	11/22/2006	11/22/2006	11/22/2006	11/22/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds												
1,1,1-Trichloroethane	UG/KG	0	0%	800	0	0	114	12 U	10 U	11 U	14 U	15 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	600	0	0	114	12 U	10 U	11 U	14 U	15 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		NA	0	114	12 U	10 U	11 U	14 U	15 U
1,1,2-Trichloroethane	UG/KG	0	0%		NA	0	114	12 U	10 U	11 U	14 U	15 U
1,1-Dichloroethane	UG/KG	0	0%	200	0	0	114	12 U	10 U	11 U	14 U	15 U
1,1-Dichloroethene	UG/KG	0	0%	400	0	0	114	12 U	10 U	11 U	14 U	15 U
1,2,3-Trichlorobenzene	UG/KG	0	0%		NA	0	114	12 U	10 U	11 U	14 U	15 U
1,2,4-Trichlorobenzene	UG/KG	0	0%	3,400	0	0	114	12 U	10 U	11 U	14 U	15 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		NA	0	114	12 U	10 U	11 U	14 U	15 U
1,2-Dibromoethane	UG/KG	0	0%		NA	0	114	12 U	10 U	11 U	14 U	15 U
1,2-Dichlorobenzene	UG/KG	0	0%	7,900	0	0	114	12 U	10 U	11 U	14 U	15 U
1,2-Dichloroethane	UG/KG	0	0%	100	0	0	114	12 U	10 U	11 U	14 U	15 U
1,2-Dichloropropane	UG/KG	0	0%		NA	0	114	12 U	10 U	11 U	14 U	15 U
1,3-Dichlorobenzene	UG/KG	0	0%	1,600	0	0	114	12 U	10 U	11 U	14 U	15 U
1,4-Dichlorobenzene	UG/KG	0	0%	8,500	0	0	114	12 U	10 U	11 U	14 U	15 U
Acetone	UG/KG	67	2%	200	0	2	106	60 U	49 U	53 U	68 U	74 U
Benzene	UG/KG	0	0%	60	0	0	114	12 U	10 U	11 U	14 U	15 U
Bromochloromethane	UG/KG	0	0%		NA	0	114	12 U	10 U	11 U	14 U	15 U
Bromodichloromethane	UG/KG	0	0%		NA	0	114	12 U	10 U	11 U	14 U	15 U
Bromoform	UG/KG	0	0%		NA	0	114	12 U	10 U	11 U	14 U	15 U
Carbon disulfide	UG/KG	0	0%	2,700	0	0	114	12 U	10 U	11 U	14 U	15 U
Carbon tetrachloride	UG/KG	0	0%	600	0	0	114	12 U	10 U	11 U	14 U	15 U
Chlorobenzene	UG/KG	0	0%	1,700	0	0	114	12 U	10 U	11 U	14 U	15 U
Chlorodibromomethane	UG/KG	0	0%		NA	0	114	12 U	10 U	11 U	14 U	15 U
Chloroethane	UG/KG	0	0%	1,900	0	0	114	24 U	20 U	21 U	27 U	30 U
Chloroform	UG/KG	0	0%	300	0	0	114	12 U	10 U	11 U	14 U	15 U
Cis-1,2-Dichloroethene	UG/KG	2	1%		NA	1	114	12 U	10 U	11 U	14 U	15 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	12 U	10 U	11 U	14 U	15 U
Cyclohexane	UG/KG	0	0%		NA	0	114	12 U	10 U	11 U	14 U	15 U
Dichlorodifluoromethane	UG/KG	2.25 [1]	4%		NA	5	114	12 U	10 U	11 U	14 U	15 U
Ethyl benzene	UG/KG	0	0%	5,500	0	0	114	12 U	10 U	11 U	14 U	15 U
Isopropylbenzene	UG/KG	0	0%		NA	0	114	12 U	10 U	11 U	14 U	15 U
Methyl Acetate	UG/KG	0	0%		NA	0	114	12 U	10 U	11 U	14 U	15 U
Methyl Tertbutyl Ether	UG/KG	0	0%		NA	0	114	12 U	10 U	11 U	14 U	15 U
Methyl bromide	UG/KG	0	0%		NA	0	89	24 U	20 U	21 U	27 U	30 U
Methyl butyl ketone	UG/KG	0	0%		NA	0	114	60 U	49 U	53 U	68 U	74 U
Methyl chloride	UG/KG	0	0%		NA	0	114	24 U	20 U	21 U	27 U	30 U
Methyl cyclohexane	UG/KG	0	0%		NA	0	114	12 U	10 U	11 U	14 U	15 U
Methyl ethyl ketone	UG/KG	0	0%	300	0	0	114	60 U	49 U	53 U	68 U	74 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLE301	11EXFLE401	11EXFLE501	11EXFLE601	11EXFLE701
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLE301	11EXFLE401	11EXFLE501	11EXFLE601	11EXFLE701
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/22/2006	11/22/2006	11/22/2006	11/22/2006	11/22/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Methyl isobutyl ketone	UG/KG	0	0%	1,000	0	0	114	60 U	49 U	53 U	68 U	74 U
Methylene chloride	UG/KG	49	89%	100	0	102	114	39 J	30 J	31 J	44 J	48 J
Styrene	UG/KG	0	0%		NA	0	114	12 U	10 U	11 U	14 U	15 U
Tetrachloroethene	UG/KG	2	2%	1,400	0	2	114	12 U	10 U	11 U	14 U	15 U
Toluene	UG/KG	0	0%	1,500	0	0	114	12 U	10 U	11 U	14 U	15 U
Total Xylenes	UG/KG	0	0%	1,200	0	0	114	36 U	29 U	32 U	41 U	44 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	300	0	0	114	12 U	10 U	11 U	14 U	15 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	12 U	10 U	11 U	14 U	15 U
Trichloroethene	UG/KG	77	19%	700	0	22	114	12 U	10 U	11 U	14 U	15 U
Trichlorofluoromethane	UG/KG	0	0%		NA	0	114	12 U	10 U	11 U	14 U	15 U
Vinyl chloride	UG/KG	0	0%	200	0	0	114	24 U	20 U	21 U	27 U	30 U
Carcinogenic PAHs												
Benzo(a)anthracene	UG/KG	260,000	52%		NA	66	127	400 U	26 J	410 U	400 U	410 U
Benzo(a)pyrene	UG/KG	240,000	49%		NA	62	127	400 U	400 U	410 U	400 U	410 U
Benzo(b)fluoranthene	UG/KG	310,000	51%		NA	65	127	400 U	400 U	410 U	400 U	410 U
Benzo(k)fluoranthene	UG/KG	59,000	24%		NA	30	127	400 U	400 U	410 U	400 U	410 U
Chrysene	UG/KG	240,000	50%		NA	64	127	400 U	400 U	410 U	400 U	410 U
Dibenz(a,h)anthracene	UG/KG	40,000	35%		NA	44	127	400 U	400 U	410 U	400 U	410 U
Indeno(1,2,3-cd)pyrene	UG/KG	150,000	46%		NA	58	127	400 U	400 U	410 U	400 U	410 U
BTE (calculated)	MG/KG	355	94%	10 [b]	8	127	135	0.46	0.45	0.48	0.46	0.48
Metals												
Aluminum	MG/KG	17,500	100%	76,100	0	114	114	13100 J	9580 J	10100 J	13500 J	13000 J
Antimony	MG/KG	11.3	18%	31	0	21	114	0.85 UJ	0.84 UJ	16.9 U	0.81 UJ	0.83 UJ
Arsenic	MG/KG	19.5	100%	21.5 [d]	0	114	114	7.8 J	19.5 J	5.3 J	5.1 J	5.8 J
Barium	MG/KG	248	100%	5,370	0	114	114	87.6 J	105 J	72.7 J	91.2 J	127 J
Beryllium	MG/KG	1	100%	150	0	114	114	0.68 J	0.53 J	0.47 J	0.65 J	0.68 J
Cadmium	MG/KG	2.5	94%	37	0	107	114	0.35 J	0.44 J	0.2 J	0.24 J	0.3 J
Calcium	MG/KG	216,000	100%		NA	114	114	2600 J	2200 J	2870 J	6750 J	3080 J
Chromium	MG/KG	44.5	100%		NA	113	113	20.7 J	17.1 J	15.5 J	20.2 J	17.9 J
Cobalt	MG/KG	16.8	100%	903	0	114	114	16.8 J	10.4 J	9.6 J	10.7 J	9.7 J
Copper	MG/KG	131	100%	3,130	0	114	114	22.3 J	26.2 J	19.1 J	18 J	18.7 J
Iron	MG/KG	51,100	100%	38,600 [d]	2	114	114	30600 J	**51100** J	21500 J	26100 J	24500 J
Lead	MG/KG	469	100%	400	1	114	114	18.8 J	64 J	11.2 J	16.1 J	13.6 J
Magnesium	MG/KG	25200 [1]	100%		NA	114	114	4710 J	3220 J	3790 J	4640 J	3580 J
Manganese	MG/KG	1,540	100%	1,760	0	114	114	1380 J	377 J	420 J	637 J	1010 J
Mercury	MG/KG	0.327	99%	23	0	113	114	0.041	0.041	0.035	0.042	0.032
Nickel	MG/KG	38.6	100%	1,560	0	114	114	38.6 J	28.7 J	26.5 J	27.9 J	25 J
Potassium	MG/KG	1,750	100%		NA	114	114	1020 J	859 J	973 J	1250 J	1220 J
Selenium	MG/KG	3.4	25%	390	0	28	114	0.73 UJ	0.72 UJ	0.66 UJ	0.69 UJ	0.71 UJ

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY							SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID							11EXFLE301	11EXFLE401	11EXFLE501	11EXFLE601	11EXFLE701
MATRIX							SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID							11EXFLE301	11EXFLE401	11EXFLE501	11EXFLE601	11EXFLE701
SAMPLE DEPTH TO TOP OF SAMPLE							0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE							0.2	0.2	0.2	0.2	0.2
SAMPLE DATE							11/22/2006	11/22/2006	11/22/2006	11/22/2006	11/22/2006
QC CODE							SA	SA	SA	SA	SA
STUDY ID							IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Silver	MG/KG	2.2	5%	390	0	6	114	0.19 UJ	0.64 J	0.17 UJ	0.18 UJ	0.18 UJ
Sodium	MG/KG	164	75%		NA	86	114	40.2 J	53.9 J	41.1 J	42.3 J	58.8 J
Thallium	MG/KG	2.1	25%	5.2	0	28	114	0.82 UJ	0.8 UJ	0.74 UJ	0.77 UJ	0.8 UJ
Vanadium	MG/KG	31.6	100%	78.2	0	114	114	22.3 J	19.4 J	18.3 J	22.6 J	22.3 J
Zinc	MG/KG	591	100%	23,500	0	114	114	108 J	143 J	79.1 J	93.7 J	77.7 J

Notes:
(1) Maximum value came from sample-duplicate pair averaged value.
(2) The cleanup goal (CUG) values were based on the following criteria:
  a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046, Revised January 24, 1994.
  b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
  c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
  d. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
(3) The number of exceedances is not applicable (NA) for parameters without site-specific CUGs.
(4) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLE801	11EXFLE802	11EXFLE901	11EXFLF1001	11EXFLF1101
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLE801	11EXFLE802	11EXFLE901	11EXFLF1001	11EXFLF1101
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/10/2006	11/22/2006	11/9/2006	11/10/2006	11/10/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds												
1,1,1-Trichloroethane	UG/KG	0	0%	800	0	0	114	4 U	15 U	5 U	4 U	4 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	600	0	0	114	4 U	15 U	5 U	4 U	4 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		NA	0	114	4 U	15 U	5 U	4 U	4 U
1,1,2-Trichloroethane	UG/KG	0	0%		NA	0	114	4 U	15 U	5 U	4 U	4 U
1,1-Dichloroethane	UG/KG	0	0%	200	0	0	114	4 U	15 U	5 U	4 U	4 U
1,1-Dichloroethene	UG/KG	0	0%	400	0	0	114	4 U	15 U	5 U	4 U	4 U
1,2,3-Trichlorobenzene	UG/KG	0	0%		NA	0	114	4 U	15 U	5 U	4 U	4 U
1,2,4-Trichlorobenzene	UG/KG	0	0%	3,400	0	0	114	4 U	15 U	5 U	4 U	4 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		NA	0	114	4 U	15 U	5 U	4 U	4 U
1,2-Dibromoethane	UG/KG	0	0%		NA	0	114	4 U	15 U	5 U	4 U	4 U
1,2-Dichlorobenzene	UG/KG	0	0%	7,900	0	0	114	4 U	15 U	5 U	4 U	4 U
1,2-Dichloroethane	UG/KG	0	0%	100	0	0	114	4 U	15 U	5 U	4 U	4 U
1,2-Dichloropropane	UG/KG	0	0%		NA	0	114	4 U	15 U	5 U	4 U	4 U
1,3-Dichlorobenzene	UG/KG	0	0%	1,600	0	0	114	4 U	15 U	5 U	4 U	4 U
1,4-Dichlorobenzene	UG/KG	0	0%	8,500	0	0	114	4 U	15 U	5 U	4 U	4 U
Acetone	UG/KG	67	2%	200	0	2	106	21 U	76 U	25 UR	23 U	21 U
Benzene	UG/KG	0	0%	60	0	0	114	4 U	15 U	5 U	4 U	4 U
Bromochloromethane	UG/KG	0	0%		NA	0	114	4 U	15 U	5 U	4 U	4 U
Bromodichloromethane	UG/KG	0	0%		NA	0	114	4 U	15 U	5 U	4 U	4 U
Bromoform	UG/KG	0	0%		NA	0	114	4 U	15 U	5 U	4 U	4 U
Carbon disulfide	UG/KG	0	0%	2,700	0	0	114	4 U	15 U	5 U	4 U	4 U
Carbon tetrachloride	UG/KG	0	0%	600	0	0	114	4 U	15 U	5 U	4 U	4 U
Chlorobenzene	UG/KG	0	0%	1,700	0	0	114	4 U	15 U	5 U	4 U	4 U
Chlorodibromomethane	UG/KG	0	0%		NA	0	114	4 U	15 U	5 U	4 U	4 U
Chloroethane	UG/KG	0	0%	1,900	0	0	114	8 U	30 U	10 U	9 U	8 U
Chloroform	UG/KG	0	0%	300	0	0	114	4 U	15 U	5 U	4 U	4 U
Cis-1,2-Dichloroethene	UG/KG	2	1%		NA	1	114	2 J	15 U	5 U	4 U	4 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	4 U	15 U	5 U	4 U	4 U
Cyclohexane	UG/KG	0	0%		NA	0	114	4 U	15 U	5 U	4 U	4 U
Dichlorodifluoromethane	UG/KG	2.25 [1]	4%		NA	5	114	4 U	15 U	2 J	4 U	4 U
Ethyl benzene	UG/KG	0	0%	5,500	0	0	114	4 U	15 U	5 U	4 U	4 U
Isopropylbenzene	UG/KG	0	0%		NA	0	114	4 U	15 U	5 U	4 U	4 U
Methyl Acetate	UG/KG	0	0%		NA	0	114	4 U	15 U	5 UJ	4 U	4 U
Methyl Tertbutyl Ether	UG/KG	0	0%		NA	0	114	4 U	15 U	5 UJ	4 U	4 U
Methyl bromide	UG/KG	0	0%		NA	0	89	8 U	30 U	10 UR	9 U	8 U
Methyl butyl ketone	UG/KG	0	0%		NA	0	114	21 U	76 U	25 U	23 U	21 U
Methyl chloride	UG/KG	0	0%		NA	0	114	8 U	30 U	10 U	9 U	8 U
Methyl cyclohexane	UG/KG	0	0%		NA	0	114	4 U	15 U	5 U	4 U	4 U
Methyl ethyl ketone	UG/KG	0	0%	300	0	0	114	21 U	76 U	25 UJ	23 U	21 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLE801	11EXFLE802	11EXFLE901	11EXFLF1001	11EXFLF1101
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLE801	11EXFLE802	11EXFLE901	11EXFLF1001	11EXFLF1101
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/10/2006	11/22/2006	11/9/2006	11/10/2006	11/10/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Methyl isobutyl ketone	UG/KG	0	0%	1,000	0	0	114	21 U	76 U	25 U	23 U	21 U
Methylene chloride	UG/KG	49	89%	100	0	102	114	6 J	49 J	16	11 J	10 J
Styrene	UG/KG	0	0%		NA	0	114	4 U	15 U	5 U	4 U	4 U
Tetrachloroethene	UG/KG	2	2%	1,400	0	2	114	4 U	15 U	5 U	4 U	4 U
Toluene	UG/KG	0	0%	1,500	0	0	114	4 U	15 U	5 U	4 U	4 U
Total Xylenes	UG/KG	0	0%	1,200	0	0	114	13 U	46 U	15 U	14 U	13 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	300	0	0	114	4 U	15 U	5 UJ	4 U	4 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	4 U	15 U	5 U	4 U	4 U
Trichloroethene	UG/KG	77	19%	700	0	22	114	2 J	15 U	5 U	4 U	4 U
Trichlorofluoromethane	UG/KG	0	0%		NA	0	114	4 U	15 U	5 U	4 U	4 U
Vinyl chloride	UG/KG	0	0%	200	0	0	114	8 U	30 U	10 U	9 U	8 U
Carcinogenic PAHs												
Benzo(a)anthracene	UG/KG	260,000	52%		NA	66	127	390 U	400 U	73 J	69 J	44 J
Benzo(a)pyrene	UG/KG	240,000	49%		NA	62	127	390 U	400 U	56 J	58 J	33 J
Benzo(b)fluoranthene	UG/KG	310,000	51%		NA	65	127	390 U	400 U	74 J	99 J	46 J
Benzo(k)fluoranthene	UG/KG	59,000	24%		NA	30	127	390 U	400 U	30 J	34 J	360 U
Chrysene	UG/KG	240,000	50%		NA	64	127	390 U	400 U	68 J	78 J	41 J
Dibenz(a,h)anthracene	UG/KG	40,000	35%		NA	44	127	390 U	400 U	400 U	360 U	360 U
Indeno(1,2,3-cd)pyrene	UG/KG	150,000	46%		NA	58	127	390 U	400 U	38 J	46 J	23 J
BTE (calculated)	MG/KG	355	94%	10 [b]	8	127	135	0.45	0.46	0.28	0.26	0.23
Metals												
Aluminum	MG/KG	17,500	100%	76,100	0	114	114	13700	9580 J	11400	9470	11400
Antimony	MG/KG	11.3	18%	31	0	21	114	0.7 UJ	0.81 UJ	0.82 U	0.78 UJ	0.76 UJ
Arsenic	MG/KG	19.5	100%	21.5 [d]	0	114	114	5.5	4.5 J	5.5	5	6.8
Barium	MG/KG	248	100%	5,370	0	114	114	88.3 J	73.9 J	71.1	44.7 J	65.2 J
Beryllium	MG/KG	1	100%	150	0	114	114	0.66	0.46 J	0.66	0.47	0.54
Cadmium	MG/KG	2.5	94%	37	0	107	114	0.22	0.18 J	0.51	0.26	0.23
Calcium	MG/KG	216,000	100%		NA	114	114	3670	2730 J	4320	53300	34500
Chromium	MG/KG	44.5	100%		NA	113	113	19.7	14.3 J	16.6 J	15.1	17
Cobalt	MG/KG	16.8	100%	903	0	114	114	9.2 J	8.6 J	8.9	8.9 J	10.4 J
Copper	MG/KG	131	100%	3,130	0	114	114	20.4	18 J	19.1	27.3	22
Iron	MG/KG	51,100	100%	38,600 [d]	2	114	114	25700	20000 J	22500	19900	23000
Lead	MG/KG	469	100%	400	1	114	114	11.5	9.3 J	13.8 J	9.5	11.1
Magnesium	MG/KG	25200 [1]	100%		NA	114	114	4490	3440 J	3670	15700	9250
Manganese	MG/KG	1,540	100%	1,760	0	114	114	513 J	770 J	563	563 J	555 J
Mercury	MG/KG	0.327	99%	23	0	113	114	0.044	0.045	0.022	0.024	0.043
Nickel	MG/KG	38.6	100%	1,560	0	114	114	26.8 J	24.1 J	28.7 J	25.4 J	27.6 J
Potassium	MG/KG	1,750	100%		NA	114	114	1450 J	949 J	1100 J	1470 J	1640 J
Selenium	MG/KG	3.4	25%	390	0	28	114	1.6 J	0.69 UJ	0.7 U	1.2 J	1.8 J

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLE801	11EXFLE802	11EXFLE901	11EXFLF1001	11EXFLF1101
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLE801	11EXFLE802	11EXFLE901	11EXFLF1001	11EXFLF1101
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/10/2006	11/22/2006	11/9/2006	11/10/2006	11/10/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Silver	MG/KG	2.2	5%	390	0	6	114	0.15 U	0.18 UJ	0.18 U	0.17 U	0.17 U
Sodium	MG/KG	164	75%		NA	86	114	53.7 J	54.3 J	34.5 J	115 J	106 J
Thallium	MG/KG	2.1	25%	5.2	0	28	114	1.2 J	0.77 UJ	0.78 U	1 J	1 J
Vanadium	MG/KG	31.6	100%	78.2	0	114	114	23.6	17.1 J	18.9	16.7	18.6
Zinc	MG/KG	591	100%	23,500	0	114	114	84.7 J	74.7 J	95.7 J	133 J	81.9 J

Notes:
(1) Maximum value came from sample-duplicate pair averaged value.
(2) The cleanup goal (CUG) values were based on the following criteria:
  a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046, Revised January 24, 1994.
  b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
  c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
  d. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
(3) The number of exceedances is not applicable (NA) for parameters without site-specific CUGs.
(4) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLF201	11EXFLF301	11EXFLF401	11EXFLF501	11EXFLF601
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLF201	11EXFLF301	11EXFLF401	11EXFLF501	11EXFLF601
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/30/2006	11/27/2006	11/27/2006	11/27/2006	11/27/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds												
1,1,1-Trichloroethane	UG/KG	0	0%	800	0	0	114	5 U	6 U	4 U	5 U	5 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	600	0	0	114	5 U	6 U	4 U	5 U	5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		NA	0	114	5 U	6 U	4 U	5 U	5 U
1,1,2-Trichloroethane	UG/KG	0	0%		NA	0	114	5 U	6 U	4 U	5 U	5 U
1,1-Dichloroethane	UG/KG	0	0%	200	0	0	114	5 U	6 U	4 U	5 U	5 U
1,1-Dichloroethene	UG/KG	0	0%	400	0	0	114	5 U	6 U	4 U	5 U	5 U
1,2,3-Trichlorobenzene	UG/KG	0	0%		NA	0	114	5 U	6 U	4 U	5 U	5 U
1,2,4-Trichlorobenzene	UG/KG	0	0%	3,400	0	0	114	5 U	6 U	4 U	5 U	5 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		NA	0	114	5 U	6 U	4 U	5 U	5 U
1,2-Dibromoethane	UG/KG	0	0%		NA	0	114	5 U	6 U	4 U	5 U	5 U
1,2-Dichlorobenzene	UG/KG	0	0%	7,900	0	0	114	5 U	6 U	4 U	5 U	5 U
1,2-Dichloroethane	UG/KG	0	0%	100	0	0	114	5 U	6 U	4 U	5 U	5 U
1,2-Dichloropropane	UG/KG	0	0%		NA	0	114	5 U	6 U	4 U	5 U	5 U
1,3-Dichlorobenzene	UG/KG	0	0%	1,600	0	0	114	5 U	6 U	4 U	5 U	5 U
1,4-Dichlorobenzene	UG/KG	0	0%	8,500	0	0	114	5 U	6 U	4 U	5 U	5 U
Acetone	UG/KG	67	2%	200	0	2	106	24 U	28 U	21 U	26 U	26 U
Benzene	UG/KG	0	0%	60	0	0	114	5 U	6 U	4 U	5 U	5 U
Bromochloromethane	UG/KG	0	0%		NA	0	114	5 U	6 U	4 U	5 U	5 U
Bromodichloromethane	UG/KG	0	0%		NA	0	114	5 U	6 U	4 U	5 U	5 U
Bromoform	UG/KG	0	0%		NA	0	114	5 U	6 U	4 U	5 U	5 U
Carbon disulfide	UG/KG	0	0%	2,700	0	0	114	5 U	6 U	4 U	5 U	5 U
Carbon tetrachloride	UG/KG	0	0%	600	0	0	114	5 U	6 U	4 U	5 U	5 U
Chlorobenzene	UG/KG	0	0%	1,700	0	0	114	5 U	6 U	4 U	5 U	5 U
Chlorodibromomethane	UG/KG	0	0%		NA	0	114	5 U	6 U	4 U	5 U	5 U
Chloroethane	UG/KG	0	0%	1,900	0	0	114	9 U	11 U	8 U	10 U	10 U
Chloroform	UG/KG	0	0%	300	0	0	114	5 U	6 U	4 U	5 U	5 U
Cis-1,2-Dichloroethene	UG/KG	2	1%		NA	1	114	5 U	6 U	4 U	5 U	5 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	5 U	6 U	4 U	5 U	5 U
Cyclohexane	UG/KG	0	0%		NA	0	114	5 U	6 U	4 U	5 U	5 U
Dichlorodifluoromethane	UG/KG	2.25 [1]	4%		NA	5	114	5 U	6 U	4 U	5 U	5 U
Ethyl benzene	UG/KG	0	0%	5,500	0	0	114	5 U	6 U	4 U	5 U	5 U
Isopropylbenzene	UG/KG	0	0%		NA	0	114	5 U	6 U	4 U	5 U	5 U
Methyl Acetate	UG/KG	0	0%		NA	0	114	5 U	6 U	4 U	5 U	5 U
Methyl Tertbutyl Ether	UG/KG	0	0%		NA	0	114	5 U	6 U	4 U	5 U	5 U
Methyl bromide	UG/KG	0	0%		NA	0	89	9 UJ	11 UJ	8 UJ	10 UJ	10 UJ
Methyl butyl ketone	UG/KG	0	0%		NA	0	114	24 U	28 U	21 U	26 U	26 U
Methyl chloride	UG/KG	0	0%		NA	0	114	9 U	11 U	8 U	10 U	10 U
Methyl cyclohexane	UG/KG	0	0%		NA	0	114	5 U	6 U	4 U	5 U	5 U
Methyl ethyl ketone	UG/KG	0	0%	300	0	0	114	24 U	28 U	21 U	26 U	26 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY							SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID							11EXFLF201	11EXFLF301	11EXFLF401	11EXFLF501	11EXFLF601
MATRIX							SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID							11EXFLF201	11EXFLF301	11EXFLF401	11EXFLF501	11EXFLF601
SAMPLE DEPTH TO TOP OF SAMPLE							0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE							0.2	0.2	0.2	0.2	0.2
SAMPLE DATE							11/30/2006	11/27/2006	11/27/2006	11/27/2006	11/27/2006
QC CODE							SA	SA	SA	SA	SA
STUDY ID							IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Methyl isobutyl ketone	UG/KG	0	0%	1,000	0	0	114	24 U	28 U	21 U	26 U	26 U
Methylene chloride	UG/KG	49	89%	100	0	102	114	9 J	7 J	5 J	6 J	6 J
Styrene	UG/KG	0	0%		NA	0	114	5 U	6 U	4 U	5 U	5 U
Tetrachloroethene	UG/KG	2	2%	1,400	0	2	114	5 U	6 U	4 U	5 U	5 U
Toluene	UG/KG	0	0%	1,500	0	0	114	5 U	6 U	4 U	5 U	5 U
Total Xylenes	UG/KG	0	0%	1,200	0	0	114	14 U	17 U	13 U	16 U	15 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	300	0	0	114	5 U	6 U	4 U	5 U	5 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	5 U	6 U	4 U	5 U	5 U
Trichloroethene	UG/KG	77	19%	700	0	22	114	5 U	6 U	4 U	6	77
Trichlorofluoromethane	UG/KG	0	0%		NA	0	114	5 UJ	6 U	4 U	5 U	5 U
Vinyl chloride	UG/KG	0	0%	200	0	0	114	9 U	11 U	8 U	10 U	10 U
Carcinogenic PAHs												
Benzo(a)anthracene	UG/KG	260,000	52%		NA	66	127	390 U	400 U	370 U	400 U	400 U
Benzo(a)pyrene	UG/KG	240,000	49%		NA	62	127	390 U	400 U	370 U	400 U	400 U
Benzo(b)fluoranthene	UG/KG	310,000	51%		NA	65	127	390 U	400 U	370 U	400 U	400 U
Benzo(k)fluoranthene	UG/KG	59,000	24%		NA	30	127	390 U	400 U	370 U	400 U	400 U
Chrysene	UG/KG	240,000	50%		NA	64	127	390 U	400 U	370 U	400 U	400 U
Dibenz(a,h)anthracene	UG/KG	40,000	35%		NA	44	127	390 U	400 U	370 U	400 U	400 U
Indeno(1,2,3-cd)pyrene	UG/KG	150,000	46%		NA	58	127	390 U	400 U	370 U	400 U	400 U
BTE (calculated)	MG/KG	355	94%	10 [b]	8	127	135	0.45	0.46	0.43	0.46	0.46
Metals												
Aluminum	MG/KG	17,500	100%	76,100	0	114	114	13600 J	7620 J	6780 J	10200 J	9070 J
Antimony	MG/KG	11.3	18%	31	0	21	114	0.65 U	0.79 UJ	0.77 UJ	0.76 UJ	0.78 UJ
Arsenic	MG/KG	19.5	100%	21.5 [d]	0	114	114	6.4	4.1	4.1	5.1	4.7
Barium	MG/KG	248	100%	5,370	0	114	114	71.7 J	54.5 J	45.6 J	66.5 J	73.5 J
Beryllium	MG/KG	1	100%	150	0	114	114	0.6	0.37	0.4	0.42	0.44
Cadmium	MG/KG	2.5	94%	37	0	107	114	0.23 U	0.27	0.37	0.32	0.25
Calcium	MG/KG	216,000	100%		NA	114	114	2010 J	2230 J	64100 J	1650 J	2430 J
Chromium	MG/KG	44.5	100%		NA	113	113	21 J	11.9 J	10.8 J	15.4 J	14 J
Cobalt	MG/KG	16.8	100%	903	0	114	114	10.2	6.6 J	7.4 J	9.3 J	8.1 J
Copper	MG/KG	131	100%	3,130	0	114	114	25.9	12	17.6	17.7	14.3
Iron	MG/KG	51,100	100%	38,600 [d]	2	114	114	29300	16300 J	15000 J	21100 J	18800 J
Lead	MG/KG	469	100%	400	1	114	114	13.9	9.6 J	13.4 J	10.1 J	11.8 J
Magnesium	MG/KG	25200 [1]	100%		NA	114	114	4330	2760 J	12100 J	3370 J	3160 J
Manganese	MG/KG	1,540	100%	1,760	0	114	114	332	478 J	461 J	837 J	393 J
Mercury	MG/KG	0.327	99%	23	0	113	114	0.033	0.038	0.011 J	0.033	0.037
Nickel	MG/KG	38.6	100%	1,560	0	114	114	29.6	18.5 J	20.2 J	23.5 J	21.5 J
Potassium	MG/KG	1,750	100%		NA	114	114	1220	835 J	1040 J	982 J	899 J
Selenium	MG/KG	3.4	25%	390	0	28	114	0.47 U	0.67 U	0.66 U	0.65 U	0.66 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY							SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID							11EXFLF201	11EXFLF301	11EXFLF401	11EXFLF501	11EXFLF601
MATRIX							SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID							11EXFLF201	11EXFLF301	11EXFLF401	11EXFLF501	11EXFLF601
SAMPLE DEPTH TO TOP OF SAMPLE							0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE							0.2	0.2	0.2	0.2	0.2
SAMPLE DATE							11/30/2006	11/27/2006	11/27/2006	11/27/2006	11/27/2006
QC CODE							SA	SA	SA	SA	SA
STUDY ID							IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Silver	MG/KG	2.2	5%	390	0	6	114	0.58 U	0.17 U	0.17 U	0.17 U	0.17 U
Sodium	MG/KG	164	75%		NA	86	114	34.6 J	33.2 J	104 J	32.2 J	37.1 J
Thallium	MG/KG	2.1	25%	5.2	0	28	114	0.57 U	0.75 U	0.74 U	0.73 U	0.74 U
Vanadium	MG/KG	31.6	100%	78.2	0	114	114	24 J	13.6 J	12.8 J	18 J	15.8 J
Zinc	MG/KG	591	100%	23,500	0	114	114	99.8 J	59.6 J	86.9 J	81.5 J	113 J

