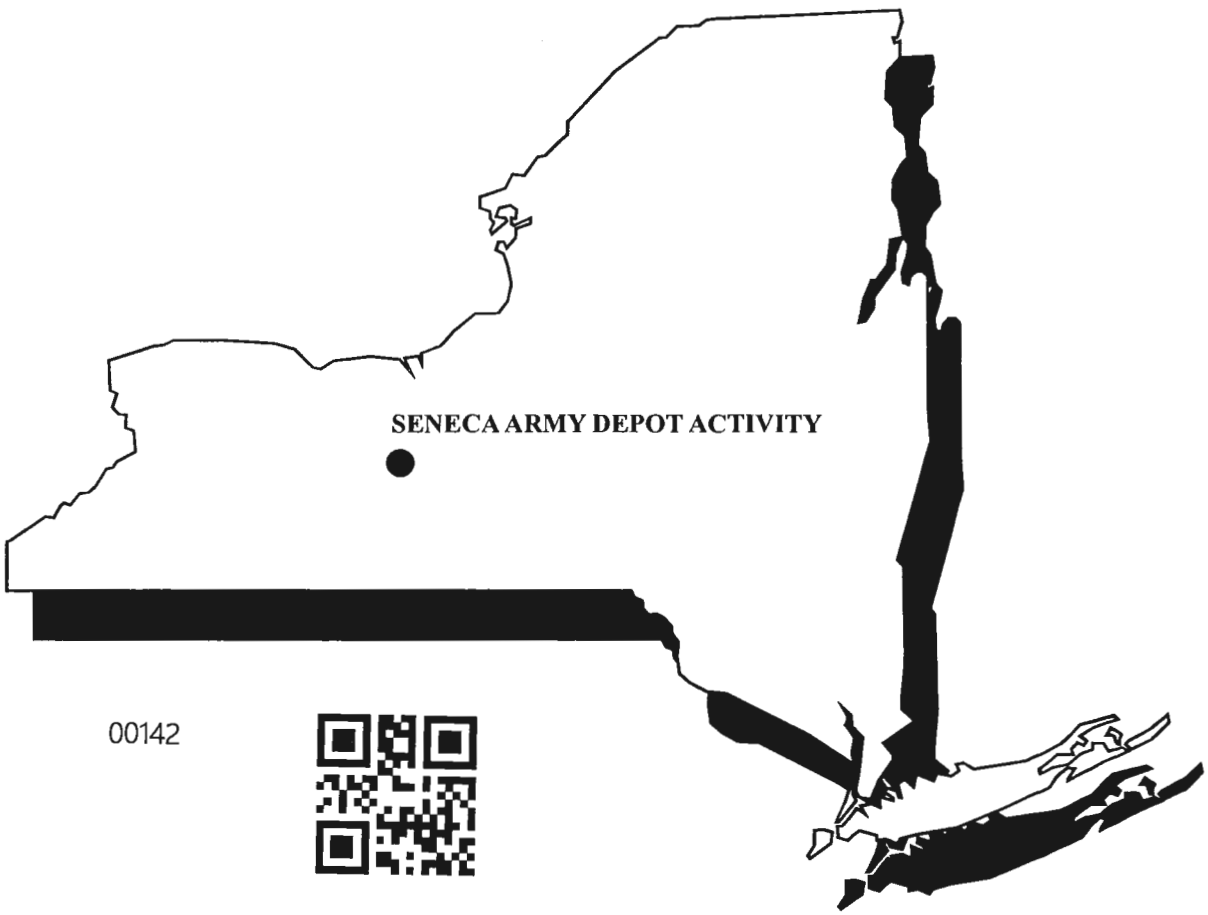
U.S. ARMY ENGINEER DIVISION
HUNTSVILLE, ALABAMA



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DRAFT FINAL

PROPOSED PLAN
TWENTY-FIVE NO ACTION SWMUS
(SEADS 07, 09, 10, 18, 19, 20, 21, 22, 32, 33, 35, 36, 37, 42, 47, 49, 51, 53, 55, 61, 64A, 64B, 64D, 65, AND 68) AND
SIX NO FURTHER ACTION SWMUS
(SEADS 28, 29, 30, 31, 34, AND 60)

SENECA ARMY DEPOT ACTIVITY (SEDA)

JUNE 2003

DRAFT FINAL PROPOSED PLAN TWENTY-FIVE NO ACTION SWMUS (SEADS 07, 09, 10, 18, 19, 20, 21, 22, 32, 33, 35, 36, 37, 42, 47, 49, 51, 53, 55, 61, 64A, 64B, 64D, 65, AND 68) AND SIX NO FURTHER ACTION SWMUS (SEADS 28, 29, 30, 31, 34, AND 60)

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK 14541

and

US ARMY CORPS OF ENGINEERS
HUNTSVILLE, ALABAMA 35816

Prepared by:

PARSONS
100 Summer Street
Suite 800
Boston, Massachusetts 02110

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June 2003

DRAFT FINAL Proposed Plan
Twenty-Five No Action SWUMs (SEADs 07, 09, 10, 18, 19, 20, 21, 22, 32, 33, 35, 36, 37, 42, 47, 49, 51, 53, 55, 61, 64A, 64B, 64D, 65, and 68) and Six No Further Action SWMUs (SEADs 28, 29, 30, 31, 34, and 60) at the SENECA Army Depot Activity (SEDA)
Romulus, New York

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Twenty-Five No Action SWMUs and Six No Further Action SWMUs at the SENECA ARMY DEPOT ACTIVITY (SEDA) Romulus New York

June 2003

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1 PURPOSE OF PROPOSED PLAN

This Proposed Plan presents and summarizes data and information that the United States Army (Army) has assembled in support of its assertion that thirty-one (31) former solid waste management units (SWMUs) within the Seneca Army Depot Activity (SEDA or Depot) require either No Action (NA) or No Further Action (NFA) because threats to human health or the environment resulting from petroleum products and hazardous materials do not exist. The Proposed Plan identifies the Army's preferred and recommended remedial option (i.e., No Further Action or No Action) for the 31 SWMUs, and provides the justification and rationale for its recommended alternative at each site. Representatives of the Army developed the Proposed Plan in cooperation with the U.S. Environmental Protection Agency, Region II (EPA) and the New York State Department of Environmental Conservation (NYSDEC).

The Army is issuing this Proposed Plan as part of its public participation responsibilities under Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, and Section 300.430(f) of the National Contingency Plan (NCP). This Proposed Plan is being provided to inform the public of the Army's preferred and recommended remedial alternative. The Proposed Plan is intended to solicit public review and comment of available information and data and to specify the Army's preferred remedial option for the 31 SWMUs. The Army's preferred remedy is No Action for SEADs 07, 09, 10, 18, 19, 20, 21, 22, 32, 33, 35, 36, 37, 42, 47, 49, 51, 53, 55, 61, 64A, 64B, 64D, 65, and 68. In addition, the Army is proposing No Further Action as the preferred remedial alternative for the following SWMUs: SEADs 28, 29, 30, 31, 34, and 60. The Army has recommended NA or NFA as the preferred remedial alternative if one or more of the following conditions have been met by the SWMU:

1. Evaluation of historic records and information indicate that there is no evidence or indication of petroleum product or hazardous material release to the environment. In many cases, petroleum products and hazardous materials have not been handled or used at the site. This information was presented to and discussed with representatives of EPA and NYSDEC and served as the basis of the Army initially identifying this site as a No Action SWMU in the SWMU Classification Report (Parsons 1995).
2. Evaluation of historic records and information

indicate that there is no evidence or indication that either solid wastes or hazardous wastes were present, managed, or disposed of at the site. The Army has identified all known or potential risks to the environment, and where these potential risks had an identifiable location, these were defined as a "site" and/or a "Solid Waste Management Unit" for purposes of regulatory review.

3. Based on the analysis of collected sampling data, the Army has determined that there are no instances where hazardous materials have been detected, or if hazardous chemicals have been detected in specific media, the concentrations at which they have been found do not exceed promulgated regulatory criteria defined [e.g., New York Class C surface water criteria, New York GA Groundwater Standards, federal Maximum Contaminant Levels (MCLs), etc.] by the State of New York or the federal government.
4. If data indicates that hazardous chemicals are present above criteria limits, the results of a human health risk assessment indicate that the land encompassed by the identified SWMU is suitable for unrestricted use (residential use).

The distinction separating a No Action site from a No Further Action site is that no historic remedial action, such as a former tank removal, spill clean-up operation, or limited excavation, has ever been performed at the site. Sampling, chemical analyses, and risk assessments may have been completed for either No Action or No Further Action sites, but in addition some form of historic remedial measure has been performed at a No Further Action site.

This Proposed Plan identifies the preferred remedy and discusses the reasons for this preference. The Army will select a final remedy for the sites only after careful consideration of all comments received during the public comment period, and subsequent to final consultation with the EPA and NYSDEC.

2 COMMUNITY ROLE IN THE SELECTION PROCESS

The Army, the EPA, and the NYSDEC rely on public input to ensure that the concerns of the community are considered in selecting an effective remedy for each Superfund site. A public comment period has been set from {DATE} to {DATE} to provide an opportunity for public participation in the remedy selection process for this site. A public meeting is scheduled for {DATE} at the {LOCATION} beginning at {TIME}.

At the public meeting, the results of the investigations and the remedial action (RA) at the sites will be presented along with a summary of the preferred remedy. At the presentation, a question-and-answer period will be held, during which the public can ask questions or submit written comments on the Proposed Plan.

Comments received at the public meeting, as well as written comments, will be documented in the Responsiveness Summary section of the Record of Decision (ROD). The ROD formalizes the selection of the remedy.

Written comments may be sent to:

Mr. Stephen Absolom
BRAC Environmental Coordinator
Building 123
Seneca Army Depot Activity
Romulus, New York 14541-5001

Information and data summarized within this Proposed Plan for each of the 31 SWMUs is presented and described in greater detail within the "Decision Document, Twenty-Two No Further Action Sites" Report (Parsons, March 2002), "Decision Document, Twenty-Six No Further Action Sites" Report (Parsons, September 2001), and the "Decision Document, Mini Risk Assessment" Report (Parsons, May 2002), which should be reviewed and consulted. The Decision Documents are submitted

to fulfill the Army's obligation to provide a Completion Report that documents the efforts conducted under a CERCLA Remedial Investigation/Feasibility Study (RI/FS) for the identified sites. To better understand the listed sites and the investigations and studies that have been conducted at each location, the public is encouraged to review the project documents at the following repository:

Seneca Army Depot Activity
Building 123
5786 State Route 96
Romulus, New York 14541-5001
(607) 869-1309
Hours: Mon – Thur, 8:30 a.m. – 2:30 p.m.

3 SITE BACKGROUND

The Seneca Army Depot Activity occupies approximately 10,600 acres of land that is located near the Village of Romulus in Seneca County, New York. The military facility has been owned by the U.S. Government and operated by the Army since 1941. SEDA is located in an uplands area, which forms a divide separating two of the New York Finger Lakes, Cayuga Lake on the east and Seneca Lake on the west. The elevation of the facility is approximately 600 feet above Mean Sea Level (MSL).

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

The Army provided EPA and NYSDEC with a proposed classification for the 72 identified Solid Waste Management Units (SWMUs) at the Depot in 1989. At the time of the submission of its list, the Army consolidated sites and potential sites and classified 72 SWMUs. Seneca Army Depot was a generator and Treatment, Storage and Disposal Facility regulated under the Resource, Conservation, and Recovery Act (RCRA). Under this permit system, corrective action is required at all SWMUs. Since remedial goals are the same for CERCLA and RCRA, all SWMUs were classified as No Action or Areas of Concern in a SWMU Classification Report under the Interagency Agreement with NYSDEC and EPA. This document was finalized in 1994. All known potential sites were included in this list of 72 SWMUs. In further investigations of Areas of Concern (AOCs), the Army prioritized sites for further investigations based upon data and potential risks to the environment. Once all the SWMUs were identified and categorized, the Army's focus of investigations centered on the SWMUs that were considered designated as higher-level AOCs (e.g., high priority AOCs first, then moderate priority AOCs).

Due to the merging of RCRA corrective action and CERCLA actions, terminology specific to the regulatory areas is used interchangeably.

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

In support of DoD's BRAC goals for the release of non-affected portions of the Depot to the surrounding community for their reuse for non-military purposes, the Army began preparation of a completion document to summarize and present necessary data and information substantiating its claim that its 24 designated No Action SWMUs satisfied conditions defined in Section 10.3 (b) of the Interagency Agreement (IAG), commonly referred as Federal Facility Agreement (FFA).

> "No Action SWMUs shall be those SWMUs from which no release of hazardous substances, pollutants, or contaminants has occurred or from which a release of hazardous waste or substances, pollutants or contaminants has occurred that does not pose a threat to public health, welfare or the environment."

A final copy of the completion report for 22 SWMUs was submitted to the EPA and NYSDEC in March 2002. This document was titled "Decision Document, Twenty-Two No Further Action Sites" (Parsons, 2002), and provided documentation supporting the Army's claims that the identified sites did "not pose a threat to the public health, welfare or the environment." The 22 SWMUs for which documentation was provided included 20 No Action SWMUs presented in the SWMU Classification Report (i.e., SEADs 01, 02, 07, 10, 18, 19, 20, 21, 22, 29, 30, 31, 35, 36, 37, 42, 49, 55, 61, and 65) identified in the SWMU Classification Report (Parsons, 1994), and two of the sites (i.e., SEAD-32 and SEAD-60) initially classified as Low Priority AOCs in the SWMU Classification Report (Parsons, 1994). SEADs 32 and 60 were included in this decision document based on the results of site investigations that were conducted (SEAD-32) or on the completion of RA (SEAD-60). The current listing of the No Action or No Further Action SWMUs includes all the SEADs presented in this Decision Document with the exception of SEAD-01 and SEAD-02. The requested "No Further Action" determinations for two of the SWMUs (SEAD-01 and SEAD-02) discussed in the "Decision Document, Twenty-Two No Further Action Sites" Report (Parsons, March 2002) have been postponed pending completion of Resource Conservation and Recovery Act (RCRA) ongoing closure actions at these two sites.

A final copy of the Decision Document report for SWMUs that were initially classified as Moderately Low Priority AOCs or Low Priority AOCs was submitted to the EPA and NYSDEC in May 2002. This document was titled "Decision Document, Mini Risk Assessment" (Parsons, 2002), and provided mini risk assessment documentation for 21 SEADs that were initially classified as Moderately Low Priority AOCs or Low Priority AOCs and SEAD 120B, which was not included in the initial SWMU list provided by the Army. The Decision Document supports the Army's claims that SEADs 09, 23, 32, 33, 34, 64B, and 68 did "not pose a threat to the public health, welfare or the environment." The above SEADs have been included in the current listing of the No Action or No Further Action SWMUs. In addition, SEADs 64A and 64D have been included in this proposed plan. The potential risks to human health presented in the decision document were caused by the overstated metal concentration associated with high turbidity in groundwater samples. The mini risk based on the 2003 low-flow groundwater data indicates neither site poses a threat to human health.

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In addition, three SWMUs included in the Decision Document, Twenty-Six No Further Action Sites" Report (Parsons, September 2001), SEADs 47, 51, and 53, are included in the current listing of the No Action or No Further Action SWMUs.

The current listing of the No Action or No Further Action SWMUs considered in this Proposed Plan is provided in **Table 1**. The locations of the 31 SWMUs proposed for No Action or No Further Action are shown with relation to the proposed future land use on **Figure 1**.

4 SITE DESCRIPTIONS

4.1 SEAD-07: Shale Pit

The "Shale Pit," SEAD-07, is an excavation pit that covers an area measuring approximately two acres. SEAD-07 is located north of North Patrol Road in the northwestern corner of the Depot. This SWMU is located in a portion of the Depot where the future land use has been designated as institutional development. The general location of this SWMU is shown on **Figure 1**, and presented in greater detail on **Figure 2**. The Shale Pit is located within 185-acres of land that was transferred by the U.S. Government to Seneca County Industrial Development Agency (SCIDA) on February 14, 2000. The transferred land is currently leased to KidsPeace and is used as the location of the Seneca Woods Residential Program. ~~EPA concurred that this site was no action under the Finding of Suitability to Transfer; DEC abstained.~~

The Shale Pit was created when the Army excavated it to obtain shale that was used for road surfaces at the Depot. Once the excavation was opened, it was used for disposal of construction debris from Depot building and demolition activities. As developed, the Shale Pit holds only concrete, asphalt and wood debris; no other wastes were placed in the Shale Pit during its life. The base of the excavation pit was terminated above the regional groundwater table. No cover material was applied to the debris subsequent to its placement in the pit. Construction debris placed into the pit was inert and free of chemicals that could cause soil and groundwater contamination. Construction debris that is free of chemical contamination is exempt from regulation under New York State Hazardous Waste Regulations, 6 NYCRR Section 360-7.1 (b)(i).

The Army proposed SEAD-07 as a No Action SWMU. This recommendation was documented in the final SWMU Classification Report (Parsons, 1994), and was concurred by both EPA and NYSDEC.

4.2 SEAD-09: Old Scrap Wood Site

The Old Scrap Wood Site (SEAD-09) is located in the eastern-central portion of the Depot about 400 feet north of the intersection of East Kendaia Road and East Patrol Road. This SWMU is located in a portion of the Depot where the future land use has been designated as industrial development. The general location of this SWMU is shown on **Figure 1**, and presented in greater detail on **Figure 3**. A dirt road leads to a cul-de-sac at the end of which debris is present. This debris consists of numerous piles of scrap wood, tree stumps, and other miscellaneous items that exist in and around the cul-de-sac. There are no buildings or existing structures near this site.

Construction debris was deposited at this site from 1977 to 1984, and scrap wood was deposited here from 1984 to 1986. Periodically between 1985 and 1992 the fire department used this area for fire training when they burned scrap wood that could not be sold. The exact nature of this fire training is uncertain. No historical data exists on the procedures used or materials burned.

The Army proposed SEAD-09 as a Moderately Low Priority AOC. This recommendation was documented in the final SWMU Classification Report (Parsons, 1994), and the EPA and NYSDEC concurred with this proposal.

4.3 SEAD-10: Scrap Wood Pile

SEAD-10 was used for the storage of scrap wood generated from site activities. The Scrap Wood Pile encompassed an area measuring approximately 250 feet long by 185 feet wide that is located on the south side of East Kendaia Road near Building 113. This portion of the Depot is designated for planned industrial development. The general location of this SWMU is shown on **Figure 1**, and presented in greater detail on **Figure 3**.

Use of the woodpile began in 1986 and continues in its present location today. Scrap wood from Depot activities is segregated, stored in piles, and was then sold to Depot employees and the public. The storage area is divided into three sections: 1) an area for scrap wood (west pile; 130 feet by 185 feet); 2) an area for disposal of wooden pallets (middle pile; 60 feet by 185 feet); and 3) an area for pressure treated wood and poles (east pile; 60 feet by 185 feet).

SEDA's fire department periodically used wood from the scrap woodpile as fuel for fire training exercises at other locations. Whenever fire-training exercises were conducted, the State of New York was notified prior to any burning.

The Army proposed SEAD-10 as a No Action SWMU. This recommendation was documented in the final SWMU Classification Report (Parsons, 1994), and the EPA concurred. NYSDEC reserved comment.

4.4 SEAD-18: Building 709 – Classified Document Incinerator

During its operational history, SEAD-18, the Classified Document Incinerator in Building 709, was actually located at two different places within the north-central portion of SEDA. Between 1956 and 1983, the first Building 709 was located southwest of Building 707, at the edge of the parking lot near the North Patrol Road. In 1983, the first Building 709 was torn down, and a second building also designated as Building 709, was constructed in an area between Buildings 701 and 702. The approximate location of the second Building 709 is shown on **Figure 1**, and in greater detail on **Figure 2**. Both buildings designated as 709 are located in the north-central portion of SEDA, where the proposed future land use for the site is designated as institutional. Both locations were included in land that was transferred by the U.S. Government to SCIDA on February 14, 2000. The transferred land is currently leased to KidsPeace and is used as the location of the Seneca Woods Residential Program. The last incinerator (SEAD-18) was removed prior to the transfer of the land surrounding it to SCIDA. EPA concurred as no action under the Finding of Suitability to Transfer; DEC abstained.

The Classified Document Incinerator, to the site's designation, was a single chamber, propane-fired Washburn and Granger model S-200. As it was configured, the incinerator did not include any form of air pollution control device. The incinerator had a rated capacity of 96 pounds per hour (lb/hr), and SEDA personnel indicate that its normal charging rates was on the order of 30-40 pounds per day (lbs/day) of classified paper documents. During its use, the incinerator was predominantly used to burn classified paper wastes that contained minimal levels of plastic, and possibly some glass waste intermixed.

When the incinerator was used, generated ash was tested and accepted for disposal at permitted local landfills during the 1980s and early 1990s. There is no information regarding practices before this time period.

The Army proposed SEAD-18 as a No Action SWMU. This recommendation was documented in the final SWMU Classification Report (Parsons, 1994), and both EPA and NYSDEC concurred with this description.

4.5 SEAD-19: Building 801 – Former Classified Document Incinerator

Between 1956 and 1983, the Army operated a Classified Document Incinerator in Building 801, which is located in the north-central portion of the Depot and designed as SEAD-19. The land in this portion of the Depot is designated for a future use of conservation/recreation. The approximate location of the SEAD-19 is shown on **Figure 1**, and in greater detail on **Figure 4**.