Notes:
(1) Maximum value came from sample-duplicate pair averaged value.
(2) The cleanup goal (CUG) values were based on the following criteria:
  a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM)
    HWR-94-4046, Revised January 24, 1994.
  b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
  c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
  d. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
(3) The number of exceedances is not applicable (NA) for parameters without site-specific CUGs.
(4) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLF701	11EXFLF801	11EXFLF901	11EXFLG1001	11EXFLG1101
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLF701	11EXFLF801	11EXFLF901	11EXFLG1001	11EXFLG1102
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/27/2006	12/7/2006	11/27/2006	11/28/2006	11/28/2006
QC CODE								SA	SA	SA	SA	DU
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds												
1,1,1-Trichloroethane	UG/KG	0	0%	800	0	0	114	6 U	7 U	7 U	4 U	4 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	600	0	0	114	6 U	7 U	7 U	4 U	4 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		NA	0	114	6 U	7 U	7 U	4 U	4 U
1,1,2-Trichloroethane	UG/KG	0	0%		NA	0	114	6 U	7 U	7 U	4 U	4 U
1,1-Dichloroethane	UG/KG	0	0%	200	0	0	114	6 U	7 U	7 U	4 U	4 U
1,1-Dichloroethene	UG/KG	0	0%	400	0	0	114	6 U	7 U	7 U	4 U	4 U
1,2,3-Trichlorobenzene	UG/KG	0	0%		NA	0	114	6 U	7 UJ	7 U	4 U	4 U
1,2,4-Trichlorobenzene	UG/KG	0	0%	3,400	0	0	114	6 U	7 UJ	7 U	4 U	4 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		NA	0	114	6 U	7 U	7 U	4 U	4 U
1,2-Dibromoethane	UG/KG	0	0%		NA	0	114	6 U	7 U	7 U	4 U	4 U
1,2-Dichlorobenzene	UG/KG	0	0%	7,900	0	0	114	6 U	7 U	7 U	4 U	4 U
1,2-Dichloroethane	UG/KG	0	0%	100	0	0	114	6 U	7 U	7 U	4 U	4 U
1,2-Dichloropropane	UG/KG	0	0%		NA	0	114	6 U	7 U	7 U	4 U	4 U
1,3-Dichlorobenzene	UG/KG	0	0%	1,600	0	0	114	6 U	7 U	7 U	4 U	4 U
1,4-Dichlorobenzene	UG/KG	0	0%	8,500	0	0	114	6 U	7 U	7 U	4 U	4 U
Acetone	UG/KG	67	2%	200	0	2	106	28 U	34 U	37 U	22 U	22 U
Benzene	UG/KG	0	0%	60	0	0	114	6 U	7 U	7 U	4 U	4 U
Bromochloromethane	UG/KG	0	0%		NA	0	114	6 U	7 U	7 U	4 U	4 U
Bromodichloromethane	UG/KG	0	0%		NA	0	114	6 U	7 U	7 U	4 U	4 U
Bromoform	UG/KG	0	0%		NA	0	114	6 U	7 U	7 U	4 U	4 U
Carbon disulfide	UG/KG	0	0%	2,700	0	0	114	6 U	7 U	7 U	4 U	4 U
Carbon tetrachloride	UG/KG	0	0%	600	0	0	114	6 U	7 UJ	7 U	4 U	4 U
Chlorobenzene	UG/KG	0	0%	1,700	0	0	114	6 U	7 U	7 U	4 U	4 U
Chlorodibromomethane	UG/KG	0	0%		NA	0	114	6 U	7 U	7 U	4 U	4 U
Chloroethane	UG/KG	0	0%	1,900	0	0	114	11 U	13 U	15 U	9 U	9 U
Chloroform	UG/KG	0	0%	300	0	0	114	6 U	7 U	7 U	4 U	4 U
Cis-1,2-Dichloroethene	UG/KG	2	1%		NA	1	114	6 U	7 U	7 U	4 U	4 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	6 U	7 U	7 U	4 U	4 U
Cyclohexane	UG/KG	0	0%		NA	0	114	6 U	7 U	7 U	4 U	4 U
Dichlorodifluoromethane	UG/KG	2.25 [1]	4%		NA	5	114	6 U	7 U	7 U	4 U	4 U
Ethyl benzene	UG/KG	0	0%	5,500	0	0	114	6 U	7 U	7 U	4 U	4 U
Isopropylbenzene	UG/KG	0	0%		NA	0	114	6 U	7 U	7 U	4 U	4 U
Methyl Acetate	UG/KG	0	0%		NA	0	114	6 U	7 U	7 U	4 U	4 U
Methyl Tertbutyl Ether	UG/KG	0	0%		NA	0	114	6 U	7 UJ	7 U	4 U	4 U
Methyl bromide	UG/KG	0	0%		NA	0	89	11 UJ	13 UJ	15 UJ	9 UJ	9 UJ
Methyl butyl ketone	UG/KG	0	0%		NA	0	114	28 U	34 U	37 U	22 U	22 U
Methyl chloride	UG/KG	0	0%		NA	0	114	11 U	13 U	15 U	9 U	9 U
Methyl cyclohexane	UG/KG	0	0%		NA	0	114	6 U	7 U	7 U	4 U	4 U
Methyl ethyl ketone	UG/KG	0	0%	300	0	0	114	28 U	34 U	37 U	22 U	22 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLF701	11EXFLF801	11EXFLF901	11EXFLG1001	11EXFLG1101
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLF701	11EXFLF801	11EXFLF901	11EXFLG1001	11EXFLG1102
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/27/2006	12/7/2006	11/27/2006	11/28/2006	11/28/2006
QC CODE								SA	SA	SA	SA	DU
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Methyl isobutyl ketone	UG/KG	0	0%	1,000	0	0	114	28 U	34 U	37 U	22 U	22 U
Methylene chloride	UG/KG	49	89%	100	0	102	114	5 J	11 J	9 J	6 J	4 J
Styrene	UG/KG	0	0%		NA	0	114	6 U	7 U	7 U	4 U	4 U
Tetrachloroethene	UG/KG	2	2%	1,400	0	2	114	6 U	7 U	7 U	4 U	4 U
Toluene	UG/KG	0	0%	1,500	0	0	114	6 U	7 U	7 U	4 U	4 U
Total Xylenes	UG/KG	0	0%	1,200	0	0	114	16 U	20 U	22 U	14 U	13 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	300	0	0	114	6 U	7 UJ	7 U	4 U	4 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	6 U	7 U	7 U	4 U	4 U
Trichloroethene	UG/KG	77	19%	700	0	22	114	6 U	7 U	8	30	10
Trichlorofluoromethane	UG/KG	0	0%		NA	0	114	6 U	7 U	7 U	4 U	4 U
Vinyl chloride	UG/KG	0	0%	200	0	0	114	11 U	13 U	15 U	9 U	9 U
Carcinogenic PAHs												
Benzo(a)anthracene	UG/KG	260,000	52%		NA	66	127	400 U	3600	110 J	360 U	33 J
Benzo(a)pyrene	UG/KG	240,000	49%		NA	62	127	400 U	3000	110 J	360 U	25 J
Benzo(b)fluoranthene	UG/KG	310,000	51%		NA	65	127	400 U	5000 J	210 J	360 U	26 J
Benzo(k)fluoranthene	UG/KG	59,000	24%		NA	30	127	400 U	2000 UJ	400 UJ	360 U	380 U
Chrysene	UG/KG	240,000	50%		NA	64	127	400 U	3500	140 J	360 U	38 J
Dibenz(a,h)anthracene	UG/KG	40,000	35%		NA	44	127	400 U	540 J	400 U	360 U	380 U
Indeno(1,2,3-cd)pyrene	UG/KG	150,000	46%		NA	58	127	400 U	1800 J	75 J	360 U	380 U
BTE (calculated)	MG/KG	355	94%	10 [b]	8	127	135	0.46	4.63	0.35	0.42	0.24
Metals												
Aluminum	MG/KG	17,500	100%	76,100	0	114	114	12200 J	12500 J	8140 J	7800 J	9650 J
Antimony	MG/KG	11.3	18%	31	0	21	114	0.72 UJ	0.88 UJ	3.2 J	1.6 J	0.77 UJ
Arsenic	MG/KG	19.5	100%	21.5 [d]	0	114	114	6	6.5	5.1	4.3	6.1
Barium	MG/KG	248	100%	5,370	0	114	114	77.2 J	85.2 J	78 J	62.9 J	49.4 J
Beryllium	MG/KG	1	100%	150	0	114	114	0.55	0.63	0.4	0.4	0.46
Cadmium	MG/KG	2.5	94%	37	0	107	114	0.35	0.47	0.64	0.19 J	0.32
Calcium	MG/KG	216,000	100%		NA	114	114	2240 J	4220 J	31900 J	60600 J	48300 J
Chromium	MG/KG	44.5	100%		NA	113	113	18.1 J	18.7 J	22.4 J	13.6 J	15.4 J
Cobalt	MG/KG	16.8	100%	903	0	114	114	9.3 J	9.3 J	8.4 J	8.3 J	10.1 J
Copper	MG/KG	131	100%	3,130	0	114	114	16.9	22.1	39.1	18.2	19.9
Iron	MG/KG	51,100	100%	38,600 [d]	2	114	114	24800 J	24800 J	28200 J	17500 J	22600 J
Lead	MG/KG	469	100%	400	1	114	114	12.4 J	16.9 J	141 J	8.3 J	10.9 J
Magnesium	MG/KG	25200 [1]	100%		NA	114	114	3780 J	4210 J	6630 J	12400 J	8880 J
Manganese	MG/KG	1,540	100%	1,760	0	114	114	533 J	612 J	530 J	478 J	493 J
Mercury	MG/KG	0.327	99%	23	0	113	114	0.028	0.051 J	0.039	0.01 J	0.016 J
Nickel	MG/KG	38.6	100%	1,560	0	114	114	25.9 J	26.7 J	22.7 J	21.6 J	26.8 J
Potassium	MG/KG	1,750	100%		NA	114	114	1130 J	1300 J	985 J	1110 J	1090 J
Selenium	MG/KG	3.4	25%	390	0	28	114	0.62 U	0.75 UJ	0.63 U	0.63 U	0.66 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY							SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID							11EXFLF701	11EXFLF801	11EXFLF901	11EXFLG1001	11EXFLG1101
MATRIX							SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID							11EXFLF701	11EXFLF801	11EXFLF901	11EXFLG1001	11EXFLG1102
SAMPLE DEPTH TO TOP OF SAMPLE							0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE							0.2	0.2	0.2	0.2	0.2
SAMPLE DATE							11/27/2006	12/7/2006	11/27/2006	11/28/2006	11/28/2006
QC CODE							SA	SA	SA	SA	DU
STUDY ID							IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Silver	MG/KG	2.2	5%	390	0	6	114	0.53 U	0.19 U	0.53 U	0.16 U	0.56 U
Sodium	MG/KG	164	75%		NA	86	114	43.5 J	59.2 J	74.1 J	105 J	99.8 J
Thallium	MG/KG	2.1	25%	5.2	0	28	114	0.69 U	0.84 U	0.7 U	0.7 U	0.73 U
Vanadium	MG/KG	31.6	100%	78.2	0	114	114	20.9 J	21.5 J	15 J	13.9 J	16.1 J
Zinc	MG/KG	591	100%	23,500	0	114	114	103 J	97.5 J	196 J	62.2 J	83.7 J

Notes:
(1) Maximum value came from sample-duplicate pair averaged value.
(2) The cleanup goal (CUG) values were based on the following criteria:
  a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM)
    HWR-94-4046, Revised January 24, 1994.
  b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
  c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
  d. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
(3) The number of exceedances is not applicable (NA) for parameters without site-specific CUGs.
(4) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLG1101	11EXFLG201	11EXFLG301	11EXFLG401	11EXFLG501
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLG1101	11EXFLG201	11EXFLG301	11EXFLG401	11EXFLG501
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/28/2006	11/30/2006	12/4/2006	12/4/2006	12/4/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds												
1,1,1-Trichloroethane	UG/KG	0	0%	800	0	0	114	4 U	5 U	6 U	5 U	4 UJ
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	600	0	0	114	4 U	5 U	6 U	5 U	4 UJ
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		NA	0	114	4 U	5 U	6 U	5 U	4 UJ
1,1,2-Trichloroethane	UG/KG	0	0%		NA	0	114	4 U	5 U	6 U	5 U	4 UJ
1,1-Dichloroethane	UG/KG	0	0%	200	0	0	114	4 U	5 U	6 U	5 U	4 UJ
1,1-Dichloroethene	UG/KG	0	0%	400	0	0	114	4 U	5 U	6 U	5 U	4 UJ
1,2,3-Trichlorobenzene	UG/KG	0	0%		NA	0	114	4 U	5 U	6 U	5 U	4 UJ
1,2,4-Trichlorobenzene	UG/KG	0	0%	3,400	0	0	114	4 U	5 U	6 U	5 U	4 UJ
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		NA	0	114	4 U	5 U	6 U	5 U	4 UJ
1,2-Dibromoethane	UG/KG	0	0%		NA	0	114	4 U	5 U	6 U	5 U	4 UJ
1,2-Dichlorobenzene	UG/KG	0	0%	7,900	0	0	114	4 U	5 U	6 U	5 U	4 UJ
1,2-Dichloroethane	UG/KG	0	0%	100	0	0	114	4 U	5 U	6 U	5 U	4 UJ
1,2-Dichloropropane	UG/KG	0	0%		NA	0	114	4 U	5 U	6 U	5 U	4 UJ
1,3-Dichlorobenzene	UG/KG	0	0%	1,600	0	0	114	4 U	5 U	6 U	5 U	4 UJ
1,4-Dichlorobenzene	UG/KG	0	0%	8,500	0	0	114	4 U	5 U	6 U	5 U	4 UJ
Acetone	UG/KG	67	2%	200	0	2	106	21 U	25 U	32 U	24 U	20 UJ
Benzene	UG/KG	0	0%	60	0	0	114	4 U	5 U	6 U	5 U	4 UJ
Bromochloromethane	UG/KG	0	0%		NA	0	114	4 U	5 U	6 U	5 U	4 UJ
Bromodichloromethane	UG/KG	0	0%		NA	0	114	4 U	5 U	6 U	5 U	4 UJ
Bromoform	UG/KG	0	0%		NA	0	114	4 U	5 U	6 U	5 U	4 UJ
Carbon disulfide	UG/KG	0	0%	2,700	0	0	114	4 U	5 U	6 U	5 U	4 UJ
Carbon tetrachloride	UG/KG	0	0%	600	0	0	114	4 UJ	5 U	6 U	5 U	4 UJ
Chlorobenzene	UG/KG	0	0%	1,700	0	0	114	4 U	5 U	6 U	5 U	4 UJ
Chlorodibromomethane	UG/KG	0	0%		NA	0	114	4 U	5 U	6 U	5 U	4 UJ
Chloroethane	UG/KG	0	0%	1,900	0	0	114	8 UJ	10 U	13 U	10 U	8 UJ
Chloroform	UG/KG	0	0%	300	0	0	114	4 U	5 U	6 U	5 U	4 UJ
Cis-1,2-Dichloroethene	UG/KG	2	1%		NA	1	114	4 U	5 U	6 U	5 U	4 UJ
Cis-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	4 U	5 U	6 U	5 U	4 UJ
Cyclohexane	UG/KG	0	0%		NA	0	114	4 U	5 U	6 U	5 U	4 UJ
Dichlorodifluoromethane	UG/KG	2.25 [1]	4%		NA	5	114	4 U	5 U	6 U	5 U	4 UJ
Ethyl benzene	UG/KG	0	0%	5,500	0	0	114	4 U	5 U	6 U	5 U	4 UJ
Isopropylbenzene	UG/KG	0	0%		NA	0	114	4 U	5 U	6 U	5 U	4 UJ
Methyl Acetate	UG/KG	0	0%		NA	0	114	4 U	5 U	6 U	5 U	4 UJ
Methyl Tertbutyl Ether	UG/KG	0	0%		NA	0	114	4 UJ	5 U	6 U	5 U	4 UJ
Methyl bromide	UG/KG	0	0%		NA	0	89	8 U	10 UJ	13 UJ	10 UJ	8 UJ
Methyl butyl ketone	UG/KG	0	0%		NA	0	114	21 U	25 U	32 U	24 U	20 UJ
Methyl chloride	UG/KG	0	0%		NA	0	114	8 U	10 U	13 U	10 U	8 UJ
Methyl cyclohexane	UG/KG	0	0%		NA	0	114	4 U	5 U	6 U	5 U	4 UJ
Methyl ethyl ketone	UG/KG	0	0%	300	0	0	114	21 U	25 U	32 U	24 U	20 UJ

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLG1101	11EXFLG201	11EXFLG301	11EXFLG401	11EXFLG501
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLG1101	11EXFLG201	11EXFLG301	11EXFLG401	11EXFLG501
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/28/2006	11/30/2006	12/4/2006	12/4/2006	12/4/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Methyl isobutyl ketone	UG/KG	0	0%	1,000	0	0	114	21 U	25 U	32 U	24 U	20 UJ
Methylene chloride	UG/KG	49	89%	100	0	102	114	5 J	12 J	8 J	8 J	6 J
Styrene	UG/KG	0	0%		NA	0	114	4 U	5 U	6 U	5 U	4 UJ
Tetrachloroethene	UG/KG	2	2%	1,400	0	2	114	4 U	5 U	6 U	5 U	4 UJ
Toluene	UG/KG	0	0%	1,500	0	0	114	4 U	5 U	6 U	5 U	4 UJ
Total Xylenes	UG/KG	0	0%	1,200	0	0	114	13 U	15 U	19 U	15 U	12 UJ
Trans-1,2-Dichloroethene	UG/KG	0	0%	300	0	0	114	4 UJ	5 U	6 U	5 U	4 UJ
Trans-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	4 U	5 U	6 U	5 U	4 UJ
Trichloroethene	UG/KG	77	19%	700	0	22	114	13	5 U	6	4 J	2 J
Trichlorofluoromethane	UG/KG	0	0%		NA	0	114	4 U	5 UJ	6 U	5 U	4 UJ
Vinyl chloride	UG/KG	0	0%	200	0	0	114	8 U	10 U	13 U	10 U	8 UJ
Carcinogenic PAHs												
Benzo(a)anthracene	UG/KG	260,000	52%		NA	66	127	120 J	46 J	380 U	390 U	360 U
Benzo(a)pyrene	UG/KG	240,000	49%		NA	62	127	99 J	41 J	380 U	390 U	360 U
Benzo(b)fluoranthene	UG/KG	310,000	51%		NA	65	127	120 J	56 J	380 U	390 U	360 U
Benzo(k)fluoranthene	UG/KG	59,000	24%		NA	30	127	64 J	24 J	380 U	390 U	360 U
Chrysene	UG/KG	240,000	50%		NA	64	127	110 J	42 J	380 U	390 U	360 U
Dibenz(a,h)anthracene	UG/KG	40,000	35%		NA	44	127	370 U	390 U	380 U	390 U	360 U
Indeno(1,2,3-cd)pyrene	UG/KG	150,000	46%		NA	58	127	62 J	30 J	380 U	390 U	360 U
BTE (calculated)	MG/KG	355	94%	10 [b]	8	127	135	0.32	0.25	0.44	0.45	0.42
Metals												
Aluminum	MG/KG	17,500	100%	76,100	0	114	114	10600 J	12200 J	8700 J	6690 J	3600 J
Antimony	MG/KG	11.3	18%	31	0	21	114	0.75 UJ	0.64 U	0.87 U	0.79 U	0.73 U
Arsenic	MG/KG	19.5	100%	21.5 [d]	0	114	114	5.8	6.2	3.6	4.1	2.6
Barium	MG/KG	248	100%	5,370	0	114	114	57 J	68.7 J	59.1 J	43.5 J	23.3 J
Beryllium	MG/KG	1	100%	150	0	114	114	0.49	0.6	0.47	0.44	0.3
Cadmium	MG/KG	2.5	94%	37	0	107	114	0.34	0.23 U	0.33	0.3	0.06 U
Calcium	MG/KG	216,000	100%		NA	114	114	54300 J	1810 J	2990 J	47900 J	51700 J
Chromium	MG/KG	44.5	100%		NA	113	113	17.1 J	19.1 J	13.9 J	10.2 J	5.5 J
Cobalt	MG/KG	16.8	100%	903	0	114	114	10.9 J	10.3	6 J	6 J	4.2 J
Copper	MG/KG	131	100%	3,130	0	114	114	22.4	23.1	12.9 J	16.3 J	10 J
Iron	MG/KG	51,100	100%	38,600 [d]	2	114	114	22900 J	24600	17600 J	15100 J	8760 J
Lead	MG/KG	469	100%	400	1	114	114	14.1 J	12.8	9.9 J	7.5 J	4.7 J
Magnesium	MG/KG	25200 [1]	100%		NA	114	114	12000 J	4620	3210 J	6550 J	6630 J
Manganese	MG/KG	1,540	100%	1,760	0	114	114	655 J	538	233 J	334 J	212 J
Mercury	MG/KG	0.327	99%	23	0	113	114	0.014 J	0.042	0.031 J	0.016 J	0.005 UJ
Nickel	MG/KG	38.6	100%	1,560	0	114	114	28.6 J	27.9	19.4 J	18 J	10.2 J
Potassium	MG/KG	1,750	100%		NA	114	114	1130 J	1440	1020 J	913 J	656 J
Selenium	MG/KG	3.4	25%	390	0	28	114	0.64 U	0.45 U	0.74 U	0.67 U	0.62 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY							SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID							11EXFLG1101	11EXFLG201	11EXFLG301	11EXFLG401	11EXFLG501
MATRIX							SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID							11EXFLG1101	11EXFLG201	11EXFLG301	11EXFLG401	11EXFLG501
SAMPLE DEPTH TO TOP OF SAMPLE							0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE							0.2	0.2	0.2	0.2	0.2
SAMPLE DATE							11/28/2006	11/30/2006	12/4/2006	12/4/2006	12/4/2006
QC CODE							SA	SA	SA	SA	SA
STUDY ID							IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Silver	MG/KG	2.2	5%	390	0	6	114	0.54 U	0.09 U	0.63 U	0.57 U	0.53 U
Sodium	MG/KG	164	75%		NA	86	114	92.2 J	22.7 U	36.5 U	85.7 J	55.8 J
Thallium	MG/KG	2.1	25%	5.2	0	28	114	0.71 U	0.56 U	0.83 U	0.75 U	0.7 U
Vanadium	MG/KG	31.6	100%	78.2	0	114	114	17.3 J	21.1 J	15.8 J	13.5 J	7.6 J
Zinc	MG/KG	591	100%	23,500	0	114	114	90.7 J	88.4 J	136 J	107 J	33.6 J