The incinerator at Building 801 was used to incinerate classified documents. The incinerator is a

single chamber, propane-fired Washburn and Granger model S-200 that does not include any air pollution control devices. It has a rated capacity of 96 lb/hr of refuse, but during the time of its use it had a normal charging rate of 30-40 pounds per day (lbs/day) of classified paper documents. Personnel of SEDA indicate that it was predominantly used to burn paper wastes (95%) with some microfilm intermixed.

The incinerator is currently not in use, and it is no longer permitted for use. When the incinerator was used, generated ash was tested and accepted for disposal at permitted local landfills during the 1980s and early 1990s. There is no information regarding practices before this time period.

The Army proposed SEAD-19 as a No Action SWMU. This recommendation was documented in the final SWMU Classification Report (Parsons, 1994), and this designation was concurred with the EPA and NYSDEC.

4.6 SEAD-20: Sewage Treatment Plant No. 4

Sewage Treatment Plant (STP) No. 4 is located on the south side of West Romulus Road in the east central portion of the Depot. Land surrounding this facility is designated for planned industrial development. The general location of SEAD-20 is shown on **Figure 1**, and in greater detail on **Figure 3**.

STP No. 4 was designed to treat a maximum flow capacity of 250,000 gallons per day (gpd). Inlet flow received includes domestic wastewater with a minimal component of industrial discharges consisting primarily of boiler plant blowdown fluids. The majority of wastewater received originates from the administration area, the warehouse area, the Military Elliot Acres Housing Complex, and the adjacent civilian communities of Romulus and Varick, New York.

STP No. 4 was put online in 1942. Unit operations include a bar screen, a wet well, a dual-chambered Imhoff tank, a covered trickling filter containing plastic media, a secondary clarifier, and two sludge drying beds (each measuring approximately 35 feet by 35 feet). The effluent from STP No. 4 is discharged to an unnamed adjacent stream that flows northerly and enters a wetland that is on the Depot property. The wetlands are used as a substitute for in-situ tertiary treatment.

STP No. 4 operated, and continues to operate today, under two State of New York permit authorizations. STP No. 4's State Pollutant Discharge Elimination System (SPDES) number is NY0021296 and its NYSDEC identification number is 8-4530-00006/00035.

Sewage treatment plants by definition are not SWMUs. The Army proposed SEAD-20 as a No Action SWMU. This recommendation was documented in the final SWMU Classification Report (Parsons, 1994), and the EPA and NYSDEC both concurred.

4.7 SEAD-21: Sewage Treatment Plant No. 715

STP No. 715 is located in the north-central to northwestern portion of the Depot, west of the Depot's former north gate where the perimeter fence and the North Patrol Road separate. STP No. 715 is located within a portion of the Depot where the designated future land use is institutional. The approximate location of SEAD-21 is shown on **Figure 1** and in greater detail on **Figure 2**. STP No. 715 is located on land that was transferred by the U.S. Government to SCIDA on February 14, 2000. EPA concurred with the no action designation under the Finding of Suitability to Transfer; DEC abstained.

When the Army operated STP No. 715, it had a permitted wastewater capacity of 300,000 gpd. The design capacity of the facility is 750,000 gpd. The treatment plant began operations in 1956, and the Army ceased operation of the plant on January 1,

1996 when the troop barracks located in the northern portion of the Depot were closed. During the period of its operation, the wastewater treatment plant only received wastewater from domestic sources.

STP No. 715's equipment inventory consisted of (as of January 1, 1996) a grinder pump and comminutor, a primary settling chamber, two rotating biological contractors, a secondary clarifier, sand filters, a sludge holding tank, a sludge digestion tank (old Imhoff tank), and two concrete-lined sludge drying beds with gravel and sand floors (approximately 40 feet by 15 feet each). During its life, sludge produced within STP No. 715 was periodically removed and transported to SEAD-05 where it was stored in the sewage sludge waste piles. The treated effluent from STP No. 715 was discharged to Reeder Creek.

Sewage treatment plants by definition are not SWMUs. The Army proposed SEAD-21 as a No Action SWMU. This recommendation was documented in the final SWMU Classification Report (Parsons, 1994), and the EPA and NYSDEC both concurred.

4.8 SEAD-22: Sewage Treatment Plant No. 314

STP No. 314 was located in the east central part of Depot where the land's future use is designated as planned industrial development. **Figure 1** shows the approximate location of SEAD-22, while **Figure 3** shows the area surrounding SEAD-22 in greater detail.

The historic STP No. 314 was constructed in 1941 and continued to operate until October of 1978. In 1978, STP No. 314 was converted to a lift station that serviced STP No. 4 (SEAD-20). The lift station currently continues to occupy the site of the former STP facility. All components of the original STP No. 314 facility were removed or filled and covered with shale and soil subsequent to the shutdown of the plant. The area is grassy, but several pieces of the former facility's foundation are still evident at the site.

The historic STP No. 314 included a bar screen, an Imhoff tank, a 30-foot diameter trickling filter, a secondary clarifier, a chlorination chamber, and a sludge drying bed. The rated wastewater flow capacity of the plant was 100,000 gpd. The wastewater treated at the historic STP No. 314 originated from domestic-type sources only; industrial wastewater was not treated in the facility. Once treated, the effluent from the STP No. 314 was discharged to Kendaia Creek. There is no evidence that a release of solid or hazardous waste occurred from the STP No. 314.

Sewage treatment plants by definition are not SWMUs. The Army proposed SEAD-22 as a No Action SWMU. This recommendation was documented in the final SWMU Classification Report (Parsons, 1994), the EPA and NYSDEC both concurred.

4.9 SEAD-28: Building 360 – Underground Waste Oil Tanks (2)

SEAD-28 is located in the east-central portion of the Depot where the land's future use is designated as planned industrial development. The general location of this SWMU is shown on **Figure 1**, and presented in greater detail on **Figure 3**. Two underground waste oil storage tanks (Tank IDs: NYS 205 Building 355E and NYS 206 Building 355W) were located in SEAD-28.

Both of the former fiberglass tanks had a capacity of 2,005 gallons. The depth to the top of each tank was 4 feet with overburden conditions being crushed rock. When the two former underground tanks existed, both were used to store waste oil for later use as a fuel supplement in the boiler located in Building 718. The tanks, installed in August 1981, were tested in July 1988, using the "Tegrity Tester." The test results indicated that both tanks were "tight" (compared to a leak rate standard of 0.05 gallons per hour).

During a 1990 site inspection, soil staining was noted in the area surrounding the tanks, and it was presumed that waste oil had been spilled around the tank. However, there was no evidence that these areas constituted more than surficial contamination. Subsequent to the 1990 inspection, SEDA personnel reported that the surficial soils were removed and disposed of appropriately.

In July of 1993, oil tank 355W and its associated pump-out-pipe were found to contain water. At this time, the Army made a decision to remove the tank. Upon removal, no residual oil contamination was observed within the excavation that had filled with groundwater. A small crack was observed on the top of the removed tank, but this may have been caused during excavation. The Army concluded that the water found inside the tank had been poured into it with the used oil and that the water inside the pump-out-pipe was trapped there by a thick oil sludge that was in the bottom of the pipe.

The remaining 2,005-gallon, used oil tank, identified as 355E, remained in service until its removal in December of 1994. At the time of its removal, the tank was not leaking and oil was not found in the excavation.

The Army proposed SEAD-28 as a Low Priority Area of Concern (AOC), and this recommendation was documented in the final SWMU Classification Report (Parsons, 1994). NYSDEC reserved comment and EPA recommended no action for this site.

4.10 SEAD-29: Building 732 – Underground Waste Oil Tank

SEAD-29 is a former 550-gallon, waste-oil underground storage tank (UST) that was used to store waste oil generated from the automotive maintenance shop. The tank was located on the southeast side of Building 732, which is located within the northern portion of the Depot. This portion of the Depot is designated for institutional use. The approximate location of SEAD-29 is shown on **Figure 1**, while the vicinity is shown in greater detail on **Figure 2**.

The tank was originally installed in 1981 and was constructed of fiberglass with galvanized steel piping. The waste oil stored in the tank was used as a fuel supplement in the boilers located in Building 718 (SEAD-35). The Army discontinued the use and removed the tank under the New York UST Program before December 31, 1998 in order to avoid a required regulatory upgrade.

The Army proposed SEAD-29 as a No Action SWMU. This recommendation was documented in the final SWMU Classification Report (Parsons, 1994), and the EPA concurred; NYSDEC reserved comment.

4.11 SEAD-30: Building 118 – Underground Waste Oil Tank

SEAD-30 was a former waste-oil UST that was located on the southern side of Building 118, near the intersection of South Street and Second Avenue in the east central portion of the Depot. This SWMU is located in the portion of the Depot where the future use is planned industrial development. The approximate location of SEAD-30 is shown on **Figure 1**, while the area surrounding this SWMU is shown in greater detail in **Figure 3**.

The tank was installed in 1941 and it was used to store waste automotive oil generated from Depot vehicle maintenance activities. The waste oil stored in the tank was used as a fuel supplement in the boilers located in Buildings 718 (SEAD-35), 121 (SEAD-36) and 319 (SEAD-37). The 550-gallon tank was constructed of steel and it was buried approximately sixteen inches below the surface in native, overburden materials that were grass covered. Galvanized piping was used for the transfer of fluids to and from the tank.

This tank was removed in 1992. At the time of the tank's removal, there was no evidence of any release

around the tank. A NYSDEC representative, who oversaw the removal, did not require any confirmational soil sampling when the excavation was open.

The Army proposed SEAD-30 as a No Action SWMU. This recommendation was documented in the final SWMU Classification Report (Parsons, 1994), and the EPA concurred; NYSDEC reserved comment.

4.12 SEAD-31: Building 117 - Underground Waste Oil Tank

SEAD-31 was a waste-oil UST that was located on the southwest side of Building 117 between Second and Third Avenue. This site is located in the east central portion of the Depot, in an area where the future land use is planned industrial development. The approximate location of SEAD-31 is shown on **Figure 1**, while the area surrounding this SWMU is shown in greater detail in **Figure 3**.

The former underground tank was constructed of fiberglass and was equipped with galvanized steel piping. The tank had a capacity of 2,005 gallons and was buried approximately four feet underground in native soil. The ground surface above the tank was grass covered, and the tank site was surrounded by Building 117 on one side, grass on one side, and asphalt pavement on two sides.

Waste oil was stored in the tank for subsequent use as a fuel supplement in the boilers located at Building 718 (SEAD-35). Previously, it was also used as a fuel supplement in the boilers located in Buildings 319 (SEAD-37) and 121 (SEAD-36). The tank was removed from the ground on October 7, 1999.