Notes:
(1) Maximum value came from sample-duplicate pair averaged value.
(2) The cleanup goal (CUG) values were based on the following criteria:
  a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM)
    HWR-94-4046, Revised January 24, 1994.
  b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
  c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
  d. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
(3) The number of exceedances is not applicable (NA) for parameters without site-specific CUGs.
(4) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLG601	11EXFLG701	11EXFLG801	11EXFLG901	11EXFLH1001
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLG601	11EXFLG701	11EXFLG801	11EXFLG901	11EXFLH1001
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/4/2006	12/4/2006	11/27/2006	11/27/2006	11/27/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds												
1,1,1-Trichloroethane	UG/KG	0	0%	800	0	0	114	4 UJ	6 UJ	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	600	0	0	114	4 UJ	6 UJ	5 U	5 U	5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		NA	0	114	4 UJ	6 UJ	5 U	5 U	5 U
1,1,2-Trichloroethane	UG/KG	0	0%		NA	0	114	4 UJ	6 UJ	5 U	5 U	5 U
1,1-Dichloroethane	UG/KG	0	0%	200	0	0	114	4 UJ	6 UJ	5 U	5 U	5 U
1,1-Dichloroethene	UG/KG	0	0%	400	0	0	114	4 UJ	6 UJ	5 U	5 U	5 U
1,2,3-Trichlorobenzene	UG/KG	0	0%		NA	0	114	4 UJ	6 UJ	5 U	5 U	5 U
1,2,4-Trichlorobenzene	UG/KG	0	0%	3,400	0	0	114	4 UJ	6 UJ	5 U	5 U	5 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		NA	0	114	4 UJ	6 UJ	5 U	5 U	5 U
1,2-Dibromoethane	UG/KG	0	0%		NA	0	114	4 UJ	6 UJ	5 U	5 U	5 U
1,2-Dichlorobenzene	UG/KG	0	0%	7,900	0	0	114	4 UJ	6 UJ	5 U	5 U	5 U
1,2-Dichloroethane	UG/KG	0	0%	100	0	0	114	4 UJ	6 UJ	5 U	5 U	5 U
1,2-Dichloropropane	UG/KG	0	0%		NA	0	114	4 UJ	6 UJ	5 U	5 U	5 U
1,3-Dichlorobenzene	UG/KG	0	0%	1,600	0	0	114	4 UJ	6 UJ	5 U	5 U	5 U
1,4-Dichlorobenzene	UG/KG	0	0%	8,500	0	0	114	4 UJ	6 UJ	5 U	5 U	5 U
Acetone	UG/KG	67	2%	200	0	2	106	21 UJ	28 UJ	26 U	25 U	26 U
Benzene	UG/KG	0	0%	60	0	0	114	4 UJ	6 UJ	5 U	5 U	5 U
Bromochloromethane	UG/KG	0	0%		NA	0	114	4 UJ	6 UJ	5 U	5 U	5 U
Bromodichloromethane	UG/KG	0	0%		NA	0	114	4 UJ	6 UJ	5 U	5 U	5 U
Bromoform	UG/KG	0	0%		NA	0	114	4 UJ	6 UJ	5 U	5 U	5 U
Carbon disulfide	UG/KG	0	0%	2,700	0	0	114	4 UJ	6 UJ	5 U	5 U	5 U
Carbon tetrachloride	UG/KG	0	0%	600	0	0	114	4 UJ	6 UJ	5 U	5 U	5 U
Chlorobenzene	UG/KG	0	0%	1,700	0	0	114	4 UJ	6 UJ	5 U	5 U	5 U
Chlorodibromomethane	UG/KG	0	0%		NA	0	114	4 UJ	6 UJ	5 U	5 U	5 U
Chloroethane	UG/KG	0	0%	1,900	0	0	114	8 UJ	11 UJ	10 U	10 U	10 U
Chloroform	UG/KG	0	0%	300	0	0	114	4 UJ	6 UJ	5 U	5 U	5 U
Cis-1,2-Dichloroethene	UG/KG	2	1%		NA	1	114	4 UJ	6 UJ	5 U	5 U	5 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	4 UJ	6 UJ	5 U	5 U	5 U
Cyclohexane	UG/KG	0	0%		NA	0	114	4 UJ	6 UJ	5 U	5 U	5 U
Dichlorodifluoromethane	UG/KG	2.25 [1]	4%		NA	5	114	4 UJ	6 UJ	5 U	5 U	5 U
Ethyl benzene	UG/KG	0	0%	5,500	0	0	114	4 UJ	6 UJ	5 U	5 U	5 U
Isopropylbenzene	UG/KG	0	0%		NA	0	114	4 UJ	6 UJ	5 U	5 U	5 U
Methyl Acetate	UG/KG	0	0%		NA	0	114	4 UJ	6 UJ	5 U	5 U	5 U
Methyl Tertbutyl Ether	UG/KG	0	0%		NA	0	114	4 UJ	6 UJ	5 U	5 U	5 U
Methyl bromide	UG/KG	0	0%		NA	0	89	8 UJ	11 UJ	10 UJ	10 UJ	10 UJ
Methyl butyl ketone	UG/KG	0	0%		NA	0	114	21 UJ	28 UJ	26 U	25 U	26 U
Methyl chloride	UG/KG	0	0%		NA	0	114	8 UJ	11 UJ	10 U	10 U	10 U
Methyl cyclohexane	UG/KG	0	0%		NA	0	114	4 UJ	6 UJ	5 U	5 U	5 U
Methyl ethyl ketone	UG/KG	0	0%	300	0	0	114	21 UJ	28 UJ	26 U	25 U	26 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLG601	11EXFLG701	11EXFLG801	11EXFLG901	11EXFLH1001
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLG601	11EXFLG701	11EXFLG801	11EXFLG901	11EXFLH1001
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/4/2006	12/4/2006	11/27/2006	11/27/2006	11/27/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Methyl isobutyl ketone	UG/KG	0	0%	1,000	0	0	114	21 UJ	28 UJ	26 U	25 U	26 U
Methylene chloride	UG/KG	49	89%	100	0	102	114	6 J	7 J	7 J	6 J	7 J
Styrene	UG/KG	0	0%		NA	0	114	4 UJ	6 UJ	5 U	5 U	5 U
Tetrachloroethene	UG/KG	2	2%	1,400	0	2	114	4 UJ	6 UJ	5 U	5 U	5 U
Toluene	UG/KG	0	0%	1,500	0	0	114	4 UJ	6 UJ	5 U	5 U	5 U
Total Xylenes	UG/KG	0	0%	1,200	0	0	114	13 UJ	17 UJ	16 U	15 U	16 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	300	0	0	114	4 UJ	6 UJ	5 U	5 U	5 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	4 UJ	6 UJ	5 U	5 U	5 U
Trichloroethene	UG/KG	77	19%	700	0	22	114	4 UJ	6 UJ	5 U	2 J	8
Trichlorofluoromethane	UG/KG	0	0%		NA	0	114	4 UJ	6 UJ	5 U	5 U	5 U
Vinyl chloride	UG/KG	0	0%	200	0	0	114	8 UJ	11 UJ	10 U	10 U	10 U
Carcinogenic PAHs												
Benzo(a)anthracene	UG/KG	260,000	52%		NA	66	127	380 U	410 U	27 J	390 U	380 U
Benzo(a)pyrene	UG/KG	240,000	49%		NA	62	127	380 U	410 U	20 J	390 U	380 U
Benzo(b)fluoranthene	UG/KG	310,000	51%		NA	65	127	380 U	410 U	24 J	390 U	380 U
Benzo(k)fluoranthene	UG/KG	59,000	24%		NA	30	127	380 U	410 U	380 U	390 U	380 U
Chrysene	UG/KG	240,000	50%		NA	64	127	380 U	410 U	24 J	390 U	380 U
Dibenz(a,h)anthracene	UG/KG	40,000	35%		NA	44	127	380 U	410 U	380 U	390 U	380 U
Indeno(1,2,3-cd)pyrene	UG/KG	150,000	46%		NA	58	127	380 U	410 U	380 U	390 U	380 U
BTE (calculated)	MG/KG	355	94%	10 [b]	8	127	135	0.44	0.48	0.24	0.45	0.44
Metals												
Aluminum	MG/KG	17,500	100%	76,100	0	114	114	6900 J	12500 J	14300 J	7000 J	13400 J
Antimony	MG/KG	11.3	18%	31	0	21	114	0.83 U	0.85 U	0.7 UJ	0.72 UJ	6.8 J
Arsenic	MG/KG	19.5	100%	21.5 [d]	0	114	114	7.4	6.4	6.7	4.3	4.1
Barium	MG/KG	248	100%	5,370	0	114	114	40 J	107 J	89.7 J	46.7 J	83.6 J
Beryllium	MG/KG	1	100%	150	0	114	114	0.48	0.73	0.62	0.35	0.58
Cadmium	MG/KG	2.5	94%	37	0	107	114	0.07 U	0.23 J	0.35	0.26	0.19 J
Calcium	MG/KG	216,000	100%		NA	114	114	45500 J	4580 J	2430 J	30500 J	25500 J
Chromium	MG/KG	44.5	100%		NA	113	113	11 J	18.5 J	20.5 J	11.5 J	18.3 J
Cobalt	MG/KG	16.8	100%	903	0	114	114	8.2 J	10.8 J	10.7 J	6.8 J	8.5 J
Copper	MG/KG	131	100%	3,130	0	114	114	20.5 J	21.1 J	26.2	17	20
Iron	MG/KG	51,100	100%	38,600 [d]	2	114	114	19900 J	26200 J	28100 J	14700 J	21800 J
Lead	MG/KG	469	100%	400	1	114	114	11.7 J	23.8 J	14.7 J	37.5 J	15.9 J
Magnesium	MG/KG	25200 [1]	100%		NA	114	114	9630 J	4090 J	4300 J	9050 J	6170 J
Manganese	MG/KG	1,540	100%	1,760	0	114	114	448 J	1280 J	596 J	391 J	319 J
Mercury	MG/KG	0.327	99%	23	0	113	114	0.011 J	0.07	0.045	0.023	0.027
Nickel	MG/KG	38.6	100%	1,560	0	114	114	21 J	30.1 J	27.7 J	17.6 J	26.7 J
Potassium	MG/KG	1,750	100%		NA	114	114	924 J	1080 J	1530 J	931 J	1500 J
Selenium	MG/KG	3.4	25%	390	0	28	114	0.71 U	0.73 U	0.6 U	0.61 U	0.68 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLG601	11EXFLG701	11EXFLG801	11EXFLG901	11EXFLH1001
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLG601	11EXFLG701	11EXFLG801	11EXFLG901	11EXFLH1001
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/4/2006	12/4/2006	11/27/2006	11/27/2006	11/27/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Silver	MG/KG	2.2	5%	390	0	6	114	0.6 U	0.61 U	0.51 U	0.52 U	0.57 U
Sodium	MG/KG	164	75%		NA	86	114	76.2 J	35.7 U	32.9 J	63.4 J	59.9 J
Thallium	MG/KG	2.1	25%	5.2	0	28	114	0.8 U	0.81 U	0.67 U	0.68 U	0.76 U
Vanadium	MG/KG	31.6	100%	78.2	0	114	114	14.3 J	22.2 J	24.8 J	12.1 J	22 J
Zinc	MG/KG	591	100%	23,500	0	114	114	67.5 J	112 J	96.2 J	96.7 J	67.1 J

Notes:
(1) Maximum value came from sample-duplicate pair averaged value.
(2) The cleanup goal (CUG) values were based on the following criteria:
  a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046, Revised January 24, 1994.
  b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
  c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
  d. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
(3) The number of exceedances is not applicable (NA) for parameters without site-specific CUGs.
(4) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLH1101	11EXFLH301	11EXFLH401	11EXPRH401	11EXFLH501
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLH1101	11EXFLH301	11EXFLH401	11EXFLH402	11EXFLH501
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/28/2006	12/4/2006	12/4/2006	1/5/2007	12/4/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds												
1,1,1-Trichloroethane	UG/KG	0	0%	800	0	0	114	4 U	5 U	5 U		5 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	600	0	0	114	4 U	5 U	5 U		5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		NA	0	114	4 U	5 U	5 U		5 U
1,1,2-Trichloroethane	UG/KG	0	0%		NA	0	114	4 U	5 U	5 U		5 U
1,1-Dichloroethane	UG/KG	0	0%	200	0	0	114	4 U	5 U	5 U		5 U
1,1-Dichloroethene	UG/KG	0	0%	400	0	0	114	4 U	5 U	5 U		5 U
1,2,3-Trichlorobenzene	UG/KG	0	0%		NA	0	114	4 U	5 U	5 U		5 U
1,2,4-Trichlorobenzene	UG/KG	0	0%	3,400	0	0	114	4 U	5 U	5 U		5 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		NA	0	114	4 U	5 U	5 U		5 U
1,2-Dibromoethane	UG/KG	0	0%		NA	0	114	4 U	5 U	5 U		5 U
1,2-Dichlorobenzene	UG/KG	0	0%	7,900	0	0	114	4 U	5 U	5 U		5 U
1,2-Dichloroethane	UG/KG	0	0%	100	0	0	114	4 U	5 U	5 U		5 U
1,2-Dichloropropane	UG/KG	0	0%		NA	0	114	4 U	5 U	5 U		5 U
1,3-Dichlorobenzene	UG/KG	0	0%	1,600	0	0	114	4 U	5 U	5 U		5 U
1,4-Dichlorobenzene	UG/KG	0	0%	8,500	0	0	114	4 U	5 U	5 U		5 U
Acetone	UG/KG	67	2%	200	0	2	106	21 U	24 U	25 U		26 U
Benzene	UG/KG	0	0%	60	0	0	114	4 U	5 U	5 U		5 U
Bromochloromethane	UG/KG	0	0%		NA	0	114	4 U	5 U	5 U		5 U
Bromodichloromethane	UG/KG	0	0%		NA	0	114	4 U	5 U	5 U		5 U
Bromoform	UG/KG	0	0%		NA	0	114	4 U	5 U	5 U		5 U
Carbon disulfide	UG/KG	0	0%	2,700	0	0	114	4 U	5 U	5 U		5 U
Carbon tetrachloride	UG/KG	0	0%	600	0	0	114	4 U	5 U	5 U		5 U
Chlorobenzene	UG/KG	0	0%	1,700	0	0	114	4 U	5 U	5 U		5 U
Chlorodibromomethane	UG/KG	0	0%		NA	0	114	4 U	5 U	5 U		5 U
Chloroethane	UG/KG	0	0%	1,900	0	0	114	8 U	10 U	10 U		10 U
Chloroform	UG/KG	0	0%	300	0	0	114	4 U	5 U	5 U		5 U
Cis-1,2-Dichloroethene	UG/KG	2	1%		NA	1	114	4 U	5 U	5 U		5 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	4 U	5 U	5 U		5 U
Cyclohexane	UG/KG	0	0%		NA	0	114	4 U	5 U	5 U		5 U
Dichlorodifluoromethane	UG/KG	2.25 [1]	4%		NA	5	114	4 U	5 U	5 U		5 U
Ethyl benzene	UG/KG	0	0%	5,500	0	0	114	4 U	5 U	5 U		5 U
Isopropylbenzene	UG/KG	0	0%		NA	0	114	4 U	5 U	5 U		5 U
Methyl Acetate	UG/KG	0	0%		NA	0	114	4 U	5 U	5 U		5 U
Methyl Tertbutyl Ether	UG/KG	0	0%		NA	0	114	4 U	5 U	5 U		5 U
Methyl bromide	UG/KG	0	0%		NA	0	89	8 UJ	10 UJ	10 UJ		10 UJ
Methyl butyl ketone	UG/KG	0	0%		NA	0	114	21 U	24 U	25 U		26 U
Methyl chloride	UG/KG	0	0%		NA	0	114	8 U	10 U	10 U		10 U
Methyl cyclohexane	UG/KG	0	0%		NA	0	114	4 U	5 U	5 U		5 U
Methyl ethyl ketone	UG/KG	0	0%	300	0	0	114	21 U	24 U	25 U		26 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLH1101	11EXFLH301	11EXFLH401	11EXPRH401	11EXFLH501
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLH1101	11EXFLH301	11EXFLH401	11EXFLH402	11EXFLH501
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/28/2006	12/4/2006	12/4/2006	1/5/2007	12/4/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Methyl isobutyl ketone	UG/KG	0	0%	1,000	0	0	114	21 U	24 U	25 U		26 U
Methylene chloride	UG/KG	49	89%	100	0	102	114	5 J	6 J	6 J		6 J
Styrene	UG/KG	0	0%		NA	0	114	4 U	5 U	5 U		5 U
Tetrachloroethene	UG/KG	2	2%	1,400	0	2	114	4 U	5 U	5 U		5 U
Toluene	UG/KG	0	0%	1,500	0	0	114	4 U	5 U	5 U		5 U
Total Xylenes	UG/KG	0	0%	1,200	0	0	114	13 U	15 U	15 U		15 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	300	0	0	114	4 U	5 U	5 U		5 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	4 U	5 U	5 U		5 U
Trichloroethene	UG/KG	77	19%	700	0	22	114	4 U	5 U	2 J		5 U
Trichlorofluoromethane	UG/KG	0	0%		NA	0	114	4 U	5 U	5 U		5 U
Vinyl chloride	UG/KG	0	0%	200	0	0	114	8 U	10 U	10 U		10 U
Carcinogenic PAHs												
Benzo(a)anthracene	UG/KG	260,000	52%		NA	66	127	340 U	410 U	380 U	180 J	390 U
Benzo(a)pyrene	UG/KG	240,000	49%		NA	62	127	340 U	410 U	380 U	140 J	390 U
Benzo(b)fluoranthene	UG/KG	310,000	51%		NA	65	127	340 U	410 U	380 U	240 J	390 U
Benzo(k)fluoranthene	UG/KG	59,000	24%		NA	30	127	340 U	410 U	380 U	360 UJ	390 U
Chrysene	UG/KG	240,000	50%		NA	64	127	340 U	410 U	380 U	140 J	390 U
Dibenz(a,h)anthracene	UG/KG	40,000	35%		NA	44	127	340 U	410 U	380 U	25 J	390 U
Indeno(1,2,3-cd)pyrene	UG/KG	150,000	46%		NA	58	127	340 U	410 U	380 U	80 J	390 U
BTE (calculated)	MG/KG	355	94%	10 [b]	8	127	135	0.39	0.48	0.44	0.22	0.45
Metals												
Aluminum	MG/KG	17,500	100%	76,100	0	114	114	9560 J	13300 J	11600 J		11400 J
Antimony	MG/KG	11.3	18%	31	0	21	114	0.63 UJ	0.83 U	2.3 J		1 J
Arsenic	MG/KG	19.5	100%	21.5 [d]	0	114	114	4.4	5.2	5.7		6.3
Barium	MG/KG	248	100%	5,370	0	114	114	51.4 J	111 J	78.7 J		67.7 J
Beryllium	MG/KG	1	100%	150	0	114	114	0.43	0.69	0.72		0.7
Cadmium	MG/KG	2.5	94%	37	0	107	114	0.21	0.08 J	0.07 U		0.1 J
Calcium	MG/KG	216,000	100%		NA	114	114	30500 J	3970 J	13000 J		9730 J
Chromium	MG/KG	44.5	100%		NA	113	113	14.8 J	20.5 J	17.7 J		17.6 J
Cobalt	MG/KG	16.8	100%	903	0	114	114	7.9 J	9.1 J	10.5 J		10.9 J
Copper	MG/KG	131	100%	3,130	0	114	114	18.7	13.7 J	21.1		23.7
Iron	MG/KG	51,100	100%	38,600 [d]	2	114	114	19400 J	25500 J	26400 J		26800 J
Lead	MG/KG	469	100%	400	1	114	114	9 J	12.4 J	15 J		13.3 J
Magnesium	MG/KG	25200 [1]	100%		NA	114	114	7440 J	4130 J	5620 J		7120 J
Manganese	MG/KG	1,540	100%	1,760	0	114	114	404 J	371 J	688 J		672 J
Mercury	MG/KG	0.327	99%	23	0	113	114	0.007 J	0.053	0.027 J		0.032 J
Nickel	MG/KG	38.6	100%	1,560	0	114	114	23.4 J	21.7 J	27.2 J		30.2 J
Potassium	MG/KG	1,750	100%		NA	114	114	1140 J	1220 J	998 J		1000 J
Selenium	MG/KG	3.4	25%	390	0	28	114	0.54 U	0.71 U	0.7 U		0.69 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY							SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID							11EXFLH1101	11EXFLH301	11EXFLH401	11EXPRH401	11EXFLH501
MATRIX							SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID							11EXFLH1101	11EXFLH301	11EXFLH401	11EXFLH402	11EXFLH501
SAMPLE DEPTH TO TOP OF SAMPLE							0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE							0.2	0.2	0.2	0.2	0.2
SAMPLE DATE							11/28/2006	12/4/2006	12/4/2006	1/5/2007	12/4/2006
QC CODE							SA	SA	SA	SA	SA
STUDY ID							IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Silver	MG/KG	2.2	5%	390	0	6	114	0.46 U	0.6 U	0.59 U		0.58 U
Sodium	MG/KG	164	75%		NA	86	114	68.4 J	41.3 J	34.4 U		42.5 J
Thallium	MG/KG	2.1	25%	5.2	0	28	114	0.6 U	0.79 U	0.78 U		0.77 U
Vanadium	MG/KG	31.6	100%	78.2	0	114	114	15.4 J	23 J	19.8 J		19.6 J
Zinc	MG/KG	591	100%	23,500	0	114	114	61.7 J	94.4 J	90.3 J		93.3 J

Notes:
(1) Maximum value came from sample-duplicate pair averaged value.
(2) The cleanup goal (CUG) values were based on the following criteria:
  a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM)
    HWR-94-4046, Revised January 24, 1994.
  b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
  c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
  d. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
(3) The number of exceedances is not applicable (NA) for parameters without site-specific CUGs.
(4) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLH601	11EXFLH701	11EXFLH801	11EXFLH901	11EXFLI1001
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLH601	11EXFLH701	11EXFLH801	11EXFLH901	11EXFLI1001
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/4/2006	12/4/2006	11/30/2006	11/27/2006	11/30/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds												
1,1,1-Trichloroethane	UG/KG	0	0%	800	0	0	114	5 U	5 U	5 U	4 U	5 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	600	0	0	114	5 U	5 U	5 U	4 U	5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	4 U	5 U
1,1,2-Trichloroethane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	4 U	5 U
1,1-Dichloroethane	UG/KG	0	0%	200	0	0	114	5 U	5 U	5 U	4 U	5 U
1,1-Dichloroethene	UG/KG	0	0%	400	0	0	114	5 U	5 U	5 U	4 U	5 U
1,2,3-Trichlorobenzene	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	4 U	5 U
1,2,4-Trichlorobenzene	UG/KG	0	0%	3,400	0	0	114	5 U	5 U	5 U	4 U	5 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	4 U	5 U
1,2-Dibromoethane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	4 U	5 U
1,2-Dichlorobenzene	UG/KG	0	0%	7,900	0	0	114	5 U	5 U	5 U	4 U	5 U
1,2-Dichloroethane	UG/KG	0	0%	100	0	0	114	5 U	5 U	5 U	4 U	5 U
1,2-Dichloropropane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	4 U	5 U
1,3-Dichlorobenzene	UG/KG	0	0%	1,600	0	0	114	5 U	5 U	5 U	4 U	5 U
1,4-Dichlorobenzene	UG/KG	0	0%	8,500	0	0	114	5 U	5 U	5 U	4 U	5 U
Acetone	UG/KG	67	2%	200	0	2	106	24 U	23 U	27 U	20 U	26 U
Benzene	UG/KG	0	0%	60	0	0	114	5 U	5 U	5 U	4 U	5 U
Bromochloromethane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	4 U	5 U
Bromodichloromethane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	4 U	5 U
Bromoform	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	4 U	5 U
Carbon disulfide	UG/KG	0	0%	2,700	0	0	114	5 U	5 U	5 U	4 U	5 U
Carbon tetrachloride	UG/KG	0	0%	600	0	0	114	5 U	5 U	5 U	4 U	5 U
Chlorobenzene	UG/KG	0	0%	1,700	0	0	114	5 U	5 U	5 U	4 U	5 U
Chlorodibromomethane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	4 U	5 U
Chloroethane	UG/KG	0	0%	1,900	0	0	114	10 U	9 U	11 U	8 U	10 U
Chloroform	UG/KG	0	0%	300	0	0	114	5 U	5 U	5 U	4 U	5 U
Cis-1,2-Dichloroethene	UG/KG	2	1%		NA	1	114	5 U	5 U	5 U	4 U	5 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	4 U	5 U
Cyclohexane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	4 U	5 U
Dichlorodifluoromethane	UG/KG	2.25 [1]	4%		NA	5	114	5 U	5 U	5 U	4 U	5 U
Ethyl benzene	UG/KG	0	0%	5,500	0	0	114	5 U	5 U	5 U	4 U	5 U
Isopropylbenzene	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	4 U	5 U
Methyl Acetate	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	4 U	5 U
Methyl Tertbutyl Ether	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	4 U	5 U
Methyl bromide	UG/KG	0	0%		NA	0	89	10 UJ	9 UJ	11 UJ	8 UJ	10 UJ
Methyl butyl ketone	UG/KG	0	0%		NA	0	114	24 U	23 U	27 U	20 U	26 U
Methyl chloride	UG/KG	0	0%		NA	0	114	10 U	9 U	11 U	8 U	10 U
Methyl cyclohexane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	4 U	5 U
Methyl ethyl ketone	UG/KG	0	0%	300	0	0	114	24 U	23 U	27 U	20 U	26 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLH601	11EXFLH701	11EXFLH801	11EXFLH901	11EXFLI1001
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLH601	11EXFLH701	11EXFLH801	11EXFLH901	11EXFLI1001
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/4/2006	12/4/2006	11/30/2006	11/27/2006	11/30/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Methyl isobutyl ketone	UG/KG	0	0%	1,000	0	0	114	24 U	23 U	27 U	20 U	26 U
Methylene chloride	UG/KG	49	89%	100	0	102	114	6 J	6 J	12 J	5 J	11 J
Styrene	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	4 U	5 U
Tetrachloroethene	UG/KG	2	2%	1,400	0	2	114	5 U	5 U	5 U	4 U	5 U
Toluene	UG/KG	0	0%	1,500	0	0	114	5 U	5 U	5 U	4 U	5 U
Total Xylenes	UG/KG	0	0%	1,200	0	0	114	14 U	14 U	16 U	12 U	16 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	300	0	0	114	5 U	5 U	5 U	4 U	5 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	4 U	5 U
Trichloroethene	UG/KG	77	19%	700	0	22	114	3 J	5 U	2 J	4	5 U
Trichlorofluoromethane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 UJ	4 U	5 UJ
Vinyl chloride	UG/KG	0	0%	200	0	0	114	10 U	9 U	11 U	8 U	10 U
Carcinogenic PAHs												
Benzo(a)anthracene	UG/KG	260,000	52%		NA	66	127	380 U	370 U	400 U	200 J	390 U
Benzo(a)pyrene	UG/KG	240,000	49%		NA	62	127	380 U	370 U	400 U	190 J	390 U
Benzo(b)fluoranthene	UG/KG	310,000	51%		NA	65	127	380 U	370 U	400 U	220 J	390 U
Benzo(k)fluoranthene	UG/KG	59,000	24%		NA	30	127	380 U	370 U	400 U	98 J	390 U
Chrysene	UG/KG	240,000	50%		NA	64	127	380 U	370 U	400 U	200 J	390 U
Dibenz(a,h)anthracene	UG/KG	40,000	35%		NA	44	127	380 U	370 U	400 U	31 J	390 U
Indeno(1,2,3-cd)pyrene	UG/KG	150,000	46%		NA	58	127	380 U	370 U	400 U	100 J	390 U
BTE (calculated)	MG/KG	355	94%	10 [b]	8	127	135	0.44	0.43	0.46	0.28	0.45
Metals												
Aluminum	MG/KG	17,500	100%	76,100	0	114	114	11600 J	10300 J	13100 J	5370 J	9510 J
Antimony	MG/KG	11.3	18%	31	0	21	114	0.85 U	1.6 J	0.59 U	0.66 UJ	0.66 U
Arsenic	MG/KG	19.5	100%	21.5 [d]	0	114	114	6.2	5.3	6.4	3.5	5
Barium	MG/KG	248	100%	5,370	0	114	114	89.8 J	64.7 J	112 J	32.1 J	75.7 J
Beryllium	MG/KG	1	100%	150	0	114	114	0.71	0.61	0.67	0.39	0.49
Cadmium	MG/KG	2.5	94%	37	0	107	114	0.15 J	0.08 J	0.28	0.17 J	0.24 U
Calcium	MG/KG	216,000	100%		NA	114	114	8080 J	12700 J	2480 J	216000 J	1990 J
Chromium	MG/KG	44.5	100%		NA	113	113	18.2 J	16 J	18.8 J	9.1 J	13.9 J
Cobalt	MG/KG	16.8	100%	903	0	114	114	10.2 J	9.6 J	10.2	5.9 J	7.5
Copper	MG/KG	131	100%	3,130	0	114	114	19.9	21.8	21.8	13.7	15.5
Iron	MG/KG	51,100	100%	38,600 [d]	2	114	114	26900 J	23900 J	26800	12500 J	20300
Lead	MG/KG	469	100%	400	1	114	114	15.5 J	11.6 J	14	8.2 J	10.1
Magnesium	MG/KG	25200 [1]	100%		NA	114	114	4880 J	5590 J	3370	7540 J	2730
Manganese	MG/KG	1,540	100%	1,760	0	114	114	698 J	485 J	622	348 J	514
Mercury	MG/KG	0.327	99%	23	0	113	114	0.033 J	0.029 J	0.047	0.019 J	0.032
Nickel	MG/KG	38.6	100%	1,560	0	114	114	26.7 J	26.4 J	24.3	15.7 J	19.9
Potassium	MG/KG	1,750	100%		NA	114	114	965 J	1010 J	1270	799 J	1000
Selenium	MG/KG	3.4	25%	390	0	28	114	0.72 U	0.7 U	0.42 U	0.57 U	0.47 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLH601	11EXFLH701	11EXFLH801	11EXFLH901	11EXFLI1001
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLH601	11EXFLH701	11EXFLH801	11EXFLH901	11EXFLI1001
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/4/2006	12/4/2006	11/30/2006	11/27/2006	11/30/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Silver	MG/KG	2.2	5%	390	0	6	114	0.61 U	0.59 U	0.52 U	0.48 U	0.59 U
Sodium	MG/KG	164	75%		NA	86	114	35.6 U	52.7 J	32.1 J	63.1 J	23.6 U
Thallium	MG/KG	2.1	25%	5.2	0	28	114	0.81 U	0.78 U	0.51 U	0.63 U	0.58 U
Vanadium	MG/KG	31.6	100%	78.2	0	114	114	20.9 J	18.3 J	22.8 J	9.9 J	16.4 J
Zinc	MG/KG	591	100%	23,500	0	114	114	88.5 J	88.7 J	99.9 J	51.1 J	76.1 J

Notes:
(1) Maximum value came from sample-duplicate pair averaged value.
(2) The cleanup goal (CUG) values were based on the following criteria:
  a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM)
    HWR-94-4046, Revised January 24, 1994.
  b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
  c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
  d. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
(3) The number of exceedances is not applicable (NA) for parameters without site-specific CUGs.
(4) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLI1101	11EXFLI601	11EXFLI701	11EXFLI801	11EXFLI901
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLI1101	11EXFLI601	11EXFLI701	11EXFLI801	11EXFLI901
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/30/2006	12/4/2006	12/4/2006	11/30/2006	11/30/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds												
1,1,1-Trichloroethane	UG/KG	0	0%	800	0	0	114	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	600	0	0	114	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	UG/KG	0	0%	200	0	0	114	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	UG/KG	0	0%	400	0	0	114	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichlorobenzene	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	UG/KG	0	0%	3,400	0	0	114	5 U	5 U	5 U	5 U	5 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	5 U
1,2-Dichlorobenzene	UG/KG	0	0%	7,900	0	0	114	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	UG/KG	0	0%	100	0	0	114	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	5 U
1,3-Dichlorobenzene	UG/KG	0	0%	1,600	0	0	114	5 U	5 U	5 U	5 U	5 U
1,4-Dichlorobenzene	UG/KG	0	0%	8,500	0	0	114	5 U	5 U	5 U	5 U	5 U
Acetone	UG/KG	67	2%	200	0	2	106	25 U	24 U	24 U	27 U	25 U
Benzene	UG/KG	0	0%	60	0	0	114	5 U	5 U	5 U	5 U	5 U
Bromochloromethane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	5 U
Bromoform	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	5 U
Carbon disulfide	UG/KG	0	0%	2,700	0	0	114	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	UG/KG	0	0%	600	0	0	114	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	UG/KG	0	0%	1,700	0	0	114	5 U	5 U	5 U	5 U	5 U
Chlorodibromomethane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	5 U
Chloroethane	UG/KG	0	0%	1,900	0	0	114	10 U	10 U	9 U	11 U	10 U
Chloroform	UG/KG	0	0%	300	0	0	114	5 U	5 U	5 U	5 U	5 U
Cis-1,2-Dichloroethene	UG/KG	2	1%		NA	1	114	5 U	5 U	5 U	5 U	5 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	5 U
Cyclohexane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	5 U
Dichlorodifluoromethane	UG/KG	2.25 [1]	4%		NA	5	114	5 U	5 U	5 U	5 U	5 U
Ethyl benzene	UG/KG	0	0%	5,500	0	0	114	5 U	5 U	5 U	5 U	5 U
Isopropylbenzene	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	5 U
Methyl Acetate	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	5 U
Methyl Tertbutyl Ether	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	5 U
Methyl bromide	UG/KG	0	0%		NA	0	89	10 UJ	10 UJ	9 UJ	11 UJ	10 UJ
Methyl butyl ketone	UG/KG	0	0%		NA	0	114	25 U	24 U	24 U	27 U	25 U
Methyl chloride	UG/KG	0	0%		NA	0	114	10 U	10 U	9 U	11 U	10 U
Methyl cyclohexane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	5 U
Methyl ethyl ketone	UG/KG	0	0%	300	0	0	114	25 U	24 U	24 U	27 U	25 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLI1101	11EXFLI601	11EXFLI701	11EXFLI801	11EXFLI901
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLI1101	11EXFLI601	11EXFLI701	11EXFLI801	11EXFLI901
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/30/2006	12/4/2006	12/4/2006	11/30/2006	11/30/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Methyl isobutyl ketone	UG/KG	0	0%	1,000	0	0	114	25 U	24 U	24 U	27 U	25 U
Methylene chloride	UG/KG	49	89%	100	0	102	114	10 J	6 J	6 J	13 J	10 J
Styrene	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	UG/KG	2	2%	1,400	0	2	114	5 U	5 U	5 U	5 U	5 U
Toluene	UG/KG	0	0%	1,500	0	0	114	5 U	5 U	5 U	5 U	5 U
Total Xylenes	UG/KG	0	0%	1,200	0	0	114	15 U	14 U	14 U	16 U	15 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	300	0	0	114	5 U	5 U	5 U	5 U	5 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	5 U
Trichloroethene	UG/KG	77	19%	700	0	22	114	2 J	2 J	2 J	5 U	5 U
Trichlorofluoromethane	UG/KG	0	0%		NA	0	114	5 UJ	5 U	5 U	5 UJ	5 UJ
Vinyl chloride	UG/KG	0	0%	200	0	0	114	10 U	10 U	9 U	11 U	10 U
Carcinogenic PAHs												
Benzo(a)anthracene	UG/KG	260,000	52%		NA	66	127	400 U	390 U	390 U	390 U	400 U
Benzo(a)pyrene	UG/KG	240,000	49%		NA	62	127	400 U	390 U	390 U	390 U	400 U
Benzo(b)fluoranthene	UG/KG	310,000	51%		NA	65	127	400 U	390 U	390 U	390 U	400 U
Benzo(k)fluoranthene	UG/KG	59,000	24%		NA	30	127	400 U	390 U	390 U	390 U	400 U
Chrysene	UG/KG	240,000	50%		NA	64	127	400 U	390 U	390 U	390 U	400 U
Dibenz(a,h)anthracene	UG/KG	40,000	35%		NA	44	127	400 U	390 U	390 U	390 U	400 U
Indeno(1,2,3-cd)pyrene	UG/KG	150,000	46%		NA	58	127	400 U	390 U	390 U	390 U	400 U
BTE (calculated)	MG/KG	355	94%	10 [b]	8	127	135	0.46	0.45	0.45	0.45	0.46
Metals												
Aluminum	MG/KG	17,500	100%	76,100	0	114	114	13200 J	9490 J	11200 J	9780 J	13200 J
Antimony	MG/KG	11.3	18%	31	0	21	114	0.64 U	1.8 J	0.94 J	0.63 U	0.66 U
Arsenic	MG/KG	19.5	100%	21.5 [d]	0	114	114	6.4	5.5	6	5	6.6
Barium	MG/KG	248	100%	5,370	0	114	114	111 J	80.4 J	74 J	81.9 J	108 J
Beryllium	MG/KG	1	100%	150	0	114	114	0.67	0.58	0.63	0.52	0.68
Cadmium	MG/KG	2.5	94%	37	0	107	114	0.28	0.13 J	0.11 J	0.22 U	0.29
Calcium	MG/KG	216,000	100%		NA	114	114	2690 J	29400 J	9790 J	1910 J	2520 J
Chromium	MG/KG	44.5	100%		NA	113	113	18.4 J	14.1 J	16.5 J	14.3 J	19 J
Cobalt	MG/KG	16.8	100%	903	0	114	114	9.1	9.3 J	10.4 J	7.4	8.9
Copper	MG/KG	131	100%	3,130	0	114	114	21.4	22.4	23	15.9	20.9
Iron	MG/KG	51,100	100%	38,600 [d]	2	114	114	25800	21200 J	25400 J	21000	26900
Lead	MG/KG	469	100%	400	1	114	114	12.6	11.3 J	13.2 J	10.4	12.8
Magnesium	MG/KG	25200 [1]	100%		NA	114	114	3350	11300 J	6040 J	2630	3600
Manganese	MG/KG	1,540	100%	1,760	0	114	114	623	592 J	599 J	445	665
Mercury	MG/KG	0.327	99%	23	0	113	114	0.04	0.029 J	0.031 J	0.041	0.041
Nickel	MG/KG	38.6	100%	1,560	0	114	114	23.8	24.3 J	27.8 J	19.3	26.5
Potassium	MG/KG	1,750	100%		NA	114	114	1340	1010 J	992 J	979	1360
Selenium	MG/KG	3.4	25%	390	0	28	114	0.46 U	0.68 U	0.69 U	0.45 U	0.47 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLI1101	11EXFLI601	11EXFLI701	11EXFLI801	11EXFLI901
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLI1101	11EXFLI601	11EXFLI701	11EXFLI801	11EXFLI901
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/30/2006	12/4/2006	12/4/2006	11/30/2006	11/30/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Silver	MG/KG	2.2	5%	390	0	6	114	0.57 U	0.58 U	0.58 U	0.09 U	0.59 U
Sodium	MG/KG	164	75%		NA	86	114	28.4 J	71.9 J	41.8 J	22.4 U	23.4 U
Thallium	MG/KG	2.1	25%	5.2	0	28	114	0.56 U	0.77 U	0.77 U	0.55 U	0.57 U
Vanadium	MG/KG	31.6	100%	78.2	0	114	114	23 J	16.9 J	19.7 J	17 J	22.9 J
Zinc	MG/KG	591	100%	23,500	0	114	114	97.9 J	78.4 J	90.4 J	77.6 J	107 J

Notes:
(1) Maximum value came from sample-duplicate pair averaged value.
(2) The cleanup goal (CUG) values were based on the following criteria:
  a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM)
    HWR-94-4046, Revised January 24, 1994.
  b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
  c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
  d. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
(3) The number of exceedances is not applicable (NA) for parameters without site-specific CUGs.
(4) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXPRA401	11EXPRA501	11EXPRA601	11EXPRA701	11EXPRA702
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXPRA401	11EXPRA501	11EXPRA601	11EXPRA701	11EXPRA702
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/15/2006	11/15/2006	11/15/2006	11/15/2006	11/15/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds												
1,1,1-Trichloroethane	UG/KG	0	0%	800	0	0	114	6 U	6 U	6 U	6 U	6 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	600	0	0	114	6 U	6 U	6 U	6 U	6 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		NA	0	114	6 UJ	6 UJ	6 UJ	6 UJ	6 UJ
1,1,2-Trichloroethane	UG/KG	0	0%		NA	0	114	6 U	6 U	6 U	6 U	6 U
1,1-Dichloroethane	UG/KG	0	0%	200	0	0	114	6 U	6 U	6 U	6 U	6 U
1,1-Dichloroethene	UG/KG	0	0%	400	0	0	114	6 U	6 U	6 U	6 U	6 U
1,2,3-Trichlorobenzene	UG/KG	0	0%		NA	0	114	6 U	6 U	6 U	6 U	6 U
1,2,4-Trichlorobenzene	UG/KG	0	0%	3,400	0	0	114	6 U	6 U	6 U	6 U	6 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		NA	0	114	6 U	6 U	6 U	6 U	6 U
1,2-Dibromoethane	UG/KG	0	0%		NA	0	114	6 U	6 U	6 U	6 U	6 U
1,2-Dichlorobenzene	UG/KG	0	0%	7,900	0	0	114	6 U	6 U	6 U	6 U	6 U
1,2-Dichloroethane	UG/KG	0	0%	100	0	0	114	6 U	6 U	6 U	6 U	6 U
1,2-Dichloropropane	UG/KG	0	0%		NA	0	114	6 U	6 U	6 U	6 U	6 U
1,3-Dichlorobenzene	UG/KG	0	0%	1,600	0	0	114	6 U	6 U	6 U	6 U	6 U
1,4-Dichlorobenzene	UG/KG	0	0%	8,500	0	0	114	6 U	6 U	6 U	6 U	6 U
Acetone	UG/KG	67	2%	200	0	2	106	30 U	29 U	32 U	29 U	30 U
Benzene	UG/KG	0	0%	60	0	0	114	6 U	6 U	6 U	6 U	6 U
Bromochloromethane	UG/KG	0	0%		NA	0	114	6 U	6 U	6 U	6 U	6 U
Bromodichloromethane	UG/KG	0	0%		NA	0	114	6 U	6 U	6 U	6 U	6 U
Bromoform	UG/KG	0	0%		NA	0	114	6 U	6 U	6 U	6 U	6 U
Carbon disulfide	UG/KG	0	0%	2,700	0	0	114	6 U	6 U	6 U	6 U	6 U
Carbon tetrachloride	UG/KG	0	0%	600	0	0	114	6 U	6 U	6 U	6 U	6 U
Chlorobenzene	UG/KG	0	0%	1,700	0	0	114	6 U	6 U	6 U	6 U	6 U
Chlorodibromomethane	UG/KG	0	0%		NA	0	114	6 U	6 U	6 U	6 U	6 U
Chloroethane	UG/KG	0	0%	1,900	0	0	114	12 U	12 U	13 U	11 U	12 U
Chloroform	UG/KG	0	0%	300	0	0	114	6 U	6 U	6 U	6 U	6 U
Cis-1,2-Dichloroethene	UG/KG	2	1%		NA	1	114	6 U	6 U	6 U	6 U	6 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	6 U	6 U	6 U	6 U	6 U
Cyclohexane	UG/KG	0	0%		NA	0	114	6 U	6 U	6 U	6 U	6 U
Dichlorodifluoromethane	UG/KG	2.25 [1]	4%		NA	5	114	6 U	6 U	6 U	6 U	6 U
Ethyl benzene	UG/KG	0	0%	5,500	0	0	114	6 U	6 U	6 U	6 U	6 U
Isopropylbenzene	UG/KG	0	0%		NA	0	114	6 U	6 U	6 U	6 U	6 U
Methyl Acetate	UG/KG	0	0%		NA	0	114	6 U	6 U	6 U	6 U	6 U
Methyl Tertbutyl Ether	UG/KG	0	0%		NA	0	114	6 U	6 U	6 U	6 U	6 U
Methyl bromide	UG/KG	0	0%		NA	0	89	12 U	12 U	13 U	11 U	12 U
Methyl butyl ketone	UG/KG	0	0%		NA	0	114	30 U	29 U	32 U	29 U	30 U
Methyl chloride	UG/KG	0	0%		NA	0	114	12 U	12 U	13 U	11 U	12 U
Methyl cyclohexane	UG/KG	0	0%		NA	0	114	6 U	6 U	6 U	6 U	6 U
Methyl ethyl ketone	UG/KG	0	0%	300	0	0	114	30 U	29 U	32 U	29 U	30 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXPRA401	11EXPRA501	11EXPRA601	11EXPRA701	11EXPRA702
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXPRA401	11EXPRA501	11EXPRA601	11EXPRA701	11EXPRA702
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/15/2006	11/15/2006	11/15/2006	11/15/2006	11/15/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Methyl isobutyl ketone	UG/KG	0	0%	1,000	0	0	114	30 U	29 U	32 U	29 U	30 U
Methylene chloride	UG/KG	49	89%	100	0	102	114	13 J	12 J	7 J	10 J	17 J
Styrene	UG/KG	0	0%		NA	0	114	6 U	6 U	6 U	6 U	6 U
Tetrachloroethene	UG/KG	2	2%	1,400	0	2	114	6 U	6 U	6 U	6 U	6 U
Toluene	UG/KG	0	0%	1,500	0	0	114	6 U	6 U	6 U	6 U	6 U
Total Xylenes	UG/KG	0	0%	1,200	0	0	114	18 U	18 U	19 U	17 U	18 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	300	0	0	114	6 U	6 U	6 U	6 U	6 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	6 U	6 U	6 U	6 U	6 U
Trichloroethene	UG/KG	77	19%	700	0	22	114	6 U	6 U	6 U	6 U	6 U
Trichlorofluoromethane	UG/KG	0	0%		NA	0	114	6 UJ	6 UJ	6 UJ	6 UJ	6 UJ
Vinyl chloride	UG/KG	0	0%	200	0	0	114	12 U	12 U	13 U	11 U	12 U
Carcinogenic PAHs												
Benzo(a)anthracene	UG/KG	260,000	52%		NA	66	127	410 U	400 U	420 U	410 U	390 U
Benzo(a)pyrene	UG/KG	240,000	49%		NA	62	127	410 U	400 U	420 U	410 U	390 U
Benzo(b)fluoranthene	UG/KG	310,000	51%		NA	65	127	410 U	400 U	420 U	410 U	390 U
Benzo(k)fluoranthene	UG/KG	59,000	24%		NA	30	127	410 U	400 U	420 U	410 U	390 U
Chrysene	UG/KG	240,000	50%		NA	64	127	410 U	400 U	420 U	410 U	390 U
Dibenz(a,h)anthracene	UG/KG	40,000	35%		NA	44	127	410 U	400 U	420 U	410 U	390 U
Indeno(1,2,3-cd)pyrene	UG/KG	150,000	46%		NA	58	127	410 U	400 U	420 U	410 U	390 U
BTE (calculated)	MG/KG	355	94%	10 [b]	8	127	135	0.48	0.46	0.49	0.48	0.45
Metals												
Aluminum	MG/KG	17,500	100%	76,100	0	114	114	10800 J	14300 J	14900 J	11300 J	9700 J
Antimony	MG/KG	11.3	18%	31	0	21	114	0.82 UJ	0.74 UJ	0.81 UJ	0.78 UJ	0.79 UJ
Arsenic	MG/KG	19.5	100%	21.5 [d]	0	114	114	5.1 J	7.3 J	6.5 J	5.7 J	5.3 J
Barium	MG/KG	248	100%	5,370	0	114	114	98.7 J	120 J	154 J	101 J	80.7 J
Beryllium	MG/KG	1	100%	150	0	114	114	0.61 J	0.79 J	0.89 J	0.65 J	0.55 J
Cadmium	MG/KG	2.5	94%	37	0	107	114	0.27 J	0.4 J	0.44 J	0.28 J	0.3 J
Calcium	MG/KG	216,000	100%		NA	114	114	2760 J	2730 J	4450 J	2280 J	2430 J
Chromium	MG/KG	44.5	100%		NA	113	113	15 J	20.4 J	19.5 J	15.9 J	14.7 J
Cobalt	MG/KG	16.8	100%	903	0	114	114	7.5 J	10.7 J	10.7 J	8.7 J	8 J
Copper	MG/KG	131	100%	3,130	0	114	114	16.6 J	22.6 J	18.5 J	13.5 J	16.5 J
Iron	MG/KG	51,100	100%	38,600 [d]	2	114	114	20200 J	27800 J	25700 J	22500 J	20100 J
Lead	MG/KG	469	100%	400	1	114	114	11.4 J	16.1 J	15 J	302 J	11.7 J
Magnesium	MG/KG	25200 [1]	100%		NA	114	114	2700 J	4150 J	3680 J	2890 J	3040 J
Manganese	MG/KG	1,540	100%	1,760	0	114	114	587 J	868 J	1190 J	888 J	580 J
Mercury	MG/KG	0.327	99%	23	0	113	114	0.044	0.037	0.043	0.056	0.035
Nickel	MG/KG	38.6	100%	1,560	0	114	114	18.4 J	29.4 J	25.1 J	19.9 J	20.9 J
Potassium	MG/KG	1,750	100%		NA	114	114	1120 J	1250 J	1750 J	1140 J	1020 J
Selenium	MG/KG	3.4	25%	390	0	28	114	1.8 J	1.9 J	2.3 J	1.6 J	1.4 J

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY							SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID							11EXPRA401	11EXPRA501	11EXPRA601	11EXPRA701	11EXPRA702
MATRIX							SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID							11EXPRA401	11EXPRA501	11EXPRA601	11EXPRA701	11EXPRA702
SAMPLE DEPTH TO TOP OF SAMPLE							0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE							0.2	0.2	0.2	0.2	0.2
SAMPLE DATE							11/15/2006	11/15/2006	11/15/2006	11/15/2006	11/15/2006
QC CODE							SA	SA	SA	SA	SA
STUDY ID							IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Silver	MG/KG	2.2	5%	390	0	6	114	0.18 UJ	0.16 UJ	0.18 UJ	0.17 UJ	0.17 UJ
Sodium	MG/KG	164	75%		NA	86	114	34.5 UJ	42.6 J	34 UJ	39.5 J	35.6 J
Thallium	MG/KG	2.1	25%	5.2	0	28	114	1.4 J	1.6 J	1.5 J	1.5 J	1.5 J
Vanadium	MG/KG	31.6	100%	78.2	0	114	114	18.9 J	27.6 J	24.7 J	20.3 J	16.9 J
Zinc	MG/KG	591	100%	23,500	0	114	114	71.6 J	103 J	85.7 J	131 J	69.1 J