The Army proposed SEAD-31 as a No Action SWMU. This recommendation was documented in the final SWMU Classification Report (Parsons, 1994), and was concurred with EPA. NYSDEC reserved comment.

4.13 SEAD-32: Building 718 – Underground Waste Oil Tanks

SEAD-32 is comprised of two waste-oil underground storage tanks (USTs - Tanks A and B). This site is located in an area where the future land use is designated as institutional. The approximate location of SEAD-32 is shown on **Figure 1**, and in greater detail on **Figure 2**. The two underground storage tanks comprising SEAD-32 were included in the property that was transferred by the U.S. Government to SCIDA on February 14, 2000. EPA concurred with the Army's designation of no action under the Finding of Suitability to Transfer; DEC abstained.

Once installed in 1956, the underground tanks of SEAD-32 were primarily used for the storage of No. 6 fuel oil. Tank A (State Identification Number 8-416118-194) had a maximum storage capacity of 40,000 gallons, while Tank B (State Identification Number 8-416118-195) had a maximum storage capacity of 20,000 gallons. With the imposition of RCRA requirements in 1980 – 1981, SEDA altered its historic waste-oil management practices, and tried to recover energy value from waste oil that was generated at the Depot. As such, waste oil was routinely blended with the No. 6 fuel oil whenever bulk (i.e., 7,000-gallon) deliveries occurred. The combined No. 6 fuel/waste oil mixture was used as fuel for space heating and generation of hot water supplies. In 1989, the practice of blending waste and virgin oil in SEAD-32 tanks was discontinued when a new 10,000 gallon dual walled fiberglass waste-oil tank with an interstitial space monitoring system was constructed at Building 718 (SEAD-61).

The Army proposed SEAD-32 as a Low Priority AOC, and this recommendation was documented in the final SWMU Classification Report (Parsons, 1994). NYSDEC reserved comment and EPA recommended no action for the site.

4.14 SEAD-33: Building 121 - Underground Waste Oil Tank

SEAD-33 is located in the eastern central portion of the Depot where the future land use is designated as industrial development. SEAD-33 is comprised of the 30,000-gallon, steel underground oil tank at Building 121. The approximate location of SEAD-33 is shown on **Figure 1**, and in greater detail on **Figure 3**.

Once installed in 1943, the primary use of the tank was for the storage of fuel (primarily No. 6 fuel). With recycling initiatives starting in 1980 – 1981, SEDA altered its historic waste-oil management practices, and tried to recover energy value from waste oil that was generated at the Depot. As such, waste oil was routinely blended with the No. 6 fuel oil whenever bulk (i.e., 7,000-gallon) deliveries occurred. The combined No. 6 fuel/waste oil mixture was used as fuel for space heating and generation of hot water supplies. In 1989, the practice of blending waste and virgin oil in SEAD-33 tanks was discontinued.

The Army proposed SEAD-33 as a Low Priority AOC, and this recommendation was documented in the final SWMU Classification Report (Parsons, 1994). NYSDEC reserved comment and EPA recommended no action for the site.

4.15 SEAD-34: Building 319 - Underground Waste Oil Tanks (2)

SEAD-34 is located in the eastern central portion of the Depot where the future land use is designated as planned industrial development. It is comprised of the two underground oil tanks (Tank A and Tank B) at Building 319. The approximate location of SEAD-34 is shown on **Figure 1**, and in greater detail on **Figure 3**.

Tanks A and B had been in use from 1951 to 1989. Tank A has a maximum storage capacity of 30,000 gallons. Tank B has a maximum storage capacity of 20,000 gallons. Both tanks are constructed of steel. Since 1956, the primary use of the tanks was for the storage of fuel (primarily No. 6 fuel). With recycling initiatives starting in 1980 – 1981, SEDA altered its historic waste-oil management practices, and tried to recover energy value from waste oil that was generated at the Depot. As such, waste oil was routinely blended with the No. 6 fuel oil whenever bulk (i.e., 7,000-gallon) deliveries occurred. The combined No. 6 fuel/waste oil mixture was used as fuel for space heating and generation of hot water supplies. In 1989, the practice of blending waste and virgin oil in SEAD-34 tanks was discontinued.

A visual site inspection has shown that waste oil had been spilled around the tanks' fill pipes. However, there was no visual evidence that these areas constituted more than surficial contamination. Since the visual site inspection, SEAD personnel have reported that the surficial soils have been removed and disposed of appropriately.

The Army proposed SEAD-34 as a Low Priority AOC, and this recommendation was documented in the final SWMU Classification Report (Parsons, 1994). NYSDEC reserve judgment and EPA recommended no action for the site.

4.16 SEAD-35: Building 718 - Waste Oil-Burning Boilers

SEAD-35 consisted of three oil-fired boilers that are located in Building 718, each of which is designed to burn either fuel oil or waste-oil/fuel oil mixtures. Building 718 is located in the north-central portion of the Depot in an area where the land use is designated as institutional. Building 718, and its contents, was included in the property that was transferred by the U.S. Government to SCIDA on February 14, 2000. EPA concurred with the Army's no action description for the site under the Finding of Suitability to Transfer; DEC abstained. The approximate location of SEAD-35 is shown on **Figure 1**, and in greater detail on **Figure 2**.

The three boilers units were used to produce heat that was used for space heating and for the

production of hot water. Each of the boilers is rated at a 10 million British Thermal Unit per hour (MBtu/hr) capacity, with a stated combustion rate of 15.5 gallons per hour (gph). Between 1982 and 1989, the Army commonly used a mixture of No. 6 oil and waste oil as the fuel for these boilers. After 1989, SEDA discontinued use of waste oil as a fuel supplement due to difficulties that were encountered during the preparation of the waste oil/No. 6 oil blends to yield proper combustion characteristics. Therefore, after 1989 only No. 6 fuel oil was burned in the three boilers.

The Army proposed SEAD-35 as a No Action SWMU. This recommendation was documented in the final SWMU Classification Report (Parsons, 1994), and the EPA and NYSDEC both concurred.

4.17 SEAD-36: Building 121 - Waste Oil-Burning Boilers

Building 121 contains two boilers capable of burning waste-oil and fuel oil mixtures. Building 121 is located in the east central portion of the Depot in an area of the site where the future land use is planned industrial development. The approximate location of Building 121 (SEAD-36) is shown on **Figure 1**, and the area surrounding this SEAD is shown in greater detail on **Figure 3**.

The boilers are rated at 6.6 MBtu/hr capacity and the stated combustion rate of oil for the two waste-oil fired units is 10.6 gph. A waste oil/No. 6 oil blend was burned in the oil-fired boilers between 1982 and 1989.

The boilers were originally used to produce heat that was used for space heating and the production of hot water. There is no information available to indicate that waste oil was released from either of the burners during the period of their use. The boilers are closed, and no longer burn a waste oil/fuel oil blend. No. 6 oil was the only fuel burned in the two oil-fired boilers at the time of closure. 1998

The Army proposed SEAD-36 as a No Action SWMU. This recommendation was documented in the final SWMU Classification Report (Parsons, 1994), and the EPA and NYSDEC both concurred.

4.18 SEAD-37: Building 319 - Waste Oil-Burning Boilers

Building 319 contains two boilers (i.e., Boiler A and B) that are capable of burning waste oil/fuel oil blends. Building 319 (SEAD-37) is located in the east central portion of SEDA in a portion of the Depot where the future land use is designated as planned industrial development. The approximate location of SEAD-37 is shown on **Figure 1**, and the area surrounding this SEAD is shown in greater detail in **Figure 3**.

Boilers A and B have rated capacities of 12.0 and 16.1 MBtu/hr, respectively. Each boiler has a combustion rate of 32.9 gph of fuel. Between 1982 and 1989, both of these units used a waste oil/No. 6 fuel oil mixture as fuel for space heating and hot water production. There is no information available to indicate that waste-oil was released from either of the boilers during the time of their use with waste oil. The boilers are closed, and no longer burn a waste oil/fuel oil blend. No. 6 oil was the only fuel burned in the two oil-fired boilers at the time of closure.

The Army proposed SEAD-37 as a No Action SWMU. This recommendation was documented in the final SWMU Classification Report (Parsons, 1994), and the EPA and NYSDEC both concurred.

4.19 SEAD-42: Building 106 - Preventative Medicine Laboratory

According to information provided in a U.S. Army Toxic and Hazardous Materials Agency (USATHAMA) published site inspection report (USATHAMA, 1980) for SEDA, Building 106 once housed a Preventative Medicine Laboratory. This building is located in the east, central portion of SEDA, in the area designated for planned industrial

development. The approximate location of SEAD-42 is shown on **Figure 1**, and in greater detail on **Figure 3**.

Building 106 is a brick building measuring 167 feet long by 63 feet wide that was constructed in approximately 1975. Reportedly, the Preventive Medicine Laboratory was located in the northwest section of Building 106. This laboratory is believed to have measured 12 feet by 28 feet in size. Based on information provided in the 1980 USATHAMA report, clinical laboratory work and potable water analyses were performed in the laboratory.

The Army proposed SEAD-42 as a No Action SWMU. This recommendation was documented in the final SWMU Classification Report (Parsons, 1994), and the EPA and NYSDEC both concurred.

4.20 SEAD-47: Buildings 321 And 806 - Radiation Calibration Source Storage

Building 321 is located in the east, central portion of SEDA, in land that is designated for future use as planned industrial development. Building 806 is located in the north central portion of the Depot, in land whose future land use is designated as conservation/recreational land. **Figure 1** shows the location of the two buildings comprising this SWMU. The location of Building 321 is displayed in greater detail on **Figure 3**, while the location of Building 806 is shown in greater detail on **Figure 2**.

Building 321 measures approximately 200 feet long by 60 feet wide. The building's floor is concrete and the walls are concrete block construction. The building has two docks each measuring approximately 200 feet long by 6 feet wide. The docks are located on the east and west sides of the building.

Building 806 is a steel structure that measures approximately 100 feet long by 40 feet wide. This building has a concrete floor. This building is located in the "Q" or the former special weapons area.

Both of these buildings were sites where radiation calibration sources were stored. Radiation sources are disks that contain a known, small amount of radioactive material that is used to calibrate measurement equipment such as FIDLR, Gieger counters and other detectors. A license under the NRC is not required to possess, use and store these sources. Unneeded sources were transferred to other government agencies upon facility closure.

Stored calibration sources included cobalt-60, uranium-235, radium-226, strontium-90/yttrium-90, and plutonium-239 isotopes. Calibration sources are no longer present in either of the buildings. Sources were removed from Building 806 in the 1991 to 1993 time frame, while sources were removed from Building 321 in the 1997 to 1998 time period.

These calibration labs generated no hazardous wastes. The only solid wastes generated were office paper and products and candy wrappers.

The Army proposed SEAD-47 as a No Action SWMU. This recommendation was documented in the final SWMU Classification Report (Parsons, 1994), and the EPA and NYSDEC both concurred.