Notes:
(1) Maximum value came from sample-duplicate pair averaged value.
(2) The cleanup goal (CUG) values were based on the following criteria:
  a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046, Revised January 24, 1994.
  b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
  c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
  d. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
(3) The number of exceedances is not applicable (NA) for parameters without site-specific CUGs.
(4) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXPRB101	11EXPRB201	11EXPRB202	11EXPRB301	11EXPRB801
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXPRB101	11EXPRB201	11EXPRB202	11EXPRB301	11EXPRB801
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/6/2006	11/15/2006	11/15/2006	11/15/2006	11/15/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds												
1,1,1-Trichloroethane	UG/KG	0	0%	800	0	0	114	6 U	7 U	6 U	6 U	5 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	600	0	0	114	6 U	7 U	6 U	6 U	5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		NA	0	114	6 U	7 UJ	6 UJ	6 UJ	5 UJ
1,1,2-Trichloroethane	UG/KG	0	0%		NA	0	114	6 U	7 U	6 U	6 U	5 U
1,1-Dichloroethane	UG/KG	0	0%	200	0	0	114	6 U	7 U	6 U	6 U	5 U
1,1-Dichloroethene	UG/KG	0	0%	400	0	0	114	6 U	7 U	6 U	6 U	5 U
1,2,3-Trichlorobenzene	UG/KG	0	0%		NA	0	114	6 U	7 U	6 U	6 U	5 U
1,2,4-Trichlorobenzene	UG/KG	0	0%	3,400	0	0	114	6 U	7 U	6 U	6 U	5 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		NA	0	114	6 U	7 U	6 U	6 U	5 U
1,2-Dibromoethane	UG/KG	0	0%		NA	0	114	6 U	7 U	6 U	6 U	5 U
1,2-Dichlorobenzene	UG/KG	0	0%	7,900	0	0	114	6 U	7 U	6 U	6 U	5 U
1,2-Dichloroethane	UG/KG	0	0%	100	0	0	114	6 U	7 U	6 U	6 U	5 U
1,2-Dichloropropane	UG/KG	0	0%		NA	0	114	6 U	7 U	6 U	6 U	5 U
1,3-Dichlorobenzene	UG/KG	0	0%	1,600	0	0	114	6 U	7 U	6 U	6 U	5 U
1,4-Dichlorobenzene	UG/KG	0	0%	8,500	0	0	114	6 U	7 U	6 U	6 U	5 U
Acetone	UG/KG	67	2%	200	0	2	106	30 U	36 U	31 U	30 U	27 U
Benzene	UG/KG	0	0%	60	0	0	114	6 U	7 U	6 U	6 U	5 U
Bromochloromethane	UG/KG	0	0%		NA	0	114	6 U	7 U	6 U	6 U	5 U
Bromodichloromethane	UG/KG	0	0%		NA	0	114	6 U	7 U	6 U	6 U	5 U
Bromoform	UG/KG	0	0%		NA	0	114	6 U	7 U	6 U	6 U	5 U
Carbon disulfide	UG/KG	0	0%	2,700	0	0	114	6 U	7 U	6 U	6 U	5 U
Carbon tetrachloride	UG/KG	0	0%	600	0	0	114	6 U	7 U	6 U	6 U	5 U
Chlorobenzene	UG/KG	0	0%	1,700	0	0	114	6 U	7 U	6 U	6 U	5 U
Chlorodibromomethane	UG/KG	0	0%		NA	0	114	6 U	7 U	6 U	6 U	5 U
Chloroethane	UG/KG	0	0%	1,900	0	0	114	12 U	14 U	12 U	12 U	11 U
Chloroform	UG/KG	0	0%	300	0	0	114	6 U	7 U	6 U	6 U	5 U
Cis-1,2-Dichloroethene	UG/KG	2	1%		NA	1	114	6 U	7 U	6 U	6 U	5 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	6 U	7 U	6 U	6 U	5 U
Cyclohexane	UG/KG	0	0%		NA	0	114	6 U	7 U	6 U	6 U	5 U
Dichlorodifluoromethane	UG/KG	2.25 [1]	4%		NA	5	114	6 U	7 U	6 U	6 U	5 U
Ethyl benzene	UG/KG	0	0%	5,500	0	0	114	6 U	7 U	6 U	6 U	5 U
Isopropylbenzene	UG/KG	0	0%		NA	0	114	6 U	7 U	6 U	6 U	5 U
Methyl Acetate	UG/KG	0	0%		NA	0	114	6 U	7 U	6 U	6 U	5 U
Methyl Tertbutyl Ether	UG/KG	0	0%		NA	0	114	6 U	7 U	6 U	6 U	5 U
Methyl bromide	UG/KG	0	0%		NA	0	89	12 UJ	14 U	12 U	12 U	11 U
Methyl butyl ketone	UG/KG	0	0%		NA	0	114	30 U	36 U	31 U	30 U	27 U
Methyl chloride	UG/KG	0	0%		NA	0	114	12 U	14 U	12 U	12 U	11 U
Methyl cyclohexane	UG/KG	0	0%		NA	0	114	6 U	7 U	6 U	6 U	5 U
Methyl ethyl ketone	UG/KG	0	0%	300	0	0	114	30 U	36 U	31 U	30 U	27 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXPRB101	11EXPRB201	11EXPRB202	11EXPRB301	11EXPRB801
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXPRB101	11EXPRB201	11EXPRB202	11EXPRB301	11EXPRB801
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/6/2006	11/15/2006	11/15/2006	11/15/2006	11/15/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Methyl isobutyl ketone	UG/KG	0	0%	1,000	0	0	114	30 U	36 U	31 U	30 U	27 U
Methylene chloride	UG/KG	49	89%	100	0	102	114	8 J	18 J	13 J	15 J	25 J
Styrene	UG/KG	0	0%		NA	0	114	6 U	7 U	6 U	6 U	5 U
Tetrachloroethene	UG/KG	2	2%	1,400	0	2	114	6 U	7 U	6 U	6 U	5 U
Toluene	UG/KG	0	0%	1,500	0	0	114	6 U	7 U	6 U	6 U	5 U
Total Xylenes	UG/KG	0	0%	1,200	0	0	114	18 U	22 U	19 U	18 U	16 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	300	0	0	114	6 U	7 U	6 U	6 U	5 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	6 U	7 U	6 U	6 U	5 U
Trichloroethene	UG/KG	77	19%	700	0	22	114	6 U	7 U	6 U	6 U	5 U
Trichlorofluoromethane	UG/KG	0	0%		NA	0	114	6 UJ	7 UJ	6 UJ	6 UJ	5 UJ
Vinyl chloride	UG/KG	0	0%	200	0	0	114	12 U	14 U	12 U	12 U	11 U
Carcinogenic PAHs												
Benzo(a)anthracene	UG/KG	260,000	52%		NA	66	127	300 J	310 J	410 U	410 U	360 U
Benzo(a)pyrene	UG/KG	240,000	49%		NA	62	127	320 J	340 J	410 U	410 U	360 U
Benzo(b)fluoranthene	UG/KG	310,000	51%		NA	65	127	680 J	740 J	410 U	410 U	360 U
Benzo(k)fluoranthene	UG/KG	59,000	24%		NA	30	127	400 UJ	480 UJ	410 U	410 U	360 U
Chrysene	UG/KG	240,000	50%		NA	64	127	360 J	420 J	410 U	410 U	360 U
Dibenz(a,h)anthracene	UG/KG	40,000	35%		NA	44	127	62 J	48 J	410 U	410 U	360 U
Indeno(1,2,3-cd)pyrene	UG/KG	150,000	46%		NA	58	127	230 J	190 J	410 U	410 U	360 U
BTE (calculated)	MG/KG	355	94%	10 [b]	8	127	135	0.51	0.52	0.48	0.48	0.42
Metals												
Aluminum	MG/KG	17,500	100%	76,100	0	114	114	9030	10500 J	9530 J	11700 J	5840 J
Antimony	MG/KG	11.3	18%	31	0	21	114	0.6 U	1 J	0.74 UJ	0.83 UJ	0.64 UJ
Arsenic	MG/KG	19.5	100%	21.5 [d]	0	114	114	4.1	5.1 J	4.4 J	6 J	5.5 J
Barium	MG/KG	248	100%	5,370	0	114	114	76.9	84.8 J	87 J	96.8 J	31.2 J
Beryllium	MG/KG	1	100%	150	0	114	114	0.56	0.55 J	0.55 J	0.6 J	0.3 J
Cadmium	MG/KG	2.5	94%	37	0	107	114	0.12 J	0.28 J	0.24 J	0.24 J	0.19 J
Calcium	MG/KG	216,000	100%		NA	114	114	2820 J	3510 J	2500 J	2430 J	46100 J
Chromium	MG/KG	44.5	100%		NA	113	113	12.8 J	15.2 J	13.3 J	17.6 J	10.1 J
Cobalt	MG/KG	16.8	100%	903	0	114	114	7.1 J	7.8 J	7 J	9.4 J	15.1 J
Copper	MG/KG	131	100%	3,130	0	114	114	12.5	15.6 J	13.7 J	18.8 J	25.1 J
Iron	MG/KG	51,100	100%	38,600 [d]	2	114	114	17600 J	19200 J	17600 J	24300 J	25600 J
Lead	MG/KG	469	100%	400	1	114	114	17 J	21.2 J	10.5 J	15 J	8.9 J
Magnesium	MG/KG	25200 [1]	100%		NA	114	114	2280	2750 J	2380 J	3180 J	6280 J
Manganese	MG/KG	1,540	100%	1,760	0	114	114	367 J	369 J	456 J	595 J	384 J
Mercury	MG/KG	0.327	99%	23	0	113	114	0.043	0.059	0.038	0.041	0.008
Nickel	MG/KG	38.6	100%	1,560	0	114	114	15.8	18.1 J	16.1 J	22.3 J	27.3 J
Potassium	MG/KG	1,750	100%		NA	114	114	871	1180 J	998 J	1270 J	678 J
Selenium	MG/KG	3.4	25%	390	0	28	114	0.72 U	1.6 J	1.3 J	1.9 J	1.4 J

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY							SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID							11EXPRB101	11EXPRB201	11EXPRB202	11EXPRB301	11EXPRB801
MATRIX							SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID							11EXPRB101	11EXPRB201	11EXPRB202	11EXPRB301	11EXPRB801
SAMPLE DEPTH TO TOP OF SAMPLE							0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE							0.2	0.2	0.2	0.2	0.2
SAMPLE DATE							12/6/2006	11/15/2006	11/15/2006	11/15/2006	11/15/2006
QC CODE							SA	SA	SA	SA	SA
STUDY ID							IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Silver	MG/KG	2.2	5%	390	0	6	114	0.06 U	0.19 UJ	0.16 UJ	0.18 UJ	0.14 UJ
Sodium	MG/KG	164	75%		NA	86	114	30.1 U	35.9 UJ	41.9 J	37.2 J	67 J
Thallium	MG/KG	2.1	25%	5.2	0	28	114	0.79 U	1.6 J	1.1 J	2 J	1.4 J
Vanadium	MG/KG	31.6	100%	78.2	0	114	114	16.1 J	18.7 J	16.4 J	21.2 J	11 J
Zinc	MG/KG	591	100%	23,500	0	114	114	59.1 J	75.1 J	58.9 J	85.3 J	72.8 J

Notes:
(1) Maximum value came from sample-duplicate pair averaged value.
(2) The cleanup goal (CUG) values were based on the following criteria:
  a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM)
    HWR-94-4046, Revised January 24, 1994.
  b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
  c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
  d. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
(3) The number of exceedances is not applicable (NA) for parameters without site-specific CUGs.
(4) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXPRB901	11EXPRC001	11EXPRC1001	11EXPRC101	11EXPRC1101
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXPRB901	11EXPRC001	11EXPRC1001	11EXPRC101	11EXPRC1101
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/15/2006	12/15/2006	12/6/2006	12/6/2006	12/6/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds												
1,1,1-Trichloroethane	UG/KG	0	0%	800	0	0	114	6 U		5 U	13 U	5 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	600	0	0	114	6 U		5 U	13 U	5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		NA	0	114	6 UJ		5 U	13 U	5 U
1,1,2-Trichloroethane	UG/KG	0	0%		NA	0	114	6 U		5 U	13 U	5 U
1,1-Dichloroethane	UG/KG	0	0%	200	0	0	114	6 U		5 U	13 U	5 U
1,1-Dichloroethene	UG/KG	0	0%	400	0	0	114	6 U		5 U	13 U	5 U
1,2,3-Trichlorobenzene	UG/KG	0	0%		NA	0	114	6 U		5 U	13 U	5 U
1,2,4-Trichlorobenzene	UG/KG	0	0%	3,400	0	0	114	6 U		5 U	13 U	5 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		NA	0	114	6 U		5 U	13 U	5 U
1,2-Dibromoethane	UG/KG	0	0%		NA	0	114	6 U		5 U	13 U	5 U
1,2-Dichlorobenzene	UG/KG	0	0%	7,900	0	0	114	6 U		5 U	13 U	5 U
1,2-Dichloroethane	UG/KG	0	0%	100	0	0	114	6 U		5 U	13 U	5 U
1,2-Dichloropropane	UG/KG	0	0%		NA	0	114	6 U		5 U	13 U	5 U
1,3-Dichlorobenzene	UG/KG	0	0%	1,600	0	0	114	6 U		5 U	13 U	5 U
1,4-Dichlorobenzene	UG/KG	0	0%	8,500	0	0	114	6 U		5 U	13 U	5 U
Acetone	UG/KG	67	2%	200	0	2	106	29 U		26 U	67	24 U
Benzene	UG/KG	0	0%	60	0	0	114	6 U		5 U	13 U	5 U
Bromochloromethane	UG/KG	0	0%		NA	0	114	6 U		5 U	13 U	5 U
Bromodichloromethane	UG/KG	0	0%		NA	0	114	6 U		5 U	13 U	5 U
Bromoform	UG/KG	0	0%		NA	0	114	6 U		5 U	13 U	5 U
Carbon disulfide	UG/KG	0	0%	2,700	0	0	114	6 U		5 U	13 U	5 U
Carbon tetrachloride	UG/KG	0	0%	600	0	0	114	6 U		5 U	13 U	5 U
Chlorobenzene	UG/KG	0	0%	1,700	0	0	114	6 U		5 U	13 U	5 U
Chlorodibromomethane	UG/KG	0	0%		NA	0	114	6 U		5 U	13 U	5 U
Chloroethane	UG/KG	0	0%	1,900	0	0	114	11 U		10 U	27 U	9 U
Chloroform	UG/KG	0	0%	300	0	0	114	6 U		5 U	13 U	5 U
Cis-1,2-Dichloroethene	UG/KG	2	1%		NA	1	114	6 U		5 U	13 U	5 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	6 U		5 U	13 U	5 U
Cyclohexane	UG/KG	0	0%		NA	0	114	6 U		5 U	13 U	5 U
Dichlorodifluoromethane	UG/KG	2.25 [1]	4%		NA	5	114	6 U		5 U	13 U	5 U
Ethyl benzene	UG/KG	0	0%	5,500	0	0	114	6 U		5 U	13 U	5 U
Isopropylbenzene	UG/KG	0	0%		NA	0	114	6 U		5 U	13 U	5 U
Methyl Acetate	UG/KG	0	0%		NA	0	114	6 U		5 U	13 U	5 U
Methyl Tertbutyl Ether	UG/KG	0	0%		NA	0	114	6 U		5 U	13 U	5 U
Methyl bromide	UG/KG	0	0%		NA	0	89	11 U		10 UJ	27 UJ	9 UJ
Methyl butyl ketone	UG/KG	0	0%		NA	0	114	29 U		26 U	67 U	24 U
Methyl chloride	UG/KG	0	0%		NA	0	114	11 U		10 U	27 U	9 U
Methyl cyclohexane	UG/KG	0	0%		NA	0	114	6 U		5 U	13 U	5 U
Methyl ethyl ketone	UG/KG	0	0%	300	0	0	114	29 U		26 U	67 U	24 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXPRB901	11EXPRC001	11EXPRC1001	11EXPRC101	11EXPRC1101
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXPRB901	11EXPRC001	11EXPRC1001	11EXPRC101	11EXPRC1101
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/15/2006	12/15/2006	12/6/2006	12/6/2006	12/6/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Methyl isobutyl ketone	UG/KG	0	0%	1,000	0	0	114	29 U		26 U	67 U	24 U
Methylene chloride	UG/KG	49	89%	100	0	102	114	13 J		10 J	19 J	15 J
Styrene	UG/KG	0	0%		NA	0	114	6 U		5 U	13 U	5 U
Tetrachloroethene	UG/KG	2	2%	1,400	0	2	114	6 U		5 U	13 U	5 U
Toluene	UG/KG	0	0%	1,500	0	0	114	6 U		5 U	13 U	5 U
Total Xylenes	UG/KG	0	0%	1,200	0	0	114	17 U		15 U	40 U	14 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	300	0	0	114	6 U		5 U	13 U	5 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	6 U		5 U	13 U	5 U
Trichloroethene	UG/KG	77	19%	700	0	22	114	6 U		5 U	13 U	5 U
Trichlorofluoromethane	UG/KG	0	0%		NA	0	114	6 UJ		5 UJ	13 UJ	5 UJ
Vinyl chloride	UG/KG	0	0%	200	0	0	114	11 U		10 U	27 U	9 U
Carcinogenic PAHs												
Benzo(a)anthracene	UG/KG	260,000	52%		NA	66	127	290 J	510 U	760	320 J	990
Benzo(a)pyrene	UG/KG	240,000	49%		NA	62	127	300 J	510 U	540	330 J	730
Benzo(b)fluoranthene	UG/KG	310,000	51%		NA	65	127	520	510 U	1100 J	490 J	1500 J
Benzo(k)fluoranthene	UG/KG	59,000	24%		NA	30	127	160 J	510 U	380 UJ	200 J	380 UJ
Chrysene	UG/KG	240,000	50%		NA	64	127	340 J	510 U	720	360 J	960
Dibenz(a,h)anthracene	UG/KG	40,000	35%		NA	44	127	58 J	510 U	170 J	62 J	230 J
Indeno(1,2,3-cd)pyrene	UG/KG	150,000	46%		NA	58	127	210 J	510 U	450	230 J	600
BTE (calculated)	MG/KG	355	94%	10 [b]	8	127	135	0.47	0.59	0.95	0.50	1.3
Metals												
Aluminum	MG/KG	17,500	100%	76,100	0	114	114	8640 J		12000 J	11500	11200 J
Antimony	MG/KG	11.3	18%	31	0	21	114	0.7 UJ		0.82 U	0.91 U	0.75 U
Arsenic	MG/KG	19.5	100%	21.5 [d]	0	114	114	4.9 J		6	5	5.3
Barium	MG/KG	248	100%	5,370	0	114	114	47.1 J		69.4	97.3	67.7
Beryllium	MG/KG	1	100%	150	0	114	114	0.39 J		0.58	0.74	0.56
Cadmium	MG/KG	2.5	94%	37	0	107	114	0.16 J		0.26	0.21 J	0.24
Calcium	MG/KG	216,000	100%		NA	114	114	8170 J		6990 J	7380 J	7220 J
Chromium	MG/KG	44.5	100%		NA	113	113	14 J		18	16.3 J	16.6
Cobalt	MG/KG	16.8	100%	903	0	114	114	7.8 J		9.8 J	6.6 J	9.4 J
Copper	MG/KG	131	100%	3,130	0	114	114	14.1 J		21.9	14.5	21.1
Iron	MG/KG	51,100	100%	38,600 [d]	2	114	114	18700 J		23900 J	20400 J	22600 J
Lead	MG/KG	469	100%	400	1	114	114	11.4 J		13	16.9 J	11.4
Magnesium	MG/KG	25200 [1]	100%		NA	114	114	4430 J		5080	3090	4770
Manganese	MG/KG	1,540	100%	1,760	0	114	114	400 J		543	373 J	547
Mercury	MG/KG	0.327	99%	23	0	113	114	0.026		0.032 J	0.064	0.028 J
Nickel	MG/KG	38.6	100%	1,560	0	114	114	22 J		28.4 J	19.2	26.2 J
Potassium	MG/KG	1,750	100%		NA	114	114	817 J		1200	1240	1090
Selenium	MG/KG	3.4	25%	390	0	28	114	1.2 J		0.7 UJ	1.1 U	0.64 UJ

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXPRB901	11EXPRC001	11EXPRC1001	11EXPRC101	11EXPRC1101
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXPRB901	11EXPRC001	11EXPRC1001	11EXPRC101	11EXPRC1101
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/15/2006	12/15/2006	12/6/2006	12/6/2006	12/6/2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Silver	MG/KG	2.2	5%	390	0	6	114	0.15 UJ		0.59 U	0.09 U	0.54 U
Sodium	MG/KG	164	75%		NA	86	114	42.6 J		42.8 J	45.4 U	31.6 U
Thallium	MG/KG	2.1	25%	5.2	0	28	114	1.2 J		0.78 U	1.2 U	0.72 U
Vanadium	MG/KG	31.6	100%	78.2	0	114	114	13 J		20.2 J	19.7 J	18.9 J
Zinc	MG/KG	591	100%	23,500	0	114	114	75.5 J		96.9 J	76.2 J	85.4 J

Notes:
(1) Maximum value came from sample-duplicate pair averaged value.
(2) The cleanup goal (CUG) values were based on the following criteria:
  a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046, Revised January 24, 1994.
  b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
  c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
  d. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
(3) The number of exceedances is not applicable (NA) for parameters without site-specific CUGs.
(4) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXPRD001	11EXPRD1101	11EXPRD1102	11EXPRE1101
MATRIX								SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXPRD001	11EXPRD1101	11EXPRD1102	11EXPRE1101
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2
SAMPLE DATE								12/15/2006	12/6/2006	12/6/2006	12/6/2006
QC CODE								SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds											
1,1,1-Trichloroethane	UG/KG	0	0%	800	0	0	114		4 U	5 U	5 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	600	0	0	114		4 U	5 U	5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		NA	0	114		4 U	5 U	5 U
1,1,2-Trichloroethane	UG/KG	0	0%		NA	0	114		4 U	5 U	5 U
1,1-Dichloroethane	UG/KG	0	0%	200	0	0	114		4 U	5 U	5 U
1,1-Dichloroethene	UG/KG	0	0%	400	0	0	114		4 U	5 U	5 U
1,2,3-Trichlorobenzene	UG/KG	0	0%		NA	0	114		4 U	5 U	5 U
1,2,4-Trichlorobenzene	UG/KG	0	0%	3,400	0	0	114		4 U	5 U	5 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		NA	0	114		4 U	5 U	5 U
1,2-Dibromoethane	UG/KG	0	0%		NA	0	114		4 U	5 U	5 U
1,2-Dichlorobenzene	UG/KG	0	0%	7,900	0	0	114		4 U	5 U	5 U
1,2-Dichloroethane	UG/KG	0	0%	100	0	0	114		4 U	5 U	5 U
1,2-Dichloropropane	UG/KG	0	0%		NA	0	114		4 U	5 U	5 U
1,3-Dichlorobenzene	UG/KG	0	0%	1,600	0	0	114		4 U	5 U	5 U
1,4-Dichlorobenzene	UG/KG	0	0%	8,500	0	0	114		4 U	5 U	5 U
Acetone	UG/KG	67	2%	200	0	2	106		22 U	23 U	26 U
Benzene	UG/KG	0	0%	60	0	0	114		4 U	5 U	5 U
Bromochloromethane	UG/KG	0	0%		NA	0	114		4 U	5 U	5 U
Bromodichloromethane	UG/KG	0	0%		NA	0	114		4 U	5 U	5 U
Bromoform	UG/KG	0	0%		NA	0	114		4 U	5 U	5 U
Carbon disulfide	UG/KG	0	0%	2,700	0	0	114		4 U	5 U	5 U
Carbon tetrachloride	UG/KG	0	0%	600	0	0	114		4 U	5 U	5 U
Chlorobenzene	UG/KG	0	0%	1,700	0	0	114		4 U	5 U	5 U
Chlorodibromomethane	UG/KG	0	0%		NA	0	114		4 U	5 U	5 U
Chloroethane	UG/KG	0	0%	1,900	0	0	114		9 U	9 U	10 U
Chloroform	UG/KG	0	0%	300	0	0	114		4 U	5 U	5 U
Cis-1,2-Dichloroethene	UG/KG	2	1%		NA	1	114		4 U	5 U	5 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114		4 U	5 U	5 U
Cyclohexane	UG/KG	0	0%		NA	0	114		4 U	5 U	5 U
Dichlorodifluoromethane	UG/KG	2.25 [1]	4%		NA	5	114		4 U	5 U	5 U
Ethyl benzene	UG/KG	0	0%	5,500	0	0	114		4 U	5 U	5 U
Isopropylbenzene	UG/KG	0	0%		NA	0	114		4 U	5 U	5 U
Methyl Acetate	UG/KG	0	0%		NA	0	114		4 U	5 U	5 U
Methyl Tertbutyl Ether	UG/KG	0	0%		NA	0	114		4 U	5 U	5 U
Methyl bromide	UG/KG	0	0%		NA	0	89		9 UJ	9 UJ	10 UJ
Methyl butyl ketone	UG/KG	0	0%		NA	0	114		22 U	23 U	26 U
Methyl chloride	UG/KG	0	0%		NA	0	114		9 U	9 U	10 U
Methyl cyclohexane	UG/KG	0	0%		NA	0	114		4 U	5 U	5 U
Methyl ethyl ketone	UG/KG	0	0%	300	0	0	114		22 U	23 U	26 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXPRD001	11EXPRD1101	11EXPRD1102	11EXPRE1101
MATRIX								SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXPRD001	11EXPRD1101	11EXPRD1102	11EXPRE1101
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2
SAMPLE DATE								12/15/2006	12/6/2006	12/6/2006	12/6/2006
QC CODE								SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Methyl isobutyl ketone	UG/KG	0	0%	1,000	0	0	114		22 U	23 U	26 U
Methylene chloride	UG/KG	49	89%	100	0	102	114		8 J	9 J	10 J
Styrene	UG/KG	0	0%		NA	0	114		4 U	5 U	5 U
Tetrachloroethene	UG/KG	2	2%	1,400	0	2	114		4 U	5 U	5 U
Toluene	UG/KG	0	0%	1,500	0	0	114		4 U	5 U	5 U
Total Xylenes	UG/KG	0	0%	1,200	0	0	114		13 U	14 U	16 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	300	0	0	114		4 U	5 U	5 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114		4 U	5 U	5 U
Trichloroethene	UG/KG	77	19%	700	0	22	114		4 U	5 U	5 U
Trichlorofluoromethane	UG/KG	0	0%		NA	0	114		4 UJ	5 UJ	5 UJ
Vinyl chloride	UG/KG	0	0%	200	0	0	114		9 U	9 U	10 U
Carcinogenic PAHs											
Benzo(a)anthracene	UG/KG	260,000	52%		NA	66	127	480 U	840	880	1300
Benzo(a)pyrene	UG/KG	240,000	49%		NA	62	127	480 U	620	650	1200
Benzo(b)fluoranthene	UG/KG	310,000	51%		NA	65	127	480 U	1300 J	1300 J	3200 J
Benzo(k)fluoranthene	UG/KG	59,000	24%		NA	30	127	480 U	380 UJ	380 UJ	400 UJ
Chrysene	UG/KG	240,000	50%		NA	64	127	480 U	820	870	1900
Dibenz(a,h)anthracene	UG/KG	40,000	35%		NA	44	127	480 U	190 J	200 J	400
Indeno(1,2,3-cd)pyrene	UG/KG	150,000	46%		NA	58	127	480 U	530	520	1200
BTE (calculated)	MG/KG	355	94%	10 [b]	8	127	135	0.56	1.1	1.1	2.2
Metals											
Aluminum	MG/KG	17,500	100%	76,100	0	114	114		10000 J	11800 J	9330 J
Antimony	MG/KG	11.3	18%	31	0	21	114		0.83 U	0.78 U	0.89 U
Arsenic	MG/KG	19.5	100%	21.5 [d]	0	114	114		5.2	5.8	7
Barium	MG/KG	248	100%	5,370	0	114	114		64.6	67.1	56.5
Beryllium	MG/KG	1	100%	150	0	114	114		0.53	0.58	0.47
Cadmium	MG/KG	2.5	94%	37	0	107	114		0.21 J	0.22 J	0.29
Calcium	MG/KG	216,000	100%		NA	114	114		7420 J	8920 J	31200 J
Chromium	MG/KG	44.5	100%		NA	113	113		15.1	17.7	15.7
Cobalt	MG/KG	16.8	100%	903	0	114	114		8.8 J	10.3 J	9.3 J
Copper	MG/KG	131	100%	3,130	0	114	114		20.4	22.6	26
Iron	MG/KG	51,100	100%	38,600 [d]	2	114	114		20800 J	24600 J	22300 J
Lead	MG/KG	469	100%	400	1	114	114		13.3	11.5	17.2
Magnesium	MG/KG	25200 [1]	100%		NA	114	114		4400	5430	7680
Manganese	MG/KG	1,540	100%	1,760	0	114	114		531	581	493
Mercury	MG/KG	0.327	99%	23	0	113	114		0.02 J	0.028 J	0.02 J
Nickel	MG/KG	38.6	100%	1,560	0	114	114		24.4 J	29.4 J	27.6 J
Potassium	MG/KG	1,750	100%		NA	114	114		1050	1090	1070
Selenium	MG/KG	3.4	25%	390	0	28	114		0.71 UJ	0.67 UJ	0.76 UJ

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXPRD001	11EXPRD1101	11EXPRD1102	11EXPRE1101
MATRIX								SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXPRD001	11EXPRD1101	11EXPRD1102	11EXPRE1101
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2
SAMPLE DATE								12/15/2006	12/6/2006	12/6/2006	12/6/2006
QC CODE								SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Silver	MG/KG	2.2	5%	390	0	6	114		0.6 U	0.56 U	0.19 U
Sodium	MG/KG	164	75%		NA	86	114		44.5 J	47.6 J	76.9 J
Thallium	MG/KG	2.1	25%	5.2	0	28	114		0.79 U	0.75 U	0.85 U
Vanadium	MG/KG	31.6	100%	78.2	0	114	114		17.7 J	19.6 J	15.7 J
Zinc	MG/KG	591	100%	23,500	0	114	114		92.6 J	85.8 J	76.1 J

Notes:
(1) Maximum value came from sample-duplicate pair averaged value.
(2) The cleanup goal (CUG) values were based on the following criteria:
  a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046, Revised January 24, 1994.
  b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
  c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
  d. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
(3) The number of exceedances is not applicable (NA) for parameters without site-specific CUGs.
(4) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXPRE201	11EXPRF1101	11EXPRF201	11EXPRG101	11EXPRG1201	11EXPRG201
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLD002	11EXPRF1101	11EXPRF201	11EXPRG101	11EXPRG1201	11EXPRG202
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/21/2006	12/6/2006	12/6/2006	12/7/2006	12/6/2006	12/6/2006
QC CODE								SA	SA	SA	SA	SA	DU
STUDY ID								IRA	IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/KG	0	0%	800	0	0	114		5 U	10 U	6 U	5 U	8 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	600	0	0	114		5 U	10 U	6 U	5 U	8 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		NA	0	114		5 U	10 U	6 U	5 U	8 U
1,1,2-Trichloroethane	UG/KG	0	0%		NA	0	114		5 U	10 U	6 U	5 U	8 U
1,1-Dichloroethane	UG/KG	0	0%	200	0	0	114		5 U	10 U	6 U	5 U	8 U
1,1-Dichloroethene	UG/KG	0	0%	400	0	0	114		5 U	10 U	6 U	5 U	8 U
1,2,3-Trichlorobenzene	UG/KG	0	0%		NA	0	114		5 U	10 U	6 UJ	5 U	8 U
1,2,4-Trichlorobenzene	UG/KG	0	0%	3,400	0	0	114		5 U	10 U	6 UJ	5 U	8 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		NA	0	114		5 U	10 U	6 U	5 U	8 U
1,2-Dibromoethane	UG/KG	0	0%		NA	0	114		5 U	10 U	6 U	5 U	8 U
1,2-Dichlorobenzene	UG/KG	0	0%	7,900	0	0	114		5 U	10 U	6 U	5 U	8 U
1,2-Dichloroethane	UG/KG	0	0%	100	0	0	114		5 U	10 U	6 U	5 U	8 U
1,2-Dichloropropane	UG/KG	0	0%		NA	0	114		5 U	10 U	6 U	5 U	8 U
1,3-Dichlorobenzene	UG/KG	0	0%	1,600	0	0	114		5 U	10 U	6 U	5 U	8 U
1,4-Dichlorobenzene	UG/KG	0	0%	8,500	0	0	114		5 U	10 U	6 U	5 U	8 U
Acetone	UG/KG	67	2%	200	0	2	106		21 J	51 U	31 U	27 U	41 U
Benzene	UG/KG	0	0%	60	0	0	114		5 U	10 U	6 U	5 U	8 U
Bromochloromethane	UG/KG	0	0%		NA	0	114		5 U	10 U	6 U	5 U	8 U
Bromodichloromethane	UG/KG	0	0%		NA	0	114		5 U	10 U	6 U	5 U	8 U
Bromoform	UG/KG	0	0%		NA	0	114		5 U	10 U	6 U	5 U	8 U
Carbon disulfide	UG/KG	0	0%	2,700	0	0	114		5 U	10 U	6 U	5 U	8 U
Carbon tetrachloride	UG/KG	0	0%	600	0	0	114		5 U	10 U	6 UJ	5 U	8 U
Chlorobenzene	UG/KG	0	0%	1,700	0	0	114		5 U	10 U	6 U	5 U	8 U
Chlorodibromomethane	UG/KG	0	0%		NA	0	114		5 U	10 U	6 U	5 U	8 U
Chloroethane	UG/KG	0	0%	1,900	0	0	114		10 U	20 U	12 U	11 U	16 U
Chloroform	UG/KG	0	0%	300	0	0	114		5 U	10 U	6 U	5 U	8 U
Cis-1,2-Dichloroethene	UG/KG	2	1%		NA	1	114		5 U	10 U	6 U	5 U	8 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114		5 U	10 U	6 U	5 U	8 U
Cyclohexane	UG/KG	0	0%		NA	0	114		5 U	10 U	6 U	5 U	8 U
Dichlorodifluoromethane	UG/KG	2.25 [1]	4%		NA	5	114		5 U	10 U	6 U	5 U	8 U
Ethyl benzene	UG/KG	0	0%	5,500	0	0	114		5 U	10 U	6 U	5 U	8 U
Isopropylbenzene	UG/KG	0	0%		NA	0	114		5 U	10 U	6 U	5 U	8 U
Methyl Acetate	UG/KG	0	0%		NA	0	114		5 U	10 U	6 U	5 U	8 U
Methyl Tertbutyl Ether	UG/KG	0	0%		NA	0	114		5 U	10 U	6 UJ	5 U	8 U
Methyl bromide	UG/KG	0	0%		NA	0	89		10 UJ	20 UJ	12 UJ	11 UJ	16 UJ
Methyl butyl ketone	UG/KG	0	0%		NA	0	114		26 U	51 U	31 U	27 U	41 U
Methyl chloride	UG/KG	0	0%		NA	0	114		10 U	20 U	12 U	11 U	16 U
Methyl cyclohexane	UG/KG	0	0%		NA	0	114		5 U	10 U	6 U	5 U	8 U
Methyl ethyl ketone	UG/KG	0	0%	300	0	0	114		26 U	51 U	31 U	27 U	41 U

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Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXPRE201	11EXPRF1101	11EXPRF201	11EXPRG101	11EXPRG1201	11EXPRG201
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLD002	11EXPRF1101	11EXPRF201	11EXPRG101	11EXPRG1201	11EXPRG202
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/21/2006	12/6/2006	12/6/2006	12/7/2006	12/6/2006	12/6/2006
QC CODE								SA	SA	SA	SA	SA	DU
STUDY ID								IRA	IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Methyl isobutyl ketone	UG/KG	0	0%	1,000	0	0	114		26 U	51 U	31 U	27 U	41 U
Methylene chloride	UG/KG	49	89%	100	0	102	114		12 J	12 J	8 J	10 J	8 J
Styrene	UG/KG	0	0%		NA	0	114		5 U	10 U	6 U	5 U	8 U
Tetrachloroethene	UG/KG	2	2%	1,400	0	2	114		5 U	10 U	6 U	5 U	8 U
Toluene	UG/KG	0	0%	1,500	0	0	114		5 U	10 U	6 U	5 U	8 U
Total Xylenes	UG/KG	0	0%	1,200	0	0	114		16 U	31 U	18 U	16 U	24 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	300	0	0	114		5 U	10 U	6 UJ	5 U	8 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114		5 U	10 U	6 U	5 U	8 U
Trichloroethene	UG/KG	77	19%	700	0	22	114		5 U	10 U	6 U	5 U	8 U
Trichlorofluoromethane	UG/KG	0	0%		NA	0	114		5 UJ	10 UJ	6 U	5 UJ	8 UJ
Vinyl chloride	UG/KG	0	0%	200	0	0	114		10 U	20 U	12 U	11 U	16 U
Carcinogenic PAHs													
Benzo(a)anthracene	UG/KG	260,000	52%		NA	66	127	33 J	470	710	80 J	79 J	5500 J
Benzo(a)pyrene	UG/KG	240,000	49%		NA	62	127	29 J	340 J	650	83 J	50 J	5200 J
Benzo(b)fluoranthene	UG/KG	310,000	51%		NA	65	127	39 J	880 J	1200 J	160 J	140 J	9700 J
Benzo(k)fluoranthene	UG/KG	59,000	24%		NA	30	127	400 U	410 UJ	590 UJ	450 UJ	390 UJ	4800 UJ
Chrysene	UG/KG	240,000	50%		NA	64	127	35 J	530	690	96 J	92 J	5700 J
Dibenz(a,h)anthracene	UG/KG	40,000	35%		NA	44	127	400 U	110 J	110 J	450 U	390 U	940 J
Indeno(1,2,3-cd)pyrene	UG/KG	150,000	46%		NA	58	127	400 U	310 J	400 J	60 J	44 J	3400 J
BTE (calculated)	MG/KG	355	94%	10 [b]	8	127	135	0.26	0.62	1.0	0.34	0.27	8.1
Metals													
Aluminum	MG/KG	17,500	100%	76,100	0	114	114		9510 J	11700	11900 J	10300 J	11600
Antimony	MG/KG	11.3	18%	31	0	21	114		0.76 U	0.89 U	1.1 J	0.78 U	0.71 U
Arsenic	MG/KG	19.5	100%	21.5 [d]	0	114	114		5.4	4.4	7.1	4.5	6.1
Barium	MG/KG	248	100%	5,370	0	114	114		81.7	99.6	125 J	62.8	88
Beryllium	MG/KG	1	100%	150	0	114	114		0.51	0.6	0.69	0.53	0.58
Cadmium	MG/KG	2.5	94%	37	0	107	114		0.25	0.42	0.51	0.12 J	0.46
Calcium	MG/KG	216,000	100%		NA	114	114		26500 J	7160 J	4820 J	17300 J	5080 J
Chromium	MG/KG	44.5	100%		NA	113	113		14.6	16.8 J	17.3 J	15.4	17.7 J
Cobalt	MG/KG	16.8	100%	903	0	114	114		8.7 J	6.8 J	10 J	7.5 J	8.6 J
Copper	MG/KG	131	100%	3,130	0	114	114		19.5	22.6	18.6	20.6	22.7
Iron	MG/KG	51,100	100%	38,600 [d]	2	114	114		20600 J	20100 J	23500 J	20500 J	22700 J
Lead	MG/KG	469	100%	400	1	114	114		16.9	22 J	32.6 J	11.8	26.2 J
Magnesium	MG/KG	25200 [1]	100%		NA	114	114		9360	3480	3600 J	7180	4160
Manganese	MG/KG	1,540	100%	1,760	0	114	114		715	338 J	666 J	280	376 J
Mercury	MG/KG	0.327	99%	23	0	113	114		0.016 J	0.067	0.046 J	0.029 J	0.029
Nickel	MG/KG	38.6	100%	1,560	0	114	114		26.2 J	20.9	21.7 J	23.6 J	24.3
Potassium	MG/KG	1,750	100%		NA	114	114		932	1600	1310 J	891	1180
Selenium	MG/KG	3.4	25%	390	0	28	114		0.65 UJ	1.1 U	0.78 UJ	0.67 UJ	0.85 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXPRE201	11EXPRF1101	11EXPRF201	11EXPRG101	11EXPRG1201	11EXPRG201
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLD002	11EXPRF1101	11EXPRF201	11EXPRG101	11EXPRG1201	11EXPRG202
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/21/2006	12/6/2006	12/6/2006	12/7/2006	12/6/2006	12/6/2006
QC CODE								SA	SA	SA	SA	SA	DU
STUDY ID								IRA	IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Silver	MG/KG	2.2	5%	390	0	6	114		0.55 U	0.17 U	0.2 U	0.57 U	0.14 U
Sodium	MG/KG	164	75%		NA	86	114		66.9 J	44.4 U	71.2 J	49.9 J	48.8 J
Thallium	MG/KG	2.1	25%	5.2	0	28	114		0.73 U	1.2 U	0.88 U	0.75 U	0.93 U
Vanadium	MG/KG	31.6	100%	78.2	0	114	114		15.9 J	20.2 J	22.8 J	17.1 J	21.3 J
Zinc	MG/KG	591	100%	23,500	0	114	114		81.9 J	91.7 J	92.9 J	73.8 J	94.2 J

Notes:
(1) Maximum value came from sample-duplicate pair averaged value.
(2) The cleanup goal (CUG) values were based on the following criteria:
  a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046, Revised January 24, 1994.
  b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
  c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
  d. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
(3) The number of exceedances is not applicable (NA) for parameters without site-specific CUGs.
(4) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXPRG201	11EXPRH1201	11EXPRH201	11EXPRH301	11EXPRI1201	11EXPRI401
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXPRG201	11EXPRH1201	11EXPRH201	11EXPRH301	11EXPRI1201	11EXPRI401
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/6/2006	12/6/2006	12/7/2006	12/6/2006	12/6/2006	12/6/2006
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/KG	0	0%	800	0	0	114	9 U	7 U	9 U	6 U	5 U	10 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	600	0	0	114	9 U	7 U	9 U	6 U	5 U	10 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		NA	0	114	9 U	7 U	9 U	6 U	5 U	10 U
1,1,2-Trichloroethane	UG/KG	0	0%		NA	0	114	9 U	7 U	9 U	6 U	5 U	10 U
1,1-Dichloroethane	UG/KG	0	0%	200	0	0	114	9 U	7 U	9 U	6 U	5 U	10 U
1,1-Dichloroethene	UG/KG	0	0%	400	0	0	114	9 U	7 U	9 U	6 U	5 U	10 U
1,2,3-Trichlorobenzene	UG/KG	0	0%		NA	0	114	9 U	7 U	9 UJ	6 U	5 U	10 U
1,2,4-Trichlorobenzene	UG/KG	0	0%	3,400	0	0	114	9 U	7 U	9 UJ	6 U	5 U	10 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		NA	0	114	9 U	7 U	9 U	6 U	5 U	10 U
1,2-Dibromoethane	UG/KG	0	0%		NA	0	114	9 U	7 U	9 U	6 U	5 U	10 U
1,2-Dichlorobenzene	UG/KG	0	0%	7,900	0	0	114	9 U	7 U	9 U	6 U	5 U	10 U
1,2-Dichloroethane	UG/KG	0	0%	100	0	0	114	9 U	7 U	9 U	6 U	5 U	10 U
1,2-Dichloropropane	UG/KG	0	0%		NA	0	114	9 U	7 U	9 U	6 U	5 U	10 U
1,3-Dichlorobenzene	UG/KG	0	0%	1,600	0	0	114	9 U	7 U	9 U	6 U	5 U	10 U
1,4-Dichlorobenzene	UG/KG	0	0%	8,500	0	0	114	9 U	7 U	9 U	6 U	5 U	10 U
Acetone	UG/KG	67	2%	200	0	2	106	46 UJ	33 U	46 U	30 U	23 U	48 UJ
Benzene	UG/KG	0	0%	60	0	0	114	9 U	7 U	9 U	6 U	5 U	10 U
Bromochloromethane	UG/KG	0	0%		NA	0	114	9 U	7 U	9 U	6 U	5 U	10 U
Bromodichloromethane	UG/KG	0	0%		NA	0	114	9 U	7 U	9 U	6 U	5 U	10 U
Bromoform	UG/KG	0	0%		NA	0	114	9 U	7 U	9 U	6 U	5 U	10 U
Carbon disulfide	UG/KG	0	0%	2,700	0	0	114	9 U	7 U	9 U	6 U	5 U	10 U
Carbon tetrachloride	UG/KG	0	0%	600	0	0	114	9 UJ	7 U	9 UJ	6 U	5 U	10 UJ
Chlorobenzene	UG/KG	0	0%	1,700	0	0	114	9 U	7 U	9 U	6 U	5 U	10 U
Chlorodibromomethane	UG/KG	0	0%		NA	0	114	9 U	7 U	9 U	6 U	5 U	10 U
Chloroethane	UG/KG	0	0%	1,900	0	0	114	18 U	13 U	18 U	12 U	9 U	19 U
Chloroform	UG/KG	0	0%	300	0	0	114	9 U	7 U	9 U	6 U	5 U	10 U
Cis-1,2-Dichloroethene	UG/KG	2	1%		NA	1	114	9 U	7 U	9 U	6 U	5 U	10 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	9 U	7 U	9 U	6 U	5 U	10 U
Cyclohexane	UG/KG	0	0%		NA	0	114	9 U	7 U	9 U	6 U	5 U	10 U
Dichlorodifluoromethane	UG/KG	2.25 [1]	4%		NA	5	114	9 U	7 U	9 U	6 U	5 U	10 U
Ethyl benzene	UG/KG	0	0%	5,500	0	0	114	9 U	7 U	9 U	6 U	5 U	10 U
Isopropylbenzene	UG/KG	0	0%		NA	0	114	9 U	7 U	9 U	6 U	5 U	10 U
Methyl Acetate	UG/KG	0	0%		NA	0	114	9 UJ	7 U	9 U	6 U	5 U	10 UJ
Methyl Tertbutyl Ether	UG/KG	0	0%		NA	0	114	9 UJ	7 U	9 UJ	6 U	5 U	10 UJ
Methyl bromide	UG/KG	0	0%		NA	0	89	18 UR	13 UJ	18 UJ	12 UJ	9 UJ	19 UR
Methyl butyl ketone	UG/KG	0	0%		NA	0	114	46 U	33 U	46 U	30 U	23 U	48 U
Methyl chloride	UG/KG	0	0%		NA	0	114	18 U	13 U	18 U	12 U	9 U	19 U
Methyl cyclohexane	UG/KG	0	0%		NA	0	114	9 U	7 U	9 U	6 U	5 U	10 U
Methyl ethyl ketone	UG/KG	0	0%	300	0	0	114	46 U	33 U	46 U	30 U	23 U	48 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXPRG201	11EXPRH1201	11EXPRH201	11EXPRH301	11EXPRI1201	11EXPRI401
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXPRG201	11EXPRH1201	11EXPRH201	11EXPRH301	11EXPRI1201	11EXPRI401
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/6/2006	12/6/2006	12/7/2006	12/6/2006	12/6/2006	12/6/2006
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Methyl isobutyl ketone	UG/KG	0	0%	1,000	0	0	114	46 U	33 U	46 U	30 U	23 U	48 U
Methylene chloride	UG/KG	49	89%	100	0	102	114	10 J	18 J	13 J	8 J	17 J	14 J
Styrene	UG/KG	0	0%		NA	0	114	9 U	7 U	9 U	6 U	5 U	10 U
Tetrachloroethene	UG/KG	2	2%	1,400	0	2	114	9 U	7 U	9 U	6 U	5 U	10 U
Toluene	UG/KG	0	0%	1,500	0	0	114	9 U	7 U	9 U	6 U	5 U	10 U
Total Xylenes	UG/KG	0	0%	1,200	0	0	114	28 U	20 U	27 U	18 U	14 U	29 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	300	0	0	114	9 UJ	7 U	9 UJ	6 U	5 U	10 UJ
Trans-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	9 U	7 U	9 U	6 U	5 U	10 U
Trichloroethene	UG/KG	77	19%	700	0	22	114	9 U	7 U	9 U	6 U	5 U	10 U
Trichlorofluoromethane	UG/KG	0	0%		NA	0	114	9 U	7 UJ	9 U	6 UJ	5 UJ	10 U
Vinyl chloride	UG/KG	0	0%	200	0	0	114	18 U	13 U	18 U	12 U	9 U	19 U
Carcinogenic PAHs													
Benzo(a)anthracene	UG/KG	260,000	52%		NA	66	127	1000 J	530	1500	220 J	380 U	2000 J
Benzo(a)pyrene	UG/KG	240,000	49%		NA	62	127	880 J	350 J	1300	210 J	380 U	1800 J
Benzo(b)fluoranthene	UG/KG	310,000	51%		NA	65	127	1400 J	740 J	2300 J	300 J	380 U	2600 J
Benzo(k)fluoranthene	UG/KG	59,000	24%		NA	30	127	340 J	430 UJ	500 UJ	120 J	380 U	1100 J
Chrysene	UG/KG	240,000	50%		NA	64	127	920 J	520	1600	230 J	380 U	2100 J
Dibenz(a,h)anthracene	UG/KG	40,000	35%		NA	44	127	160 J	91 J	260 J	44 J	380 U	340 J
Indeno(1,2,3-cd)pyrene	UG/KG	150,000	46%		NA	58	127	550 J	250 J	810	140 J	380 U	1200 J
BTE (calculated)	MG/KG	355	94%	10 [b]	8	127	135	1.3	0.60	2.0	0.32	0.44	2.8
Metals													
Aluminum	MG/KG	17,500	100%	76,100	0	114	114	11000	9360 J	11000 J	11500	10100 J	12400
Antimony	MG/KG	11.3	18%	31	0	21	114	0.72 U	0.87 U	1.1 UJ	0.69 U	0.75 U	1.3 J
Arsenic	MG/KG	19.5	100%	21.5 [d]	0	114	114	5.2	4.7	4.8	4.9	5.6	4.7
Barium	MG/KG	248	100%	5,370	0	114	114	87.9	61	102 J	96	60.6	109
Beryllium	MG/KG	1	100%	150	0	114	114	0.56	0.49	0.57	0.57	0.58	0.61
Cadmium	MG/KG	2.5	94%	37	0	107	114	0.4	0.19 J	0.5	0.41	0.2 J	0.77
Calcium	MG/KG	216,000	100%		NA	114	114	4820 J	9120 J	7860 J	4570 J	14900 J	8070 J
Chromium	MG/KG	44.5	100%		NA	113	113	16.4 J	14.2	16.8 J	16 J	16.6	20.2 J
Cobalt	MG/KG	16.8	100%	903	0	114	114	7.6 J	7.4 J	7 J	6.8 J	11.1 J	7.5 J
Copper	MG/KG	131	100%	3,130	0	114	114	22	19.5	22.4	19.3	20.2	32.1
Iron	MG/KG	51,100	100%	38,600 [d]	2	114	114	19900 J	18700 J	19000 J	19600 J	24500 J	20900 J
Lead	MG/KG	469	100%	400	1	114	114	25.3 J	26.4	36.2 J	15.7 J	16.9	42.7 J
Magnesium	MG/KG	25200 [1]	100%		NA	114	114	3580	5070	3480 J	2940	6070	3910
Manganese	MG/KG	1,540	100%	1,760	0	114	114	360 J	299	875 J	279 J	524	334 J
Mercury	MG/KG	0.327	99%	23	0	113	114	0.059	0.03 J	0.061 J	0.046	0.02 J	0.09
Nickel	MG/KG	38.6	100%	1,560	0	114	114	21.5	21.5 J	20.2 J	19	29.7 J	23.9
Potassium	MG/KG	1,750	100%		NA	114	114	1170	998	1430 J	1200	933	1550
Selenium	MG/KG	3.4	25%	390	0	28	114	0.86 U	0.74 UJ	0.97 UJ	0.83 U	0.64 UJ	1.1 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXPRG201	11EXPRH1201	11EXPRH201	11EXPRH301	11EXPRI1201	11EXPRI401
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXPRG201	11EXPRH1201	11EXPRH201	11EXPRH301	11EXPRI1201	11EXPRI401
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/6/2006	12/6/2006	12/7/2006	12/6/2006	12/6/2006	12/6/2006
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Silver	MG/KG	2.2	5%	390	0	6	114	0.7 U	0.63 U	0.25 U	0.14 U	0.54 U	0.88 U
Sodium	MG/KG	164	75%		NA	86	114	60.9 J	36.4 U	51.1 J	41.1 J	42.8 J	54.5 J
Thallium	MG/KG	2.1	25%	5.2	0	28	114	0.94 U	0.83 U	1.1 U	0.91 U	0.72 U	1.2 U
Vanadium	MG/KG	31.6	100%	78.2	0	114	114	19.7 J	15.8 J	19.4 J	22.1 J	16.1 J	22.3 J
Zinc	MG/KG	591	100%	23,500	0	114	114	84.4 J	74.2 J	103 J	73.3 J	63.9 J	161 J