4.21 SEAD-49: Building 356 - Columbite Ore Storage Area

SEAD-49 is located in the southeastern portion of the Depot in a parcel of land whose future use is designated as warehousing space. The approximate location of Building 356 is shown on **Figure 1**. Greater detail of the area surrounding Building 356 is provided on **Figure 5**.

Building 356 is a concrete block warehouse with concrete floors. The warehouse measures 200 feet wide by 1,000 feet long and is divided into 5 separate cells. Each cell is separated from the next by a concrete masonry firewall.

Columbite ore is a raw material, and not a waste. It is a mixture of the oxides of iron, manganese,

niobium, and tantalum. Columbite ore was stored in Buildings 324, 356, and 357 at SEDA. Although neither niobium nor tantalum has any naturally occurring radioactive isotopes, radium-226 and thorium-232, which are naturally occurring radioactive material, may have been present in the mixture as impurities. Available information indicates that the Columbite ore was stored in Building 324 from 1954 to 1973, Building 357 from 1954 to 1984 – 1985, and Building 356 from 1984 – 1985 to 1993. The ore was originally kept in burlap bags, but later it was stored in 55-gallon drums. After the ore was moved from one building to the next, the former storage location was swept clean. In May 1993, all of the Columbite ore (5,284 drums) was transferred from Building 356 to a Defense Logistics Agency (DLA) facility in Binghamton, New York. Subsequent to this time, Building 356 was swept cleaned. The NYSDEC performed a radioactive survey of the building after it was swept clean and found no concerns.

The Army proposed SEAD-49 as a No Action SWMU. This recommendation was documented in the final SWMU Classification Report (Parsons, 1994), and the EPA concurred; NYSDEC reserved comment pending completion of its testing.

4.22 SEAD-51: Herbicide Usage Area - Perimeter of High Security Area

Herbicides were applied to a 50-foot wide strip of land that surrounds the entire Exclusion Area (the "Q") that is located at the northern end of SEDA. The zone that was treated with herbicide is in the immediate vicinity of three security fences that encompass the Exclusion Area. This area encompasses land whose future land use is designated as conservation/recreational. The approximate location of SEAD-51 is shown on **Figure 1**. Greater detail of the area surrounding SEAD-51 is provided on **Figure 4**.

The herbicide treatment was used to maintain clear line-of-sight in the area of the security fence, and to eliminate vegetation that may overgrow and breach the security of the fences. SEDA no longer applies herbicide to this area and this practice was discontinued in roughly 1996. Since terminating the herbicide application, weeds and vegetation have begun to recover the area surrounding the security fences. Herbicides previously used in the vicinity of the security fence included Borocil (a soil sterilant), 2,4-D and 2,4,5-T.

The application of herbicides was a planned operation and personnel who were licensed to apply the material completed the application. Review of available information indicates that there is no evidence of unplanned applications or releases of herbicides in the area of the Exclusion Area security fences.

The use of herbicides and pesticides under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) is statutorily exempt from regulation under CERCLA. This is due to the purpose and nature of residuals of the herbicides and pesticides to act or be used for the desired effects.

The Army proposed SEAD-51 as a No Action SWMU. This recommendation was documented in the final SWMU Classification Report (Parsons, 1994), and the EPA concurred; NYSDEC reserved.

4.23 SEAD-53: Munitions Storage Igloos

The Munitions Storage Igloos are located within the central portion of the SEDA. The igloo area encompasses a large portion of the Depot, spanning a zone that measures roughly 4.5 miles north-to-south and 1 mile, east-to-west. The planned land use for all of this area is designated as conservation/recreational land. The approximate location of SEAD-53 is shown on **Figure 1**. Greater detail of the area surrounding SEAD-53 is provided on **Figures 2** through **5**.

There are 508 igloos associated with this SWMU and located within the Depot. These igloos are spaced

along 45 parallel access roads that run east-to-west throughout the interior portion of the Depot, starting inside the Special Weapons Storage Area at the north end to within roughly one mile of the southern boundary of the Depot. Each of the munitions storage igloos is constructed of reinforced concrete and measures approximately 26 feet 8 inches wide by 81 feet long by 13 feet high. All of the igloos are covered with a minimum of two feet of soil that are covered with an extensive growth of grasses, weeds, and small shrubs. When built, each of the igloos was oriented in a north-to-south configuration, such that the entry door to each individual igloo faced north. Each igloo entry door opens onto a concrete pad that was use for munitions off-loading, transfer and loading operations. In addition to the entry door, each igloo has one roof vent, and two drainage openings at ground level (one on the northwest, the other on the northeast corner).

Munitions and other munition containing material were stored in the igloos between the time of Depot inception (1941) and the termination of the Depot mission (September 30, 1999). As part of the termination of SEDA's mission, the Army inspected each igloo and prepared a certification that all munitions and associated materials were removed. A copy of the individual closeout certificates for each of the igloos is available in the office of the BRAC Environmental Coordinator.

At present, 120 certified igloos at SEAD are subject to continuing investigations as part of the termination of Nuclear Regulatory Commission (NRC) licenses. These igloos are identified in **Table 14**. Eleven igloos, designated as E0801 to E0811, located at the extreme southern end of the Munitions Storage Igloos area are designated as SEAD-48, ~~and not part~~ of this SWMU site. These 11 igloos are currently subject to additional investigations as part of the SEAD-48 close-out. Igloos designated as A0201, A0316, A0317, and A0508 are within SEAD-12 and not part of this site.

Ammunition/munitions or pitchblende ore stored in igloos are not wastes. The E800 row of igloos underwent a cleanup for radioactive concerns in 1986, and the NRC concurred with this action and closed out the E800 row under the Formerly Used Defense Sites program.

The Army performed a Depot-wide ordnance investigation following the CERCLA process. This involved an Archive Search Report which involved site visits, interviews, and archival data searches related to any historical operations, and an Ordnance and Explosives Engineering Evaluation and Cost Assessment (OE EECA) which further investigated any potential ordnance risks based upon the Archive Search Report. This effort included the ammunition igloos and the property around the igloos. This investigation determined that there were no ordnance issues in and around the igloos based upon historical information and the OE EECA surveys.

The Army proposed SEAD-53 as a No Action SWMU. This recommendation was documented in the final SWMU Classification Report (Parsons, 1994), and the EPA and NYSDEC both concurred.

4.24 SEAD-55: Building 357 - Tannin Storage

Building 357 is located in the southwestern portion of SEDA, in land where the planned future use is warehousing. The approximate location of SEAD-55 is presented on **Figure 1**, and greater detail of the area is provided on **Figure 5**.

Building 357 is a concrete block warehouse built on a concrete foundation that measures 200 feet wide by 1,000 feet long and consists of five (5) separate sections. The individual sections are divided by a concrete masonry firewall.

Building 357 was used for storage of Columbite ore between the dates of 1954 and 1984 – 1985 when the ore was transferred to Building 356 (SEAD-49). Subsequent to its use for storage of Columbite ore, the section was swept clean of all residues. Building 357 was also used for storage of Tannin between the

dates of approximately 1978 and roughly 1994. Tannin has many industrial uses, such as a chemical treatment additive for its boiler plant water. The Army stored Tannin as a dry solid in bags, and the bags were stored in Section 2 of Building 357 on pallets. Section 2 of Building 357 was swept clean once storage of Tannin ceased.

Tannin is not a hazardous substance under CERCLA, RCRA, DOT, or other regulatory statute. The Tannin stored at Seneca Army Depot was stored as a material and not a waste.

The Army proposed SEAD-55 as a No Action SWMU. This recommendation was documented in the final SWMU Classification Report (Parsons, 1994), and the EPA and NYSDEC both concurred.

4.25 SEAD-60: Oil Discharge Area Adjacent to Building 609

SEAD-60 is located in the southeastern portion of the Depot in a portion of the site where the future land use is designated as Prison. The approximate location of this SWMU is identified on **Figure 1**, and is shown in greater detail on **Figure 5**. The area encompassing SEAD-60 was transferred by the Army to the State of New York, and is now included in the land that comprises the grounds of New York State Department of Correctional Services' Five Points Correctional Facility.

Evidence of a release of oil in this area was first observed in 1989. The extent of the noted release area measured approximately 25 feet long by 10 feet wide and this area was adjacent to Building 609. SEDA personnel reported that the spill area was caused by a release from a pipe that was located inside of Building 609.

A removal action (RA) was undertaken at SEAD-60. On March 3 and 4, 1999 approximately 150 cubic yards of soil from the release area were excavated and stockpiled at the Deactivation Furnace (SEAD-17). This soil was subsequently used as the feedstock during a low temperature thermal desorption (LTTD) demonstration completed at the Deactivation system. This demonstration occurred in August and September of 2000. The RA successfully resulted in the elimination of all potential contamination once believed to be present. The performance and completion of the RA was documented in a letter to Mr. Thomas Grasek at the Depot issued by NYSDEC Division of Environmental Remediation (Scott Rodabaugh, P.E.), dated July 13, 1999.

The Army proposed SEAD-60 as a Low Priority AOC. This recommendation was documented in the final SWMU Classification Report (Parsons, 1994), and the NYSDEC concurred. No record exists of the EPA's position.

4.26 SEAD-61: Building 718 - Underground Waste Oil Storage Tank

SEAD-61 consisted of an underground waste oil storage tank that is located near Building 718 in the north-central portion of the Depot. This SWMU is located on land that is designated for institutional use. The approximate location of this SWMU is shown on **Figure 1**, while additional detail of the area is provided on **Figure 2**. The underground storage tank that comprises SEAD-61 was included in the property that was transferred by the U.S. Government to SCIDA on February 14, 2000. EPA concurred with the Army's transfer of this land under the Finding of Suitability to Transfer; DEC abstained.

The underground storage tank was previously used for the storage of waste oil prior to its burning in the adjacent boiler plant, located in Building 718 (SEAD-35). The tank is double-wall fiberglass construction and has a storage capacity of 10,000 gallons. As designed and constructed, the tank meets the specifications of 6 NYCRR Part 614. The tank was installed in 1989.

The Army proposed SEAD-61 as a No Action SWMU. This recommendation was documented in

the final SWMU Classification Report (Parsons, 1994), and the EPA and NYSDEC both concurred.

4.27 SEAD-64A: Garbage Disposal Area

SEAD-64A is located in the east-central portion of SEDA. The site is bounded to the north by a square storage pad, to the east by the SEDA railroad tracks beyond which is the elevated fire-training pad (SEAD-26), and to the south and west by undeveloped grassland. This SWMU is located on land that is designated for warehouse use. The approximate location of this SWMU is shown on **Figure 1**, while additional detail of the area is provided on **Figure 5**.

SEAD-64A was used during the period from 1974 to 1979 when the on-site solid waste incinerator was not in operation. The types of wastes disposed of at the site are suspected to be primarily household items, although according to the SWMU Classification Report metal drums and other industrial items were reportedly disposed at this site. SEDA personnel also reported the operation of small burning pits within this area when it was being landfilled. Debris (asphalt, wooden boards, concrete slabs, and corrugated drain pipe) was visible on the surface, though the site is mostly covered with dense vegetation.

The Army proposed SEAD-64A as a Low Priority AOC. This recommendation was documented in the final SWMU Classification Report (Parsons, 1994), and the EPA and NYSDEC both concurred.

4.28 SEAD-64B: Garbage Disposal Area

The disposal area at SEAD-64B is located immediately north of Ovid Road near Building 2086 in the southern end of SEDA. This SWMU is located on land that is designated for conservation/recreational use. The approximate location of this SWMU is shown on **Figure 1**, while additional detail of the area is provided on **Figure 5**.

SEAD-64B was used for garbage disposal during the time period from 1974 to 1979 when the solid waste incinerator was not in operation. The types of waste disposed of at the site are suspected to be primarily household items, although according to the SWMU Classification Report, metal drums and other industrial items were reportedly disposed of at the site. Very little surface debris, consisting mainly of household items, was observed in the northwestern portion of the site.

The Army proposed SEAD-64B as a Low Priority AOC. This recommendation was documented in the final SWMU Classification Report (Parsons, 1994), and the EPA and NYSDEC both concurred.

4.29 SEAD-64D: Garbage Disposal Area

SEAD-64D covers a large area located between West Patrol Road and the SEDA railroad tracks along North-South Baseline Road in the southwestern portion of SEDA. This SWMU is located on land that is designated for conservation/recreational use. The approximate location of this SWMU is shown on **Figure 1**, while additional detail of the area is provided on **Figure 5**.

Portions of this SEAD-64D were used for garbage disposal from 1974 to 1979 when the SEDA solid waste incinerator was not operational. The types of wastes that were disposed of at the site are suspected to be primarily household items, although according to the SWMU Classification Report metal drums and other industrial wastes were also disposed at this site. Several disposal areas are present in the southern, south-central and east-central portions of the site and can be identified by the surface expression of metal or debris. In the southern portion of the site an elongated east-west trending mound (approximately 75 feet long) is reported to contain trash and assorted debris. Immediately to the north and east of this elongated mound are three 25-foot to 30-foot diameter depressions that are 2 to 4 feet deep.

The Army proposed SEAD-64D as a Low Priority

AOC. This recommendation was documented in the final SWMU Classification Report (Parsons, 1994), and the EPA and NYSDEC both concurred.

4.30 SEAD-65: Acid Storage Areas

SEAD-65 consists of three separate areas, each of which is located near the central western border of the Depot. The three areas are located in the portion of SEDA that is designated as conservation/recreation land. The approximate locations of these three areas are shown on **Figure 1,** while additional detail of the area is provided on **Figure 5**.

SEAD-65A measures approximately 120 feet by 130 feet and is the most southerly situated of the three storage areas. During a site inspection conducted on November 27, 1990, portions of a concrete foundation were observed in the area. Otherwise, the area was covered with vegetation including scrub brush and weeds.

SEAD-65B measures approximately 65 feet by 100 feet and is the centrally located of the three areas. Remnants of a concrete foundation were also found at this site during the site inspection. The area is primarily covered with weeds and wild grass vegetation.

SEAD-65C is approximately 50 feet by 100 feet in size and is the most northerly located of the three former storage areas. A flagpole and a concrete pad were found in this area on the day of inspection (November 27, 1990); however, like the other two portions of this SWMU, the area was found to be predominantly overlain by natural scrub brush and grass vegetation.

Each of these areas was reportedly used for the storage of acids, although no information is available to conclusively determine whether acid storage was actually performed in these areas. Additionally, if acid storage did occur in these areas, no specific information is known relative to the dates when such storage occurred.

The Army proposed SEAD-65 as a No Action SWMU. This recommendation was documented in the final SWMU Classification Report (Parsons, 1994), and the NYSDEC concurred; EPA reserved comment.

4.31 SEAD-68: Building S-335 Old Pest Control Shop

SEAD-68 is comprised of a 100-foot by 40-foot single story wooden building, the Old Pesticide Control Shop, which is located in the east-central portion of SEDA. There are doors located on the west, north and east sides of the building. A large garage (bay) door entrance is on the southern end of the building. An asphalt and gravel (i.e., crushed shale) area that is used for vehicle parking and staging is located to the north and east of the building. This SWMU is located on land that is designated for industrial development land use. The approximate location of these three areas is shown on **Figure 1,** while additional detail of the area is provided on **Figure 3**.

It has been reported that a pest control shop was once located in Building S-335. The building is currently closed. No documented or visual evidence of a release has been discovered.

The Army proposed SEAD-68 as a Low Priority AOC. This recommendation was documented in the final SWMU Classification Report (Parsons, 1994), and was the NYSDEC concurred; EPA reserved comment.

5 SITE INVESTIGATIONS AND STUDIES

5.1 SEAD-07: Shale Pit

A site inspection was conducted at the Shale Pit (SEAD-07) on September 13, 1990 and indicated that approximately 50 percent of the pit was filled with construction debris. No environmental sampling was performed at SEAD-07.

5.2 SEAD-09: Old Scrap Wood Site

During the Expanded Site Inspection for Eight Moderately Low Priority AOCs beginning in February 1994, geophysics surveys including seismic, Electromagnetic (EM), and ground penetrating radar (GPR) surveys were conducted at SEAD-09. In addition, nine soil samples and two groundwater samples were collected from SEAD-09 and analyzed for Target Compound List (TCL) volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides/polychlorinated biphenyls (PCBs), Target Analyte List (TAL) metals, cyanide, and total petroleum hydrocarbons. The results of these analyses can be found in Appendix A of the Final Decision Document – Mini Risk Assessment, Seneca Army Depot Activity (Parsons, May 2002), and are summarized in **Tables 2** and **3** at the end of this document.

The results of the analysis indicate that VOCs, SVOCs, pesticides, PCBs, and metals were detected in soil. Concentrations of several PAHs (benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, and dibenz(a,h)anthracene) and metals (arsenic, calcium, lead, mercury, sodium, and zinc) exceeded the respective NYSDEC's Technical and Administrative Guidance Memorandum #4046 (TAGM) recommended soil cleanup objectives. TPH and metals were detected in groundwater samples collected from SEAD-09. The iron and sodium concentrations exceeded NYSDEC's Class GA groundwater standards and the aluminum and manganese concentrations exceeded the federal Secondary Drinking water levels.

A mini risk assessment was conducted for SEAD-09 and the total cancer risks are below or within the EPA target ranges for all receptors under an industrial land use scenario (i.e., industrial worker, construction worker, worker at on-site day care center, and child at on-site day care center). Likewise, the total non-cancer hazard indices from all exposure routes are less than one for all receptors. The results of total cancer risk and total non-cancer hazard index can be found in **Table 3.5-1** of the Final Decision Document – Mini Risk Assessment, Seneca Army Depot Activity (Parsons, May 2002), and are summarized in **Table 4** at the end of this document.

In addition, risks to residential receptors (i.e., residential adult and residential child) have been evaluated. The total cancer risks are below or within the EPA target ranges for all receptors. Likewise, the total non-cancer hazard indices from all exposure routes are less than one for all receptors. The results of total cancer risk and total non-cancer hazard index can be found in **Table V-3** of the Final Decision Document – Mini Risk Assessment, Seneca Army Depot Activity (Parsons, May 2002), and are summarized in **Table 4** at the end of this document.

5.3 SEAD-10: Scrap Wood Pile

Samples of the ash produced by the combustion of scrap wood from fire training exercises in SEAD-10 were collected on September 29, 1992 and analyzed for TCLP constituents prior to their disposal by Waste Management – Syracuse NY. A complete copy of the results obtained from this analysis is provided in Appendix A of the Final Decision Document, Twenty-Two No Further Action Sites, Seneca Army Depot Activity (Parsons, 2002), and the results are summarized in **Table 5** at the end of this document. The results of the analysis indicate that the measured levels did not exceed the regulatory limits (i.e., the Toxicity Characteristic levels defined in 40 CFR261.24).

5.4 SEAD-18: Building 709 - Classified Document Incinerator

The ash recovered from the incinerator was tested for Extraction Procedure (EP) Toxicity leaching potential via Method SW-846 1310A prior to disposal, and the analytical results were acceptable for disposal at permitted local landfills during the 1980's and early 1990's.

5.5 SEAD-19: Building 801 - Former Classified Document Incinerator

The ash recovered from the incinerator was tested for EP Toxicity leaching potential prior to disposal, and the analytical results were acceptable for disposal at permitted local landfills during the 1980's and early 1990's.

5.6 SEAD-20: Sewage Treatment Plant No. 4

No site investigations have been conducted within or in the immediate vicinity of STP No. 4, SEAD-20.

5.7 SEAD-21: Sewage Treatment Plant No. 715

A review of historic operational records maintained by the Army for this facility indicated that violations of the facility's SPDES permit were recorded in 1986 when excessive levels of biological oxygen demand and total suspended solids were measured in the plant's effluent. No other SPDES violations were recorded for the facility prior to its closure in 1996. No site investigations have been conducted within or in the immediate vicinity of STP No. 715, SEAD-21. STP No. 715 is located on land that was transferred by the U.S. Government to SCIDA on February 14, 2000. EPA concurred as no action under the Finding of Suitability to Transfer; DEC abstained.

5.8 SEAD-22: Sewage Treatment Plant No. 314

No site investigations have been conducted within or in the immediate vicinity of STP No. 314, SEAD-22.

5.9 SEAD–28: Building 360 - Underground Waste Oil Tanks (2)

Following the removal of tank 355E in 1994, a confirmatory sample was taken from the excavation. The sample was a composite soil sample of the bottom, north, south, east, and west sides of the excavation. The sample was analyzed for SVOCs. The results can be found in Appendix C, Table C-1 of the Final Decision Document – Mini Risk Assessment, Seneca Army Depot Activity (Parsons, May 2002), and are summarized in **Table 6** at the end of this document.

No SVOCs were detected in the composite sample.

5.10 SEAD-29: Building 732 - Underground Waste Oil Tank

Evidence of possible surficial releases near SEAD-29 from tank filling operations was observed during a site inspection that was conducted in 1990. The tank was pressure tested on September 23, 1992 when it received a rating of +0.012 gallons per hour and was deemed to be tight. The tank was closed on July 13, 1993. At the time of closure, the contents of the tank were pumped-out, leaving no more than 1 inch of used oil in the bottom. The Army retained a private contractor to remove the tank prior to December 31, 1998. The tank was removed from the ground and all discolored surficial soil surrounding the former tank was removed under the State of New York's UST Program.