Notes:
(1) Maximum value came from sample-duplicate pair averaged value.
(2) The cleanup goal (CUG) values were based on the following criteria:
  a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046, Revised January 24, 1994.
  b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
  c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
  d. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
(3) The number of exceedances is not applicable (NA) for parameters without site-specific CUGs.
(4) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXPRI402	11EXPRI501	11EXPRI601	11EXPRI701	11EXPRI801	11EXPRJ1001
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXPRI402	11EXPRI501	11EXPRI601	11EXPRI701	11EXPRI801	11EXPRJ1001
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								1/5/2007	12/6/2006	12/6/2006	12/6/2006	12/6/2006	12/6/2006
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/KG	0	0%	800	0	0	114		5 U	6 U	5 U	5 U	4 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	600	0	0	114		5 U	6 U	5 U	5 U	4 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		NA	0	114		5 U	6 U	5 U	5 U	4 U
1,1,2-Trichloroethane	UG/KG	0	0%		NA	0	114		5 U	6 U	5 U	5 U	4 U
1,1-Dichloroethane	UG/KG	0	0%	200	0	0	114		5 U	6 U	5 U	5 U	4 U
1,1-Dichloroethene	UG/KG	0	0%	400	0	0	114		5 U	6 U	5 U	5 U	4 U
1,2,3-Trichlorobenzene	UG/KG	0	0%		NA	0	114		5 U	6 U	5 U	5 U	4 U
1,2,4-Trichlorobenzene	UG/KG	0	0%	3,400	0	0	114		5 U	6 U	5 U	5 U	4 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		NA	0	114		5 U	6 U	5 U	5 U	4 U
1,2-Dibromoethane	UG/KG	0	0%		NA	0	114		5 U	6 U	5 U	5 U	4 U
1,2-Dichlorobenzene	UG/KG	0	0%	7,900	0	0	114		5 U	6 U	5 U	5 U	4 U
1,2-Dichloroethane	UG/KG	0	0%	100	0	0	114		5 U	6 U	5 U	5 U	4 U
1,2-Dichloropropane	UG/KG	0	0%		NA	0	114		5 U	6 U	5 U	5 U	4 U
1,3-Dichlorobenzene	UG/KG	0	0%	1,600	0	0	114		5 U	6 U	5 U	5 U	4 U
1,4-Dichlorobenzene	UG/KG	0	0%	8,500	0	0	114		5 U	6 U	5 U	5 U	4 U
Acetone	UG/KG	67	2%	200	0	2	106		25 UJ	28 UJ	26 UJ	27 UJ	21 UJ
Benzene	UG/KG	0	0%	60	0	0	114		5 U	6 U	5 U	5 U	4 U
Bromochloromethane	UG/KG	0	0%		NA	0	114		5 U	6 U	5 U	5 U	4 U
Bromodichloromethane	UG/KG	0	0%		NA	0	114		5 U	6 U	5 U	5 U	4 U
Bromoform	UG/KG	0	0%		NA	0	114		5 U	6 U	5 U	5 U	4 U
Carbon disulfide	UG/KG	0	0%	2,700	0	0	114		5 U	6 U	5 U	5 U	4 U
Carbon tetrachloride	UG/KG	0	0%	600	0	0	114		5 UJ	6 UJ	5 UJ	5 UJ	4 UJ
Chlorobenzene	UG/KG	0	0%	1,700	0	0	114		5 U	6 U	5 U	5 U	4 U
Chlorodibromomethane	UG/KG	0	0%		NA	0	114		5 U	6 U	5 U	5 U	4 U
Chloroethane	UG/KG	0	0%	1,900	0	0	114		10 U	11 U	10 U	11 U	8 U
Chloroform	UG/KG	0	0%	300	0	0	114		5 U	6 U	5 U	5 U	4 U
Cis-1,2-Dichloroethene	UG/KG	2	1%		NA	1	114		5 U	6 U	5 U	5 U	4 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114		5 U	6 U	5 U	5 U	4 U
Cyclohexane	UG/KG	0	0%		NA	0	114		5 U	6 U	5 U	5 U	4 U
Dichlorodifluoromethane	UG/KG	2.25 [1]	4%		NA	5	114		5 U	6 U	5 U	5 U	4 U
Ethyl benzene	UG/KG	0	0%	5,500	0	0	114		5 U	6 U	5 U	5 U	4 U
Isopropylbenzene	UG/KG	0	0%		NA	0	114		5 U	6 U	5 U	5 U	4 U
Methyl Acetate	UG/KG	0	0%		NA	0	114		5 UJ	6 UJ	5 UJ	5 UJ	4 UJ
Methyl Tertbutyl Ether	UG/KG	0	0%		NA	0	114		5 UJ	6 UJ	5 UJ	5 UJ	4 UJ
Methyl bromide	UG/KG	0	0%		NA	0	89		10 UR	11 UR	10 UR	11 UR	8 UR
Methyl butyl ketone	UG/KG	0	0%		NA	0	114		25 U	28 U	26 U	27 U	21 U
Methyl chloride	UG/KG	0	0%		NA	0	114		10 U	11 U	10 U	11 U	8 U
Methyl cyclohexane	UG/KG	0	0%		NA	0	114		5 U	6 U	5 U	5 U	4 U
Methyl ethyl ketone	UG/KG	0	0%	300	0	0	114		25 U	28 U	26 U	27 U	21 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXPRI402	11EXPRI501	11EXPRI601	11EXPRI701	11EXPRI801	11EXPRJ1001
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXPRI402	11EXPRI501	11EXPRI601	11EXPRI701	11EXPRI801	11EXPRJ1001
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								1/5/2007	12/6/2006	12/6/2006	12/6/2006	12/6/2006	12/6/2006
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Methyl isobutyl ketone	UG/KG	0	0%	1,000	0	0	114		25 U	28 U	26 U	27 U	21 U
Methylene chloride	UG/KG	49	89%	100	0	102	114		12 J	9 J	7 J	6 J	5 J
Styrene	UG/KG	0	0%		NA	0	114		5 U	6 U	5 U	5 U	4 U
Tetrachloroethene	UG/KG	2	2%	1,400	0	2	114		5 U	6 U	5 U	5 U	4 U
Toluene	UG/KG	0	0%	1,500	0	0	114		5 U	6 U	5 U	5 U	4 U
Total Xylenes	UG/KG	0	0%	1,200	0	0	114		15 U	17 U	16 U	16 U	13 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	300	0	0	114		5 UJ	6 UJ	5 UJ	5 UJ	4 UJ
Trans-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114		5 U	6 U	5 U	5 U	4 U
Trichloroethene	UG/KG	77	19%	700	0	22	114		5 U	6 U	5 U	5 U	4 U
Trichlorofluoromethane	UG/KG	0	0%		NA	0	114		5 U	6 U	5 U	5 U	4 U
Vinyl chloride	UG/KG	0	0%	200	0	0	114		10 U	11 U	10 U	11 U	8 U
Carcinogenic PAHs													
Benzo(a)anthracene	UG/KG	260,000	52%		NA	66	127	340	680	31 J	72 J	75 J	400 J
Benzo(a)pyrene	UG/KG	240,000	49%		NA	62	127	280	630	22 J	61 J	59 J	380 J
Benzo(b)fluoranthene	UG/KG	310,000	51%		NA	65	127	510 J	930	32 J	84 J	70 J	360 J
Benzo(k)fluoranthene	UG/KG	59,000	24%		NA	30	127	190 UJ	240 J	420 U	27 J	37 J	120 J
Chrysene	UG/KG	240,000	50%		NA	64	127	300	630	24 J	60 J	57 J	470 J
Dibenz(a,h)anthracene	UG/KG	40,000	35%		NA	44	127	46 J	110 J	420 U	13 J	12 J	91 J
Indeno(1,2,3-cd)pyrene	UG/KG	150,000	46%		NA	58	127	160 J	400	16 J	46 J	39 J	220 J
BTE (calculated)	MG/KG	355	94%	10 [b]	8	127	135	0.43	0.95	0.24	0.10	0.09	0.57
Metals													
Aluminum	MG/KG	17,500	100%	76,100	0	114	114		11200	12000	12600	12000	7750
Antimony	MG/KG	11.3	18%	31	0	21	114		0.64 U	0.66 U	0.63 U	3.2 J	0.59 U
Arsenic	MG/KG	19.5	100%	21.5 [d]	0	114	114		5.2	6	5.6	5.5	3.9
Barium	MG/KG	248	100%	5,370	0	114	114		88.7	86.1	111	119	46.5
Beryllium	MG/KG	1	100%	150	0	114	114		0.58	0.62	0.68	0.66	0.41
Cadmium	MG/KG	2.5	94%	37	0	107	114		0.42	0.35	0.4	0.49	0.22 J
Calcium	MG/KG	216,000	100%		NA	114	114		24400 J	15500 J	3270 J	3830 J	40300 J
Chromium	MG/KG	44.5	100%		NA	113	113		16.6 J	17.3 J	18.1 J	19.9 J	11.6 J
Cobalt	MG/KG	16.8	100%	903	0	114	114		8.3 J	8.6 J	10.7 J	9.2 J	6.9 J
Copper	MG/KG	131	100%	3,130	0	114	114		17.1	17.8	16.3	25.6	19.3
Iron	MG/KG	51,100	100%	38,600 [d]	2	114	114		22100 J	23900 J	25500 J	24100 J	16400 J
Lead	MG/KG	469	100%	400	1	114	114		15.2 J	13.5 J	15.2 J	101 J	14 J
Magnesium	MG/KG	25200 [1]	100%		NA	114	114		7570	4780	3430	3310	11200
Manganese	MG/KG	1,540	100%	1,760	0	114	114		728 J	455 J	844 J	785 J	393 J
Mercury	MG/KG	0.327	99%	23	0	113	114		0.017 J	0.035	0.041	0.051	0.053
Nickel	MG/KG	38.6	100%	1,560	0	114	114		24	23.7	24	22.7	19.1
Potassium	MG/KG	1,750	100%		NA	114	114		1180	1290	1050	1160	955
Selenium	MG/KG	3.4	25%	390	0	28	114		0.77 U	0.79 U	0.76 U	0.77 U	0.7 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXPRI402	11EXPRI501	11EXPRI601	11EXPRI701	11EXPRI801	11EXPRJ1001
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXPRI402	11EXPRI501	11EXPRI601	11EXPRI701	11EXPRI801	11EXPRJ1001
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								1/5/2007	12/6/2006	12/6/2006	12/6/2006	12/6/2006	12/6/2006
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Silver	MG/KG	2.2	5%	390	0	6	114		0.13 U	0.13 U	0.62 U	0.63 U	0.11 U
Sodium	MG/KG	164	75%		NA	86	114		63 J	64.8 J	43.2 J	32.1 U	82.9 J
Thallium	MG/KG	2.1	25%	5.2	0	28	114		0.85 U	0.86 U	0.83 U	0.84 U	0.77 U
Vanadium	MG/KG	31.6	100%	78.2	0	114	114		18.9 J	19.8 J	21.2 J	20.5 J	14.1 J
Zinc	MG/KG	591	100%	23,500	0	114	114		98 J	103 J	86.9 J	149 J	82.7 J

Notes:
(1) Maximum value came from sample-duplicate pair averaged value.
(2) The cleanup goal (CUG) values were based on the following criteria:
  a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046, Revised January 24, 1994.
  b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
  c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
  d. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
(3) The number of exceedances is not applicable (NA) for parameters without site-specific CUGs.
(4) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXPRJ1101	11EXPRJ1201	11EXPRJ1201	11EXPRJ901	11EXFLB501	11EXFLB701
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXPRJ1101	11EXPRJ1202	11EXPRJ1201	11EXPRJ901	11EXFLB501	11EXFLB701
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/6/2006	12/6/2006	12/6/2006	12/6/2006	11/6/2006	11/6/2006
QC CODE								SA	DU	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/KG	0	0%	800	0	0	114	5 U	5 U	5 U	5 U	6 U	5 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	600	0	0	114	5 U	5 U	5 U	5 U	6 U	5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	6 U	5 U
1,1,2-Trichloroethane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	6 U	5 U
1,1-Dichloroethane	UG/KG	0	0%	200	0	0	114	5 U	5 U	5 U	5 U	6 U	5 U
1,1-Dichloroethene	UG/KG	0	0%	400	0	0	114	5 U	5 U	5 U	5 U	6 U	5 U
1,2,3-Trichlorobenzene	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	6 U	5 U
1,2,4-Trichlorobenzene	UG/KG	0	0%	3,400	0	0	114	5 U	5 U	5 U	5 U	6 U	5 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	6 U	5 U
1,2-Dibromoethane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	6 U	5 U
1,2-Dichlorobenzene	UG/KG	0	0%	7,900	0	0	114	5 U	5 U	5 U	5 U	6 U	5 U
1,2-Dichloroethane	UG/KG	0	0%	100	0	0	114	5 U	5 U	5 U	5 U	6 U	5 U
1,2-Dichloropropane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	6 U	5 U
1,3-Dichlorobenzene	UG/KG	0	0%	1,600	0	0	114	5 U	5 U	5 U	5 U	6 U	5 U
1,4-Dichlorobenzene	UG/KG	0	0%	8,500	0	0	114	5 U	5 U	5 U	5 U	6 U	5 U
Acetone	UG/KG	67	2%	200	0	2	106	26 UJ	25 U	23 U	26 UJ	28 UJ	26 UJ
Benzene	UG/KG	0	0%	60	0	0	114	5 U	5 U	5 U	5 U	6 U	5 U
Bromochloromethane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	6 U	5 U
Bromodichloromethane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	6 U	5 U
Bromoform	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	6 U	5 U
Carbon disulfide	UG/KG	0	0%	2,700	0	0	114	5 U	5 U	5 U	5 U	6 U	5 U
Carbon tetrachloride	UG/KG	0	0%	600	0	0	114	5 UJ	5 U	5 U	5 UJ	6 U	5 U
Chlorobenzene	UG/KG	0	0%	1,700	0	0	114	5 U	5 U	5 U	5 U	6 U	5 U
Chlorodibromomethane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	6 U	5 U
Chloroethane	UG/KG	0	0%	1,900	0	0	114	10 U	10 U	9 U	10 U	11 U	10 U
Chloroform	UG/KG	0	0%	300	0	0	114	5 U	5 U	5 U	5 U	6 U	5 U
Cis-1,2-Dichloroethene	UG/KG	2	1%		NA	1	114	5 U	5 U	5 U	5 U	6 U	5 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	6 U	5 U
Cyclohexane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	6 U	5 U
Dichlorodifluoromethane	UG/KG	2.25 [1]	4%		NA	5	114	5 U	5 U	5 U	5 U	6 U	5 U
Ethyl benzene	UG/KG	0	0%	5,500	0	0	114	5 U	5 U	5 U	5 U	6 U	5 U
Isopropylbenzene	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	6 U	5 U
Methyl Acetate	UG/KG	0	0%		NA	0	114	5 UJ	5 U	5 U	5 UJ	6 UJ	5 UJ
Methyl Tertbutyl Ether	UG/KG	0	0%		NA	0	114	5 UJ	5 U	5 U	5 UJ	6 UJ	5 UJ
Methyl bromide	UG/KG	0	0%		NA	0	89	10 UR	10 UJ	9 UJ	10 UR	11 UJ	10 UJ
Methyl butyl ketone	UG/KG	0	0%		NA	0	114	26 U	25 U	23 U	26 U	28 U	26 U
Methyl chloride	UG/KG	0	0%		NA	0	114	10 U	10 U	9 U	10 U	11 U	10 U
Methyl cyclohexane	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	6 U	5 U
Methyl ethyl ketone	UG/KG	0	0%	300	0	0	114	26 U	25 U	23 U	26 U	28 U	26 U

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXPRJ1101	11EXPRJ1201	11EXPRJ1201	11EXPRJ901	11EXFLB501	11EXFLB701
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXPRJ1101	11EXPRJ1202	11EXPRJ1201	11EXPRJ901	11EXFLB501	11EXFLB701
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/6/2006	12/6/2006	12/6/2006	12/6/2006	11/6/2006	11/6/2006
QC CODE								SA	DU	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Methyl isobutyl ketone	UG/KG	0	0%	1,000	0	0	114	26 U	25 U	23 U	26 U	28 U	26 U
Methylene chloride	UG/KG	49	89%	100	0	102	114	9 J	9 J	10 J	5 J	12 U	10 U
Styrene	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	6 U	5 U
Tetrachloroethene	UG/KG	2	2%	1,400	0	2	114	5 U	5 U	5 U	5 U	6 U	5 U
Toluene	UG/KG	0	0%	1,500	0	0	114	5 U	5 U	5 U	5 U	6 U	5 U
Total Xylenes	UG/KG	0	0%	1,200	0	0	114	16 U	15 U	14 U	15 U	17 U	16 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	300	0	0	114	5 UJ	5 U	5 U	5 UJ	6 UJ	5 UJ
Trans-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	5 U	5 U	5 U	5 U	6 U	5 U
Trichloroethene	UG/KG	77	19%	700	0	22	114	5 U	5 U	5 U	5 U	3 J	5 U
Trichlorofluoromethane	UG/KG	0	0%		NA	0	114	5 U	5 UJ	5 UJ	5 U	6 U	5 U
Vinyl chloride	UG/KG	0	0%	200	0	0	114	10 U	10 U	9 U	10 U	11 U	10 U
Carcinogenic PAHs													
Benzo(a)anthracene	UG/KG	260,000	52%		NA	66	127	190 J	59 J	27 J	26 J	7800	8400
Benzo(a)pyrene	UG/KG	240,000	49%		NA	62	127	190 J	53 J	26 J	20 J	7300	8000
Benzo(b)fluoranthene	UG/KG	310,000	51%		NA	65	127	180 J	98 J	28 J	29 J	9800	11000
Benzo(k)fluoranthene	UG/KG	59,000	24%		NA	30	127	55 J	370 UJ	20 J	8 J	2900	3400
Chrysene	UG/KG	240,000	50%		NA	64	127	260 J	61 J	32 J	16 J	7200	8200
Dibenz(a,h)anthracene	UG/KG	40,000	35%		NA	44	127	42 J	370 U	370 U	400 U	1300 J	1500 J
Indeno(1,2,3-cd)pyrene	UG/KG	150,000	46%		NA	58	127	120 J	44 J	22 J	17 J	5000 J	5900 J
BTE (calculated)	MG/KG	355	94%	10 [b]	8	127	135	0.28	0.26	0.22	0.23	**11**	**12**
Metals													
Aluminum	MG/KG	17,500	100%	76,100	0	114	114	12500	6440 J	6450 J	11600	8180 J	10100 J
Antimony	MG/KG	11.3	18%	31	0	21	114	0.6 U	3.4 J	0.72 U	0.68 J	0.87 J	0.82 UJ
Arsenic	MG/KG	19.5	100%	21.5 [d]	0	114	114	5.1	4.1	3.7	6.1	5 J	5 J
Barium	MG/KG	248	100%	5,370	0	114	114	62.4	35.2	34.3	80	107 J	81.7 J
Beryllium	MG/KG	1	100%	150	0	114	114	0.63	0.34	0.35	0.61	0.49 J	0.55 J
Cadmium	MG/KG	2.5	94%	37	0	107	114	0.36	0.16 J	0.27	0.41	0.62 J	0.5 J
Calcium	MG/KG	216,000	100%		NA	114	114	29500 J	32600 J	53200 J	5680 J	34000 J	2570 J
Chromium	MG/KG	44.5	100%		NA	113	113	19 J	10.3	10.7	17.2 J	14.2 J	16.1 J
Cobalt	MG/KG	16.8	100%	903	0	114	114	11.1 J	6.9 J	6 J	9.9 J	7.4 J	9 J
Copper	MG/KG	131	100%	3,130	0	114	114	23.8	17.8	17.3	24.7	33.2 J	20.4 J
Iron	MG/KG	51,100	100%	38,600 [d]	2	114	114	25000 J	14400 J	14300 J	24100 J	18600 J	21300 J
Lead	MG/KG	469	100%	400	1	114	114	20.8 J	64 J	16.4 J	93.3 J	38.5 J	47.5 J
Magnesium	MG/KG	25200 [1]	100%		NA	114	114	7900	8940 J	13700 J	4880	2730 J	3290 J
Manganese	MG/KG	1,540	100%	1,760	0	114	114	607 J	325	330	706 J	614 J	646 J
Mercury	MG/KG	0.327	99%	23	0	113	114	0.03	0.016 J	0.022 J	0.065	0.047	0.038
Nickel	MG/KG	38.6	100%	1,560	0	114	114	28.9	17.1 J	17 J	28.9	20.1 J	23.7 J
Potassium	MG/KG	1,750	100%		NA	114	114	1200	800	869	1040	988 J	978 J
Selenium	MG/KG	3.4	25%	390	0	28	114	0.72 U	0.61 UJ	0.62 UJ	0.73 U	1.2 J	1.7 J

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXPRJ1101	11EXPRJ1201	11EXPRJ1201	11EXPRJ901	11EXFLB501	11EXFLB701
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXPRJ1101	11EXPRJ1202	11EXPRJ1201	11EXPRJ901	11EXFLB501	11EXFLB701
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/6/2006	12/6/2006	12/6/2006	12/6/2006	11/6/2006	11/6/2006
QC CODE								SA	DU	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Silver	MG/KG	2.2	5%	390	0	6	114	0.12 U	0.52 U	0.16 U	0.12 U	0.17 UJ	0.59 UJ
Sodium	MG/KG	164	75%		NA	86	114	89.7 J	57.1 J	113 J	36.3 J	33.6 UJ	166 UJ
Thallium	MG/KG	2.1	25%	5.2	0	28	114	0.79 U	0.69 U	0.69 U	0.81 U	1.3 J	1.5 J
Vanadium	MG/KG	31.6	100%	78.2	0	114	114	22.2 J	11.7 J	13.2 J	21.1 J	15.3 J	19 J
Zinc	MG/KG	591	100%	23,500	0	114	114	102 J	58.3 J	59.1 J	155 J	122 J	81.5 J

Notes:
(1) Maximum value came from sample-duplicate pair averaged value.
(2) The cleanup goal (CUG) values were based on the following criteria:
  a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046, Revised January 24, 1994.
  b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
  c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
  d. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
(3) The number of exceedances is not applicable (NA) for parameters without site-specific CUGs.
(4) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

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Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLC601	11EXFLC701	11EXFLC801	11EXFLD101	11EXPRE201	11EXPRH401
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLC601	11EXFLC701	11EXFLC801	11EXFLD101	11EXPRE201	11EXPRH401
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/6/2006	11/6/2006	11/6/2006	12/7/2006	12/6/2006	12/21/2006
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/KG	0	0%	800	0	0	114	7 U	6 U	5 U	6 U	15 U	7 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	600	0	0	114	7 U	6 U	5 U	6 U	15 U	7 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		NA	0	114	7 U	6 U	5 U	6 U	15 U	7 U
1,1,2-Trichloroethane	UG/KG	0	0%		NA	0	114	7 U	6 U	5 U	6 U	15 U	7 U
1,1-Dichloroethane	UG/KG	0	0%	200	0	0	114	7 U	6 U	5 U	6 U	15 U	7 U
1,1-Dichloroethene	UG/KG	0	0%	400	0	0	114	7 U	6 U	5 U	6 U	15 U	7 U
1,2,3-Trichlorobenzene	UG/KG	0	0%		NA	0	114	7 U	6 U	5 U	6 UJ	15 U	7 U
1,2,4-Trichlorobenzene	UG/KG	0	0%	3,400	0	0	114	7 U	6 U	5 U	6 UJ	15 U	7 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		NA	0	114	7 U	6 U	5 U	6 U	15 U	7 U
1,2-Dibromoethane	UG/KG	0	0%		NA	0	114	7 U	6 U	5 U	6 U	15 U	7 U
1,2-Dichlorobenzene	UG/KG	0	0%	7,900	0	0	114	7 U	6 U	5 U	6 U	15 U	7 U
1,2-Dichloroethane	UG/KG	0	0%	100	0	0	114	7 U	6 U	5 U	6 U	15 U	7 U
1,2-Dichloropropane	UG/KG	0	0%		NA	0	114	7 U	6 U	5 U	6 U	15 U	7 U
1,3-Dichlorobenzene	UG/KG	0	0%	1,600	0	0	114	7 U	6 U	5 U	6 U	15 U	7 U
1,4-Dichlorobenzene	UG/KG	0	0%	8,500	0	0	114	7 U	6 U	5 U	6 U	15 U	7 U
Acetone	UG/KG	67	2%	200	0	2	106	33 UJ	29 UJ	26 UJ	31 U	77 U	34 U
Benzene	UG/KG	0	0%	60	0	0	114	7 U	6 U	5 U	6 U	15 U	7 U
Bromochloromethane	UG/KG	0	0%		NA	0	114	7 U	6 U	5 U	6 U	15 U	7 U
Bromodichloromethane	UG/KG	0	0%		NA	0	114	7 U	6 U	5 U	6 U	15 U	7 U
Bromoform	UG/KG	0	0%		NA	0	114	7 U	6 U	5 U	6 U	15 U	7 U
Carbon disulfide	UG/KG	0	0%	2,700	0	0	114	7 U	6 U	5 U	6 U	15 U	7 U
Carbon tetrachloride	UG/KG	0	0%	600	0	0	114	7 U	6 U	5 U	6 UJ	15 U	7 UJ
Chlorobenzene	UG/KG	0	0%	1,700	0	0	114	7 U	6 U	5 U	6 U	15 U	7 U
Chlorodibromomethane	UG/KG	0	0%		NA	0	114	7 U	6 U	5 U	6 U	15 U	7 U
Chloroethane	UG/KG	0	0%	1,900	0	0	114	13 U	12 U	10 U	12 U	31 U	14 UJ
Chloroform	UG/KG	0	0%	300	0	0	114	7 U	6 U	5 U	6 U	15 U	7 U
Cis-1,2-Dichloroethene	UG/KG	2	1%		NA	1	114	7 U	6 U	5 U	6 U	15 U	7 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	7 U	6 U	5 U	6 U	15 U	7 U
Cyclohexane	UG/KG	0	0%		NA	0	114	7 U	6 U	5 U	6 U	15 U	7 U
Dichlorodifluoromethane	UG/KG	2.25 [1]	4%		NA	5	114	7 U	6 U	5 U	6 U	15 U	7 U
Ethyl benzene	UG/KG	0	0%	5,500	0	0	114	7 U	6 U	5 U	6 U	15 U	7 U
Isopropylbenzene	UG/KG	0	0%		NA	0	114	7 U	6 U	5 U	6 U	15 U	7 U
Methyl Acetate	UG/KG	0	0%		NA	0	114	7 UJ	6 UJ	5 UJ	6 U	15 U	7 U
Methyl Tertbutyl Ether	UG/KG	0	0%		NA	0	114	7 UJ	6 UJ	5 UJ	6 UJ	15 U	7 U
Methyl bromide	UG/KG	0	0%		NA	0	89	13 UJ	12 UJ	10 UJ	12 UJ	31 UJ	14 UR
Methyl butyl ketone	UG/KG	0	0%		NA	0	114	33 U	29 U	26 U	31 U	77 U	34 U
Methyl chloride	UG/KG	0	0%		NA	0	114	13 U	12 U	10 U	12 U	31 U	14 U
Methyl cyclohexane	UG/KG	0	0%		NA	0	114	7 U	6 U	5 U	6 U	15 U	7 U
Methyl ethyl ketone	UG/KG	0	0%	300	0	0	114	33 U	29 U	26 U	31 U	77 U	34 U

Appendix D
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SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLC601	11EXFLC701	11EXFLC801	11EXFLD101	11EXPRE201	11EXPRH401
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLC601	11EXFLC701	11EXFLC801	11EXFLD101	11EXPRE201	11EXPRH401
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/6/2006	11/6/2006	11/6/2006	12/7/2006	12/6/2006	12/21/2006
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Methyl isobutyl ketone	UG/KG	0	0%	1,000	0	0	114	33 U	29 U	26 U	31 U	77 U	34 U
Methylene chloride	UG/KG	49	89%	100	0	102	114	11 U	12 U	14 U	9 J	25 J	15 J
Styrene	UG/KG	0	0%		NA	0	114	7 U	6 U	5 U	6 U	15 U	7 U
Tetrachloroethene	UG/KG	2	2%	1,400	0	2	114	7 U	6 U	5 U	6 U	15 U	7 U
Toluene	UG/KG	0	0%	1,500	0	0	114	7 U	6 U	5 U	6 U	15 U	7 U
Total Xylenes	UG/KG	0	0%	1,200	0	0	114	20 U	18 U	15 U	19 U	46 U	21 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	300	0	0	114	7 UJ	6 UJ	5 UJ	6 UJ	15 U	7 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		NA	0	114	7 U	6 U	5 U	6 U	15 U	7 U
Trichloroethene	UG/KG	77	19%	700	0	22	114	12	9	2 J	6 U	15 U	7 U
Trichlorofluoromethane	UG/KG	0	0%		NA	0	114	7 U	6 U	5 U	6 U	15 UJ	7 U
Vinyl chloride	UG/KG	0	0%	200	0	0	114	13 U	12 U	10 U	12 U	31 U	14 U
Carcinogenic PAHs													
Benzo(a)anthracene	UG/KG	260,000	52%		NA	66	127	260000	51000	22000	19000	11000	12000
Benzo(a)pyrene	UG/KG	240,000	49%		NA	62	127	240000	44000	20000	18000	9900	9800
Benzo(b)fluoranthene	UG/KG	310,000	51%		NA	65	127	310000 J	54000	25000	33000 J	15000	11000
Benzo(k)fluoranthene	UG/KG	59,000	24%		NA	30	127	59000 J	16000	8700	2200 UJ	4200 J	5600
Chrysene	UG/KG	240,000	50%		NA	64	127	240000	45000	19000	22000	11000	11000
Dibenz(a,h)anthracene	UG/KG	40,000	35%		NA	44	127	40000 J	9700 J	4000 J	3600	1700 J	1900 J
Indeno(1,2,3-cd)pyrene	UG/KG	150,000	46%		NA	58	127	150000 J	29000 J	13000 J	14000	6400	6900
BTE (calculated)	MG/KG	355	94%	10 [b]	8	127	135	**355**	**68**	**30**	**28**	**15**	**15**
Metals													
Aluminum	MG/KG	17,500	100%	76,100	0	114	114	11800 J	9400 J	9960 J	13400 J	9730	11600 J
Antimony	MG/KG	11.3	18%	31	0	21	114	7.5 J	11.3 J	0.78 UJ	0.89 UJ	0.74 U	1.7 J
Arsenic	MG/KG	19.5	100%	21.5 [d]	0	114	114	7.4 J	10.6 J	4.5 J	5.6	4.6	5.5 J
Barium	MG/KG	248	100%	5,370	0	114	114	248 J	145 J	60.5 J	99.4 J	84.7	98.5 J
Beryllium	MG/KG	1	100%	150	0	114	114	0.8 J	0.52 J	0.49 J	0.67	0.58	0.66 J
Cadmium	MG/KG	2.5	94%	37	0	107	114	2.2 J	2.5 J	0.66 J	0.51	0.73	1 J
Calcium	MG/KG	216,000	100%		NA	114	114	23000 J	10900 J	4440 J	3880 J	75400 J	8820 J
Chromium	MG/KG	44.5	100%		NA	113	113	31.9 J	44.5 J	16.3 J	20.9 J	16.4 J	19.8 J
Cobalt	MG/KG	16.8	100%	903	0	114	114	10.5 J	13.3 J	7.7 J	8.7 J	6.1 J	8.4 J
Copper	MG/KG	131	100%	3,130	0	114	114	131 J	126 J	23.1 J	20.8	22	44.8 J
Iron	MG/KG	51,100	100%	38,600 [d]	2	114	114	23900 J	**48100** J	20700 J	24500 J	17600 J	20900 J
Lead	MG/KG	469	100%	400	1	114	114	350 J	**469** J	35.4 J	17.8 J	55.6 J	57.3 J
Magnesium	MG/KG	25200 [1]	100%		NA	114	114	6960 J	4580 J	4680 J	3870 J	4200	3750 J
Manganese	MG/KG	1,540	100%	1,760	0	114	114	544 J	707 J	508 J	316 J	429 J	229 J
Mercury	MG/KG	0.327	99%	23	0	113	114	0.327	0.199	0.05	0.052 J	0.157	0.144 J
Nickel	MG/KG	38.6	100%	1,560	0	114	114	35.7 J	35.2 J	23.9 J	23.9 J	18	24.1 J
Potassium	MG/KG	1,750	100%		NA	114	114	1240 J	1090 J	959 J	1450 J	1260	1380 J
Selenium	MG/KG	3.4	25%	390	0	28	114	1.7 J	3.4 J	1.7 J	0.76 UJ	0.89 U	2.1 J

Appendix D
Table D-1
Complete Confirmatory Soil Sample Results
SEAD-11 Record of Decision
Seneca Army Depot Activity

FACILITY								SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11	SEAD-11
LOCATION ID								11EXFLC601	11EXFLC701	11EXFLC801	11EXFLD101	11EXPRE201	11EXPRH401
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								11EXFLC601	11EXFLC701	11EXFLC801	11EXFLD101	11EXPRE201	11EXPRH401
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								11/6/2006	11/6/2006	11/6/2006	12/7/2006	12/6/2006	12/21/2006
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								IRA	IRA	IRA	IRA	IRA	IRA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [2]**	**Number of Exceedances [3]**	**Number of Times Detected**	**Number of Samples Analyzed [4]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Silver	MG/KG	2.2	5%	390	0	6	114	2.2 J	1.4 J	0.57 UJ	0.19 U	0.73 U	0.43 J
Sodium	MG/KG	164	75%		NA	86	114	157 J	164 J	159 UJ	56.3 J	73.9 J	227 UJ
Thallium	MG/KG	2.1	25%	5.2	0	28	114	0.89 UJ	1.8 J	1.3 J	0.85 U	0.98 U	0.85 J
Vanadium	MG/KG	31.6	100%	78.2	0	114	114	28.5 J	25.2 J	17.1 J	25.9 J	18.8 J	21.5 J
Zinc	MG/KG	591	100%	23,500	0	114	114	454 J	591 J	97.9 J	90.8 J	119 J	207 J

Notes:
(1) Maximum value came from sample-duplicate pair averaged value.
(2) The cleanup goal (CUG) values were based on the following criteria:
  a. VOCs: NYSDEC Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046, Revised January 24, 1994.
  b. cPAHs: Benzo(a)pyrene Toxicity Equivalence (BTE) calculation.
  c. Metals: USEPA Region IX PRGs for soil for a residential scenario.
  d. Since the PRGs for arsenic and iron were lower than the maximum SEDA site-wide background values, the CUGs for these parameters were replaced with the SEDA maximum background value.
(3) The number of exceedances is not applicable (NA) for parameters without site-specific CUGs.
(4) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

APPENDIX E

RISK MEMO AND EPA COMMENTS

PARSONS

M E M O R A N D U M

TO:	Julio Vazquez, USEPA Kuldeep K. Gupta, NYSDEC Mark Sergott, NYSDOH	**DATE:**	April 14, 2008
FROM:	Todd Heino, Parsons		
COPIES:	John Hill, AFCEE Keith Hoddinott, USACHPPM Randall Battaglia, USACE-NY Tom Battaglia, USACE – NY District Contract Data Library, AFCEE		Steve Absolom, SEDA Chris Boes, USACE Janet Fallo, USACE-NY Patrick O'Connor, Portage Environmental
SUBJECT:	SEAD-11 Post Remediation Risk Assessment		

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1. Purpose and Organization of Memorandum

Parsons has completed a risk assessment to evaluate potential risks associated with site conditions following the removal action at SEAD-11. This memorandum summarizes the risk assessment approach and the results. It is the Army's position that No Further Action (NFA) is needed at SEAD-11 based on the risk assessment results.