5.11 SEAD-30: Building 118 - Underground Waste Oil Tank

The tank was removed in 1992, and at the time of its removal, there was no evidence of any release around the tank. A NYSDEC representative, who oversaw the removal, did not require any confirmational soil sampling when the excavation was open.

5.12 SEAD-31: Building 117 - Underground Waste Oil Tank

The former 2,005-gallon waste oil tank that comprised SEAD-31 was last tightness tested in 1996 and according to SEDA personnel, the tank passed the 1996 test. The tank was removed on October 7, 1999. The site was closed on [to be determined].

5.13 SEAD-32: Building 718 - Underground Waste Oil Tanks

A limited site investigation was performed in SEAD-32 in 1994 to investigate possible releases of No. 6/waste oil to the soil and groundwater. Two soil borings and two groundwater wells were installed and sampled as part of this investigation.

The results of the soil sampling indicated that two low levels of total petroleum hydrocarbons (TPH – 90 and 81 parts per million (ppm)), and one hit of methylene chloride were found in soil. No other volatile organic compounds were detected in the samples analyzed. The single value reported for methylene chloride (1 microgram per kilogram (ug/Kg)) was believed to be a laboratory artifact and is below the TAGM recommended soil cleanup objective of 100 ug/Kg.

The results of the groundwater investigation indicate that no volatile organic compounds were detected in groundwater, while one well contained TPH (MW32-1 at 0.69 ppm). There is no TAGM recommended groundwater cleanup objective for TPH.

Refer to Appendix B of the Final Decision Document, Twenty-Two No Further Action Sites, Seneca Army Depot Activity (Parsons, 2002) for full data tables from this sampling event. Summary tables from this event are provided as **Tables 7** and **8**.

5.14 SEAD-33: Building 121 - Underground Waste Oil Tank

A sampling program was performed in 1994 at SEAD-33. One boring was advanced downgradient of the tank location and one was advanced at the upgradient location. The borings were continuously sampled and screened in the field with an organic vapor meter (OVM). One soil sample from each boring was submitted for TCL VOC and TPH analyses. A monitoring well was installed in each boring. At the time of the sampling, no groundwater was present in the well and thus no groundwater samples were obtained. Soil sample results can be found in **Appendix E, Table E-1** of the Final Decision Document – Mini Risk Assessment, Seneca Army Depot Activity (Parsons, May 2002), and are summarized in **Table 9** at the end of this document.

No VOCs were detected in the soil boring samples. TPH was detected at 470 milligrams per kilogram (mg/Kg) in one of the borings at a depth of 4 to 6 feet below grade and 78 mg/Kg in the other boring at a depth of 2-4 ft below grade. There is no TAGM recommended soil or groundwater cleanup objective for TPH.

5.15 SEAD-34: Building 319 - Underground Waste Oil Tanks (2)

A sampling program was performed at SEAD-34 in 1993. One boring was advanced downgradient of the two tank locations and a second was advanced upgradient of the tank locations. The borings were continuously sampled and screened in the field for VOC with an organic vapor measuring-device (OVM). One soil sample was collected from each boring. A monitoring well was installed in each boring and one groundwater sample was obtained from each well. Both soil and groundwater samples were analyzed for TCL VOCs and TPH. Results of the chemical analyses can be found in **Appendix F** of the Final Decision Document – Mini Risk Assessment, Seneca Army Depot Activity (Parsons, May 2002), and are summarized in **Table 10** at the end of this document.

No VOCs were detected in the soil or groundwater samples. TPH was detected in the soil samples and the maximum concentration was 93 mg/kg. TPH was not detected in the groundwater samples. There is no TAGM recommended soil or groundwater cleanup objective for TPH

5.16 SEAD-35: Building 718 - Waste Oil-Burning Boilers

No site investigations have been conducted at SEAD-35, the former Waste Oil Burning Boilers in

Building 718.

5.17 SEAD-36: Building 121 - Waste Oil-Burning Boilers

No site investigations have been conducted at SEAD-36, the former Waste Oil Burning Boilers in Building 121.

5.18 SEAD-37: Building 319 - Waste Oil-Burning Boilers

No site investigations have been conducted at SEAD-37, the former Waste Oil Burning Boilers in Building 319.

5.19 SEAD-42: Building 106 - Preventative Medicine Laboratory

A site inspection and interview was performed at Building 106 on November 28, 1990 and the results of this inspection/interview were unable to confirm the accuracy of the prior information that indicated that a Preventative Medicine Laboratory existed. Building personnel stated that they were unaware of this laboratory. They further stated that the laboratory used for clinical analyses was not the area shown as the Preventive Medicine Laboratory on historic construction drawings, but was an area located southeast and identified as the Clinical Analysis Laboratory. They also stated that potable water analyses were not conducted in the building, as samples collected for this purpose at the Depot were shipped to Fort Drum for analysis.

5.20 SEAD-47: Buildings 321 and 806 - Radiation Calibration Source Storage

An area including Building 806 is currently being investigated by the Army under the SEAD 12 and SEAD-63 Project Scoping Plan (Parsons, June 1998). As part of this work, detailed investigations of SEAD-12 (Building-804 and associated Radiological Burial Site) including geophysical investigations (1996); radiological scans and surface water and sediment sampling (1997); surface and subsurface soil sampling and duct and drain investigations (1998); and building wipes and shallow soil sampling (1999) were completed. Wipe samples of the floor drains and vents in Building 806 were collected and results of these samples indicated no radiological measurements above detection limits. Tabulated results from the wipe samples and of the radiological scanning are provided in **Table 2-2** of the Draft Final Decision Document, Twenty-Six No Further Action Sites, Seneca Army Depot Activity (Parsons, 2001), and are summarized in **Table 11** at the end of this document.

In addition, in 2001, as part of the RI/FS for SEAD-12, a radiological survey was conducted at Building 806. The radiological survey performed using Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) protocols. The survey findings were based on building guideline values, referred to in MARSSIM as Derived Concentration Guideline Levels (DCGLs), which are defined as residual levels of radioactive material that corresponds to allowable radiation dose standards and are developed based on site- specific release criteria. The release criteria developed for SEAD-12 is based on the NYSDEC TAGM of 10 mrem/yr as an acceptable dose equivalent exposure. The radiological survey included alpha, beta, and gamma direct and scanning measurements, exposure rate measurements, radon surveys, gross alpha/beta/ gamma smear samples, tritium smear samples, gamma spectroscopy, and material sampling. Based on the investigation results, it was determined that Building 806 met the release criterion demonstrating compliance with the regulations. Results of the findings can be found in the Final Radiological Survey Report- SEAD-12 (Parsons, March 2003) and in the SEAD-12 RI Report (Parsons, February 2002).

Radiological surveys were conducted at Building 321 on 10/16/1997, 10/22/1997, and 10/28/1997 and no readings were found above background level.

5.21 SEAD-49: Building 356 - Columbite Ore Storage Area

Personnel of NYSDEC and NYSDOH performed a radiological survey of SEAD-49 (including Buildings 324, 356, and 357) in June of 1993, approximately two weeks after the Columbite ore had been removed. The results of these surveys are presented in Appendix C of the Final Decision Document, Twenty-Two No Further Action Sites, Seneca Army Depot Activity (Parsons, 2002), and are summarized in **Table 12** at the end of this document. Based on these results, NYSDEC personnel recommended a "No Action" classification for SEAD-49.

5.22 SEAD-51: Herbicide Usage Area - Perimeter of High Security Area

In 1983, a testing program was conducted to evaluate the distribution of herbicides in various components of the environment at SEAD-51. The goal of this testing was to assess potential exposure to Army personnel who were installing security systems within the security fenceline that surrounded the Special Weapons Storage Area. The analysis results for the 1983 survey are shown in **Table 2-3** of the Draft Final Decision Document, Twenty-Six No Further Action Sites, Seneca Army Depot Activity (Parsons, 2001), and are summarized in **Table 13** at the end of this document.

No herbicides were found in the air at the time of sample collection. Of the sixteen soil samples collected, only three contained herbicides (2,4-D: 0.04 ppm, 0.078 ppm, and 0.055 ppm; 2,4,5-T: 0.008 ppm and 0.011 ppm). EPA's health-based criteria for 2,4-D and 2,4,5-T in soils are 800 ppm and 200 ppm, respectively. The NYSDEC recommended clean-up criteria level is 0.5 ppm for 2,4-D and 1.9 ppm for 2,4,5-T. Thus, the concentrations detected in soils in 1983 were at least an order of magnitude below the recommended criteria for soils.

5.23 SEAD-53: Munitions Storage Igloos

Munitions and other supplies were stored in the igloos between the time of Depot inception (1941) and the termination of the Depot mission (September 30, 1999). Ammunition/munitions or pitchblende ore stored in igloos is not waste. As part of the termination of SEDA's mission, the Army inspected each igloo to ensure that all munitions and components had been removed and prepared a certification of removal for each individual structure. A copy of the individual closeout certificates for each of the igloos is available in the office of the BRAC Environmental Coordinator.

The Army performed a Depot-wide ordnance investigation following the CERCLA process. This involved an Archive Search Report which involved site visits, interviews, and archival data searches related to any historical operations, and an Ordnance and Explosives Engineering Evaluation and Cost Assessment (OE EECA) which further investigated any potential ordnance risks based upon the Archive Search Report. This effort included the ammunition igloos and the property around the igloos. This investigation determined that there were no ordnance issues in and around the igloos based upon historical information and the OE EECA surveys.

5.24 SEAD-55: Building 357 - Tannin Storage

Personnel of NYSDEC and NYSDOH performed a radiological survey of Building 357 as part of the investigation of former Columbite ore storage facilities at SEDA. The results of these surveys are presented in Appendix C of the Final Decision Document, Twenty-Two No Further Action Sites, Seneca Army Depot Activity (Parsons, 2002), and are summarized in **Table 15** at the end of this document.

No evidence or records of a release of Tannin in Building 357 were observed or found. As Tannin was received and stored in bags stacked together in wooden frames, it is unlikely that a release could have occurred during storage. If a bag did break, and Tannin was released, the release would be

contained by the concrete floor and could be cleaned up according to proper procedures.

5.25 SEAD-60: Oil Discharge Area Adjacent to Building 609

An expanded site inspection of SEAD-60 was performed in 1994 (Parsons, April 1995). Under this effort, nine soil samples were collected and analyzed from the area of the historic spill. Additionally, three groundwater, three surface water and three sediment samples were collected from the area surrounding the release. Samples were analyzed for volatile and semi-volatile organic compounds, polychlorinated biphenyls and pesticides, metals and total petroleum hydrocarbons. Resulting data for the soils indicated that there was evidence that volatile and semi-volatile organic compounds (primarily comprised of PAHs), polychlorinated biphenyls, total petroleum hydrocarbons and metals were present in the soils, especially in the shallower soils that were collected. Soil, groundwater, surface water and sediment data are provided in **Tables 16, 17, 18,** and **19**.