Section 2 of the memorandum provides the background information for the risk assessment; Section 3 identifies and presents the data used for the risk assessment; Sections 4 through 7 summarize each step of the four-step process (i.e., hazard identification, exposure assessment, toxicity assessment, and risk characterization); and Section 8 discusses the risk uncertainties associated with this risk assessment. Section 9 summarizes the risk assessment findings and Section 10 lists the references.

2. Background

SEAD-11, the Old Construction Debris Landfill, was located in the southwestern portion of the former Depot. The landfill reportedly operated in the 1940s. The Old Construction Debris Landfill measured approximately 4 acres in size. Previous investigations and activities performed at SEAD-11 include the Expanded Site Inspection (ESI) in 1994, the Additional Sampling Program conducted in 2000 and 2001, the interim remedial action (IRA) completed in January 2007, and the Long-Term Monitoring (LTM) program conducted in 2007 after the IRA. The results of previous investigative work are extensively reported in the Expanded Site Inspection Report for Three Moderately High Priority SWMUs (Parsons ES, 1995), Decision Document for a Non-Time Critical Removal Action at SEAD-11 (Parsons, 2003), and the Construction Completion Report (Parsons, 2007).

Based on the previous investigations, the contaminants of potential concern (COPCs) identified at SEAD-11 include landfill material (e.g., drums and metal containers), volatile organic compounds (VOCs), carcinogenic polycyclic aromatic hydrocarbons (cPAHs), and metals in soil. In addition, metals and VOCs are identified as COPCs in groundwater.

An interim remedial action (IRA) was conducted between October 2006 and January 2007. The IRA was performed to:

(1) remove the landfilled materials and contaminated soils to eliminate the potential threat that they represent to surrounding populations and to the environment;

(2) remove the potential source of TCE and metals detected in the groundwater immediately downgradient of the landfill; and,

(3) provide documentation to support an NFA finding for SEAD-11 upon completion of the IRA.

A Construction Completion Report was prepared by Parsons to provide record documentation of the IRA construction activities and to provide documentation that all landfill material and soil exceeding cleanup goals were removed. The Completion Report also concludes that no further action is required at SEAD-11.

This risk assessment memorandum presents the SEAD-11 human health risk assessment results, which are intended to provide documentation to support the NFA determination made for conditions remaining at SEAD-11. Since the area of concern (AOC) is located in a portion of the Depot where the defined future use is training, the risk assessment calculations completed focus on the evaluation of the potential risks for human receptors.

3. Data Used for Risk Assessment

Confirmatory soil sample results from the 2006-2007 IRA that are representative of soil remaining at SEAD-11 were used for the risk assessment. The soil data used for the risk assessment are presented in **Appendix A**. Soil associated with all these results were assumed accessible by all potential receptors evaluated in this risk assessment and therefore all presented results were used for this risk assessment.

The SEAD-11 groundwater dataset used for the risk assessment consists of analytical results from Round 1 and Round 2 of the Additional Sampling Program performed on November 20-21, 2000 and February 27-28, 2001, and the LTM conducted on February 20-22, 2007 after the IRA. The Additional Sampling Program and LTM groundwater samples were both collected under the USEPA Region 2 low-flow groundwater sampling method, and their results are in general comparable to each other. Groundwater samples were collected from seven monitoring wells (MW11-1, MW11-2, MW11-3, MW11-4, MW11-5, MW11-6, and MW11-7) during these three sampling events. VOC and metal results for the 2007 post remediation LTM sampling event were deemed to represent the current groundwater conditions and therefore were used for the risk assessment. Semi-volatile organic compounds (SVOCs), explosives, pesticides, polychlorinated biphenyls (PCBs), and herbicides were not analyzed during the 2007 LTM and the results from Round 1 and Round 2 of the Additional Sampling Program were used for the risk assessment. Groundwater data used for the risk assessment are also presented in **Appendix A**.

Groundwater data collected between January 16 and 24, 1994 from four wells (i.e., MW11-1, MW11-2, MW11-3, and MW11-4) as part of the ESI were not included in the dataset as the samples were not collected using the low-flow sampling method.

For the soil data, analytical results from sample duplicate pairs were averaged to provide a discrete result for the sample location prior to performing summary statistics and risk assessment calculations. In addition, all soil and groundwater data used in the risk assessment were validated by Parsons Chemists in accordance with the USEPA Region 2 Standard Operating Procedures (SOPs) and all data are deemed acceptable.

4. Hazard Identification

Soil COPCs evaluated within the risk assessment were selected by comparing the maximum detected concentrations with USEPA Region 9 Preliminary Remediation Goals (PRGs) for residential soil corresponding to a target cancer risk of $1x10^{-6}$ or a target hazard quotient of 0.1, whichever was lower. Other appropriate USEPA screening values were used if Region 9 PRGs were not available (e.g., USEPA Region 3 Risk-Based Concentrations for residential soil).

The maximum detected concentration of each chemical detected in groundwater was compared to the respective Region 9 PRG for tap water determined for a risk level of 1×10^{-6} (for carcinogens) or hazard quotient level of 0.1 (for noncarcinogens), whichever was lower. Other appropriate USEPA screening values were used if Region 9 PRGs were not available (e.g., USEPA Region 3 Risk-Based Concentrations for tap water, USEPA Maximum Contaminant Level for drinking water).

Chemicals were eliminated as COPCs for human exposure if concentrations were less than the screening level. A chemical was considered to be a COPC if the maximum detected concentration was greater than the screening value or if there was no screening value available. In addition, any member of a chemical class that has other members selected as COPCs was retained (e.g., all detected carcinogenic polycyclic aromatic hydrocarbons were retained as COPCs if one was identified as a COPC based on the screening process).

Tables 1A and **1B** present and summarize the COPC identification process for SEAD-11 soil and groundwater, respectively.

5. Exposure Assessment

5.1 Exposure Point Concentrations (EPCs)

The risks were calculated for reasonable maximum exposure (RME) scenarios. Soil EPCs are equal to an appropriate upper confidence limit (UCL) of the arithmetic mean of the concentrations. The EPC, or the appropriate UCL of the mean concentration, was calculated using the USEPA Software for Calculating Upper Confidence Limits (ProUCL version 4.00.02). The EPC calculation is consistent with the USEPA guidance (2007, 2002b).

Future use of groundwater has been based on the assumption that a single private well can be placed anywhere at SEAD-11. Therefore, as a conservative step, the maximum detected concentration of each COPC detected during any of the three rounds of monitoring was used as the EPC for groundwater.

EPCs for COPCs in ambient air were estimated based on the soil EPCs and the concentrations of particulate matter less than 10μm aerodynamic diameter (PM_{10}) in ambient air. Ambient PM_{10} concentration for a construction worker was estimated using an emission and dispersion model (**Appendix B**). PM_{10} concentration for industrial workers, trespassers, and residents (i.e., 17 $\mu g/m^3$) were based on existing SEDA air measurements.

Tables 2A through **2E** summarize EPCs for SEAD-11 soil, groundwater, ambient air and air within a shower.

5.2. Receptors, Exposure Pathways, and Exposure Profile

SEAD-11 is currently vacant property. The AOC is located in the Training parcel. Based on the current and foreseeable future land use of SEAD-11, three human receptors were identified for the BRA: current and future construction worker, future industrial worker, and current adolescent trespasser/future visitor (ages 11-16 yrs). In addition, a future resident was included to evaluate potential risks to receptors under the unrestricted use scenario.

Exposure pathways evaluated for soil exposure included inhalation of ambient dusts caused by soil resuspension, ingestion of soil, and dermal contact with soil. It is extremely unlikely that groundwater will be used as a drinking water source at SEAD-11, since there is an acceptable alternative water supply to serve the Depot's needs. In addition, the aquifer underlying SEAD-11 is not believed to be productive enough to supply the potential drinking water needs for occupants of SEAD-11. Therefore, the groundwater exposure pathways are potentially incomplete at SEAD-11. Nonetheless, as a conservative approach, the following groundwater exposure pathways were evaluated for the risk assessment: intake of groundwater, inhalation of groundwater (for future residents only), and dermal contact with groundwater (for construction workers and residential receptors only).

The exposure assumptions are summarized in **Tables 3A**, **3B**, **3C**, **3D**, and **3E** for an industrial worker, a construction worker, an adolescent trespasser, an adult resident, and a child resident, respectively. These assumptions were intended to approximate the frequency, duration, and manner in which receptors would be exposed to environmental media.

5.3 Quantification of Exposure

Each receptor's potential exposures to the identified COPCs were quantified for each of the exposure pathways. The exposures were calculated following methods recommended in USEPA guidance documents, such as the RAGS (USEPA, 1989). A human health intake or the absorbed dose, depending on the exposure route, was calculated based on the EPC and exposure factor assumptions. The total exposure is divided by the period of interest to obtain an average exposure. The averaging time is a function of the toxic endpoint: for non-carcinogenic effects, it is the exposure time (specific to the scenario being assessed) and for carcinogenic effects, it is lifetime (70 years).

6. Toxicity Assessment

The types of toxicity information considered in this assessment included the reference dose (RfD) and reference concentration (RfC) to evaluate non-carcinogenic effects, and the slope factor and unit risk to evaluate carcinogenic potential. The toxicity values for this risk assessment were selected in accordance with the USEPA (2003a) recommended human health toxicity value hierarchy.

For the evaluation of carcinogenic PAHs, toxicity equivalency factors (TEFs) based on the toxicity of benzo(a)pyrene were used (USEPA, 1993).

PAH	TEF
Benzo(a)pyrene	1.0
Benzo(a)anthracene	0.1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Dibenzo(a,h)anthracene	1.0
Chrysene	0.001
Indeno(1,2,3-cd)pyrene	0.1

To calculate a slope factor for a given PAH, the appropriate TEF value was multiplied by the slope factor for benzo(a)pyrene.

For the development of dermal toxicity values, information regarding Gastrointestinal (GI) absorption efficiency for administered doses was used. Specifically, oral slope factors were converted to dermal slope factors by dividing by the GI absorption efficiency. Oral reference doses were converted to dermal reference doses by multiplying by the GI absorption efficiency. The derivation of the dermal toxicity values for this risk assessment was consistent with the USEPA (2004) recommendation and the GI absorption efficiency recommended by USEPA in its Supplemental Guidance for Dermal Risk Assessment was used for the COPCs in this risk assessment. In the absence of any information on absorption for the substance or chemically related substances, an oral absorption efficiency of 100 percent was assumed in accordance with USEPA Region 2 guidance (personal communication between A. Schatz of Parsons and M. Maddeloni of USEPA Region 2).

RfCs were converted to inhalation reference doses with units of milligrams of chemical per kilogram of body weight per day (mg/kg-day); similarly, inhalation unit risk factors were converted to inhalation slope factor in units of per milligrams of chemical per kilogram of body weight per day ($(mg/kg\text{-}day)^{-1}$). The conversion was made by assuming an inhalation rate of 20 m^3/day and an adult body weight of 70 kg.

Chronic RfDs and RfCs are ideally based on chronic exposure studies in humans or animals. Chronic exposure for humans is considered to be exposure of roughly seven years or more, based on exposure of rodents for one year or more in animal toxicity studies. Construction workers and trespassers were

assumed to be exposed to the contaminants at SEAD-11 for 1 year and 6 years, respectively; therefore, subchronic RfDs and RfCs would be appropriate to evaluate the non-carcinogenic threshold effects. For this risk assessment, chronic RfDs and RfCs were used to conservatively assess risks for these receptors.

The toxicity factors used in this evaluation are summarized in **Tables 4A** through **4D**.

7. Risk Characterization

The detailed risk calculation is presented in **Tables 5** through **10** for exposure through soil ingestion, groundwater intake, soil dermal exposure, groundwater dermal exposure, inhalation of groundwater while showering, and inhalation of dust in ambient air. The non-cancer hazard indices and cancer risks calculated for the receptors are summarized in **Table 11**.

7.1 Risk Characterization Results for Receptors Under Training Scenario

Both cancer risks and non-cancer hazard indices for the industrial worker receptor and the adolescent trespasser receptor are within the USEPA limits.

The cancer risk for the construction worker is within the USEPA limit ($1x10^{-6}$ vs. $1x10^{-4}$). The non-cancer hazard index for the construction worker is above the USEPA limit. Dust inhalation, soil ingestion, and groundwater intake contribute approximately 80%, 14%, and 6%, respectively, to the total non-cancer hazard index. Almost all of the non-cancer hazard via inhalation of ambient air dust was caused by aluminum and manganese and aluminum, arsenic, iron, manganese, and vanadium contribute to the majority of the non-cancer hazard via soil ingestion. Summary descriptive statistics are presented in **Table 12** to compare the aluminum, arsenic, iron, manganese, and vanadium concentrations in SEAD-11 and upgradient soils. As is shown in the table, the 95% UCLs for aluminum, arsenic, iron, manganese, and vanadium in SEAD-11 soil are all below the corresponding maximum concentrations observed in the SEAD-11 upgradient location SB11-3 and the SEAD-4 upgradient location SB4-1. It should be noted that SEAD-4 is located west and therefore upgradient of SEAD-11; conditions upgradient of SEAD-4 were considered in this risk memorandum to represent SEAD-11 upgradient conditions. In summary, aluminum, arsenic, iron, manganese, and vanadium concentrations at SEAD-11 are not related to historic activities at SEAD-11. If aluminum, arsenic, iron, manganese, and vanadium in soil were not considered as COPCs for the risk assessment, the non-cancer hazard index for the construction worker would be below the USEPA limit of 1. Therefore, it is concluded that remaining chemicals found at SEAD-11 are not a result of a hazardous substance release and that contaminants associated with historical activities at SEAD-11 do not pose a health risk to construction workers.

In summary, remaining chemicals found at SEAD-11 are not a result of a hazardous substance release and that contaminants associated with historical activities at SEAD-11 do not pose a health risk to the receptors under the future use of the property (i.e., training).

7.2 Risk Characterization Results for Residential Receptors

The cancer risks for the adult resident and the child resident are both at $4x10^{-5}$, below the USEPA's limit for cancer risk (i.e., $1x10^{-4}$). The total life-time cancer risk for the resident (sum of cancer risk for the adult resident and the child resident) is $9x10^{-5}$, below the USEPA limit.

The non-cancer hazard indices for the adult resident and child resident are 1 and 5, at or above the USEPA limit of 1. Groundwater intake is the predominant exposure pathway that contributes to 55% and 47% to the total non-cancer hazard for adult resident and child resident, respectively. Trichloroethene (TCE) and manganese in groundwater all contribute significantly (i.e., HQ≥0.1) to the total HI computed for the adult resident. A further review of the data indicates that the manganese concentrations detected in SEAD-11 groundwater are generally consistent with the SEAD-11 upgradient conditions (as shown in **Table 13**). Therefore, manganese was not identified as a COC in SEAD-11 groundwater. If manganese were not included in the risk calculation, the non-cancer hazard index for an adult resident via groundwater intake and the total non-cancer hazard index for an adult resident would be below the USEPA limit of 1.

Trichloroethene in groundwater would result in non-cancer hazard index equal to the USEPA limit of 1 for the child resident. For the child resident, soil ingestion also would result in an elevated HI of 2. The predominant risk contributors for this exposure pathway include aluminum, arsenic, iron, manganese, and vanadium, all with associated HQs greater than 0.1. As shown in **Table 12**, the aluminum, arsenic, iron, manganese, and vanadium concentrations in SEAD-11 soil are consistent with the upgradient conditions; therefore, none of these metals were identified as COCs in SEAD-11 soil.

In summary, remaining chemicals found at SEAD-11 are not a result of a hazardous substance release and that contaminants associated with historical activities at SEAD-11 do not pose unacceptable cancer risks to future potential residents or unacceptable non-cancer hazards to future adult residents. TCE detected in groundwater may result in non-cancer hazard index at the USEPA limit of 1 for the child resident; however, it should be noted that it is extremely unlikely that groundwater will be used as drinking water source at SEAD-11, since there is a current acceptable water supply, and the aquifer beneath SEAD-11 is not believed to be productive enough to supply the drinking water needs for SEAD-11. In addition, the maximum detected TCE concentration in SEAD-11 groundwater (i.e., 3.1 µg/L) is below the NYSDEC GA Groundwater Standard (i.e., 5 µg/L) and the Maximum Contaminant Level (MCL) promulgated in the National Primary Drinking Water Regulations (i.e., 5 µg/L). Further, as discussed in the following section, there is uncertainty associated with the TCE toxicity value and it is likely the risks presented in this memorandum were overstated by using conservative toxicity values for TCE.

8. Uncertainties

All risk assessments involve the use of assumptions and professional judgments to varying degrees. This results in uncertainty in the final estimates of risk. There are uncertainties associated with each component of the risk assessment from data collection through risk characterization. These uncertainties are addressed by making conservative assumptions concerning risk and exposure parameters throughout the assessment. As a result, the risk assessment provides upper-bound estimates of the risks to populations near the SEAD-11, and is highly unlikely to underestimate actual risks related to SEAD-11.

The primary site-specific uncertainties associated with the risk assessment for SEAD-11 include evaluation of TCE toxicity value. The non-cancer hazard quotient from exposure to TCE in groundwater via groundwater intake is at the USEPA limit of 1. The current USEPA recommended toxicity values (oral reference dose of $3x10^{-4}$ mg/kg-day, oral/inhalation cancer slope factor of 0.4 $(mg/kg\text{-}day)^{-1}$, and

inhalation reference concentration of 0.04 mg/m^3) for TCE were selected for this risk characterization. These values were recommended by the USEPA's National Center for Environmental Assessment (NCEA) in August of 2001 in its preliminary Draft Trichloroethene Health Risk Assessment. The proposed toxicity values, however, have received considerable scrutiny, even from within the USEPA. Numerous technical concerns with the NCEA Draft Trichloroethene Health Risk Assessment were identified by groups such as the Department of Defense (DoD, 2001), USEPA regional toxicologists (e.g., USEPA Region 8, 2003), and USEPA's Science Advisory Board (USEPA SAB, 2002). The USEPA is currently in the process of revising the Draft Trichloroethene Health Risk Assessment. In the interim, agencies are utilizing various toxicity values for trichloroethene. For example, toxicologists at USEPA Region 8 have technical concerns regarding the 2001 proposed toxicity values and recommend using the USEPA's withdrawn toxicity value for trichloroethene (USEPA Region 8, 2003). The oral reference dose withdrawn from IRIS is $6x10^{-3}$ mg/kg-day for TCE. Massachusetts Department of Environmental Protection (MADEP, 2007) is using $2x10^{-3}$ mg/kg-day as the oral reference dose for TCE. If these values were used to replace the oral reference dose value used in this risk assessment, the non-cancer hazard indices for potential residents caused by chemicals associated with SEAD-11 release would be within the USEPA limit.

9. Conclusions

Results of the risk assessment conducted for SEAD-11 indicate that remaining chemicals at SEAD-11 are not a result of a hazardous substance release and that contaminants associated with historical activities at SEAD-11 do not pose a health risk to the receptors under the future use of the property (i.e., training).

Although the risk calculation indicates that the TCE concentrations detected in groundwater may pose potential non-cancer hazard to the residential child receptor, there is uncertainty associated with the toxicity value and if alternative toxicity values were used, the non-cancer hazard index would be within the USEPA limit. Further, the detected TCE concentrations found at SEAD-11 are all below the NYSDEC GA Standard and the MCL for drinking water contaminants. In addition, it is extremely unlikely that groundwater will be used as drinking water source at SEAD-11, since there is an acceptable alternative water supply available. Further, the aquifer underlying SEAD-11 is not considered to be productive enough to supply future potential drinking water needs for SEAD-11. Based on the above facts, it is the Army's position that NFA is needed at SEAD-11.

10. References

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NOV - 9 2007

Stephen M. Absolom, BEC
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Re: Draft Technical Memorandum for SEAD-11
Seneca Army Depot, Romulus, NY

Dear Steve:

After reviewing the subject document dated September 2007, we offer the following concerns/comments.

GENERAL COMMENT

1. Please consider segregation of the individual hazard estimates based on target organ system for instances where the projected total hazard index (HI) is reported as greater than the U.S. EPA brightline of 1.0. As a result of such an evaluation, total estimates of non-cancer hazard may be pared down and the contribution of a particular health effect on the total estimates of non-cancer hazard may be adequately reflected.

SPECIFIC COMMENTS

1. **Section 3, *Data Used for Risk Assessment*, Page 3 and Table A1, *Risk Assessment Soil Dataset*:** For the soil data, the text and Table A1 (footnote 1) indicate that sample duplicate pairs were averaged to generate the maximum concentration. Typically, the maximum concentration of a sample duplicate pair is used as the default maximum detected concentration (MDC) and not the average of the two. Furthermore, in using the MDC of a duplicate pair, an extra level of conservatism is conferred in the screening level assessment. In any revisions to the human health risk assessment (HHRA), please expand the uncertainty section to include a discussion on the impact of using the average of a sample duplicate pair instead of the MDC of a duplicate pair in the comparison of screening criteria (i.e., USEPA Region 9 residential soil Preliminary Remediation Goals [PRGs]) to soil concentrations.

2. **Section 4, *Hazard Identification*, Page 3**: According to Section 4, Hazard Identification, chemicals have been eliminated from further consideration as chemicals of potential concern (COPC) based on one of the following two factors:

   - If a chemical's concentration in a particular environmental medium was less than its associated health-protective screening criterion; or,
   - If an associated health-protective screening criterion was not located for a particular chemical.

   The latter decision criterion, above, is problematic in that the lack of a promulgated screening level for a particular chemical should not be considered the basis for elimination from the site COPC list. In addition, the HHRA fails to identify precisely which chemicals have been eliminated as site COPCs based on the absence of associated screening criteria. Efforts should be advanced to identify appropriate surrogate screening criteria for those chemicals which lack chemical-specific screening criteria. Surrogate compound identification should be based on a structure-activity relationship, where the surrogate compound may be assumed to elicit the same type of health effects via the same pathways and/or mechanisms. In any revision to this document, please provide a list of the chemicals which have been eliminated from further evaluation based on their lack of available toxicity criteria or health-based screening concentrations. Please expand the uncertainty section to provide a discussion regarding the potential impact these exclusions are assumed to have on the final quantitative point estimates of cancer risk and non-cancer hazard.

3. **Subsection 5.1, *Exposure Point Concentrations (EPCs)*, Page 3**: ProUCL Version 3.0 has been updated, and the update to 3.0 (i.e., Version 4.0) may be accessed at http://www.epa.gov/nerlesd1/tsc/software.htm. Please use the new version of ProUCL for future risk assessments. Note that although the new version of ProUCL allow for calculated distributions to be applied for non-detect data, USEPA has not altered its policy to use 1/2 of the detection limit for non-detect data. If there are any questions, please contact the USEPA risk assessor, Chuck Nace (212.637.4164).

4. **Subsection 7.2, *Risk Characterization Results for Residential Receptors*, Page 6 and Table 11, *Calculation of Total Noncarcinogenic and Carcinogenic Risks – SEAD-11, Reasonable Maximum Exposure (RME)***: To streamline the presentation of cancer risk for a residential land use scenario and to provide a better understanding of how cancer risk applicable to the aforementioned scenario has been generated, please consider presenting cancer risk as an age-adjusted risk as opposed to a combined risk. This age-adjusted approach is predicated on 6 years of exposure as a child and 24 years exposure as an adult, for a total exposure duration (ED) of 30 years – accounting for differences in body weight and soil intake rates.

MINOR COMMENTS:

To the greatest extent practicable, please appropriately differentiate between cancer risk and non-cancer hazard. Comprehension of the discussion, particularly in regard to the risk characterization section, and associated tables will be benefited by consistent use of the proper terminology surrounding risk and hazard.

Table 3C, *Exposure Factor Assumptions for SEAD-11 – Adolescent Trespasser*: The citation for the default exposure duration (ED) parameter value (i.e., 5 years) presented in Table 3C for an adolescent trespasser is U.S. EPA 2002. However, this does not appear to be the appropriate reference. Please clarify the basis of this ED value.

If you have any questions regarding the above, please contact me at (212) 637-4323.

Sincerely,

Julio F. Vazquez

Julio F Vazquez, RPM
USEPA/Region 2
Emergency and Remedial Response Division
Special Projects Branch/Federal Facilities Section

cc: K. Gupta, NYSDEC
M. Sergott, NYSDOH
T. Heino, Parsons
R. Battaglia, USACE