Groundwater samples indicated the presence of two volatile organic compounds, one pesticide, total petroleum hydrocarbons and several metals; however, in many cases the highest hits found were seen in the sample collected from the upgradient well. Metals were the only analytes detected in the surface water samples. Sediment samples contained many of the same semi-volatile organic compounds that were found in the soil samples, but typically these were found at significantly lower levels than were seen in the soil samples. All of the data are presented in tabular form located in Appendix D of the Final Decision Document, Twenty-Two No Further Action Sites, Seneca Army Depot Activity (Parsons, 2002).

Based on the data discussed above, a RA was undertaken at SEAD-60. On March 3 and 4, 1999 approximately 150 cubic yards of soil from the release area were excavated from the site and stockpiled in the vicinity of the Deactivation Furnace (SEAD-17). Personnel of NYSDEC performed an inspection of the spill site after the excavation and indicated in a letter dated July 13, 1999 to Mr. Thomas Grasek at the Depot "No visible contamination noted, no readings above background on HNu meter. Based on inspection plus previous analytical results, no further excavation to be required." This soil was subsequently used as the feedstock during a low temperature thermal desorption (LTTD) demonstration scheduled for the Deactivation system. The LTTD demonstration occurred in August and September of 2000.

5.26 SEAD-61: Building 718 - Underground Waste Oil Storage Tank

No site investigations have been conducted at SEAD-61, the Underground Waste Oil Storage Tank, at Building 718.

5.27 SEAD–64A: Garbage Disposal Area

A field investigation was conducted at SEAD-64A beginning in February 1994 as part of the Expanded Site Inspection for Seven Low Priority AOCs. A geophysical survey was conducted. Twelve soil samples were collected and submitted for VOC, SVOC, pesticide, and metal analyses. Three groundwater samples were collected from SEAD-64A and were submitted for metal, pH, conductivity, temperature, and turbidity analyses. Results of the chemical analyses can be found in the Final Decision Document – Mini Risk Assessment (Appendix M, **Tables M-1 and M-2**) for soil and groundwater, respectively, and are summarized in **Tables 20** and **21**. In addition, groundwater samples were collected in June 2003 with low-flow methods and were analyzed for TAL metals. Results are summarized in **Table 22**.

Several PAHs (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene), phenol, and several metals (aluminum,

arsenic, chromium, copper, lead, potassium, and zinc) were detected at levels that exceeded TAGMs in one or more soil samples. Aluminum, iron, manganese, thallium were detected at levels exceeded their respective comparative criteria levels.

A mini risk assessment was conducted for SEAD-64A based on the 1994 soil and groundwater data and the results of total cancer risk and total non-cancer hazard index can be found in **Table 3.5-10** of the Final Decision Document – Mini Risk Assessment, Seneca Army Depot Activity (Parsons, May 2002). The total cancer risks are below or within the EPA target ranges for all receptors under a warehouse land use scenario (i.e., warehouse worker, child trespasser, and construction worker). The total non-cancer hazard indices from all exposure routes are less than one for all receptors. The non-cancer hazard indices are overstated as the metal concentrations in groundwater were elevated due to the elevated turbidities in the groundwater samples. A mini risk assessment based on the available soil data and 2003 low-flow groundwater data indicates that the total non-cancer hazard indices for all receptors are less than 1, as shown in **Table 23** at the end of this document.

In addition, risks to residential receptors (i.e., residential adult and residential child) have been evaluated based on the 1994 soil and groundwater data. The results of total cancer risk and total non-cancer hazard index can be found in **Table V-3** of the Final Decision Document – Mini Risk Assessment, Seneca Army Depot Activity (Parsons, May 2002). The total cancer risks are below or at the EPA upper target limit for all receptors. The total non-cancer hazard indices from all exposure routes are equal to or greater than one for residential receptors. Groundwater ingestion is the only exposure route that would result in significant risk to residential receptors. The non-cancer hazard indices are overstated as the metal concentrations in groundwater were elevated due to the elevated turbidities in the groundwater samples. A mini risk assessment based on the available soil data and 2003 low-flow groundwater data indicates that the total non-cancer hazard indices for all residential receptors are less than 1, as shown in **Table 23** at the end of this document.

A mini risk assessment was conducted to evaluate potential risks to deer mice, short-tailed shrews, and American robins posed by the COPCs detected in surface soils at SEAD-64A. The HQs for all COPCs found in shallow soil were found less than one with the exception of benzo(a)pyrene, bis(2-ethylhexyl)phthalate, fluoranthene, and lead. The elevated risks driven by the above compounds were associated with one surface soil sample. The HQs based on the average concentrations of the other four samples were less than one or slightly above one (i.e., less than five). In addition, as a planned warehouse development, this site would most likely not support a balanced habitat. Based on the above discussion, it is concluded that SEAD-64A would not pose significant risk to potential ecological receptors. The mini risk assessment is presented and described in greater detail within the Final Decision Document – Mini Risk Assessment, Seneca Army Depot Activity (Parsons, May 2002).

5.28 SEAD-64B: Garbage Disposal Area

A field investigation was conducted at SEAD-64B beginning in February 1994 as part of the Expanded Site Inspection for Seven Low Priority AOCs. Geophysics surveys including seismic, EM, and GPR surveys were conducted at SEAD-64B. In addition, a total of three soil borings were performed at SEAD-64B and three soil samples were obtained from each soil boring. Three soil samples were also collected from the upgradient monitoring well to obtain background soil quality data. Three monitoring wells were installed at SEAD-64B. One monitoring well (MW64B-1) was installed upgradient of SEAD-64B to obtain background water quality data. Two monitoring wells were installed adjacent to and downgradient of this site. Following installation and development, one groundwater sample was collected from each well. Three surface water and sediment samples were

collected from SEAD-64B. All three samples were collected from the drainage ditch that flows to the west along the northern perimeter of this SEAD. All the samples collected from SEAD-64B were analyzed for VOCs, SVOCs, Pesticides/PCBs, and TAL metals and cyanide. Results of the chemical analyses can be found in **Appendix N, Tables N-1** through **N-4** of the Final Decision Document – Mini Risk Assessment, Seneca Army Depot Activity (Parsons, May 2002), and are summarized in **Tables 24** through **27** at the end of this document.

In addition, three test pits were excavated at SEAD-64B. The excavated material was continuously screened for organic vapors and radioactivity with an OVM-580B and a Victoreen-190, respectively. No readings above background levels (0 ppm of organic vapors and 10-15 micro Rems per hour of radiation) were observed during the excavation. No soil samples were collected from these test pits.

Of the 12 soil boring samples collected from SEAD-64B only one sample exceeded TAGMs for one compound. Sample SB64B-2-00 at a depth of 0-0.2 ft slightly exceeded the TAGM for magnesium. The aluminum and manganese concentrations detected in the three groundwater samples exceeded the respective Secondary Drinking Water Regulation levels. Similarly, the iron concentrations detected in two of the samples exceeded its NYSDEC GA standard value. The aluminum and iron concentrations detected in one surface water sample exceeded the New York State Ambient Water Quality Standards and Guidelines. 4,4'-DDE, endosulfan I, heptachlor, Arsenic, copper, iron, manganese, mercury, and nickel were detected at concentrations exceeding the sediment criteria in one or more of the sediment samples.

A mini risk assessment was conducted for SEAD-64B and the total cancer risks are below or within the EPA target ranges for all receptors under a conservation/recreation land use scenario (i.e., park worker, recreational child visitor, and construction worker). Likewise, the total non-cancer hazard indices from all exposure routes are less than one for all receptors. The results of total cancer risk and total non-cancer hazard index can be found in **Table 3.5-7** of the Final Decision Document – Mini Risk Assessment, Seneca Army Depot Activity (Parsons, May 2002), and are summarized in **Table 28** at the end of this document.

In addition, risks to residential receptors (i.e., residential adult and residential child) have been evaluated. The total cancer risks are below or within the EPA target ranges for all receptors. Likewise, the total non-cancer hazard indices from all exposure routes are less than one for all receptors. The results of total cancer risk and total non-cancer hazard index can be found in **Table V-3** of the Final Decision Document – Mini Risk Assessment, Seneca Army Depot Activity (Parsons, May 2002), and are summarized in **Table 28** at the end of this document.

A mini risk assessment was conducted to evaluate the potential effects of the exposure of deer mice, short-tailed shrews, and American robins to the COPCs detected in surface soils at SEAD-64B. The HQs for all constituents found in shallow soil were found less than one. The mini risk assessment is presented and described in greater detail within the Final Decision Document – Mini Risk Assessment, Seneca Army Depot Activity (Parsons, May 2002).

5.29 SEAD-64D: Garbage Disposal Area

A field investigation was conducted at SEAD-64D beginning in February 1994 as part of the Expanded Site Inspection for Seven Low Priority AOCs. A geophysical survey was conducted. Five groundwater samples were collected from SEAD-64D and analyzed for TAL metals, pH, conductivity, temperature, and turbidity. 16 surficial (0 to 0.2 feet) and 20 subsurface soil samples were collected from SEAD-64D for VOCs, SVOCs, and TAL metal analyses. Results of the chemical analyses can be found in Appendix P of the Final Decision Document – Mini Risk Assessment, and are summarized in **Tables 29 and 30**. In addition, groundwater samples were collected in June 2003 with low-flow methods and were analyzed for TAL metals. Results are summarized in **Table 31**.

Benzo(a)pyrene, dibenz(a,h)anthracene, phenol, aluminum, calcium, iron, lead, manganese, potassium, sodium, thallium, and zinc were detected in 1 to 5 soil samples at levels exceeding TAGMs. Aluminum, iron, lead, manganese, nickel, and thallium were detected at concentrations that exceeded their respective comparative groundwater criteria in one or more groundwater samples that were collected in 1994. [2003 Results, to be completed]

A mini risk assessment was conducted for SEAD-64D based on the 1994 soil and groundwater data and the results of total cancer risk and total non-cancer hazard index can be found in **Table 3.5-8** of the Final Decision Document – Mini Risk Assessment, Seneca Army Depot Activity (Parsons, May 2002). The total cancer risks are below or within the EPA target ranges for all receptors under a conservation/recreation land use scenario (i.e., park worker, recreational child visitor, and construction worker). The total non-cancer hazard index from all exposure routes is less than one for construction workers. The total non-cancer hazard indices from all exposure routes are greater than one for park workers and recreational child visitors. Groundwater ingestion is the only exposure route that would result in significant risk to park workers and recreational child visitors. The non-cancer hazard indices are overstated as the metal concentrations in groundwater were elevated due to the elevated turbidities in the groundwater samples. A mini risk assessment based on the available soil data and 2003 low-flow groundwater data indicates that the total non-cancer hazard indices for all receptors are less than 1, as shown in **Table 32** at the end of this document.

In addition, risks to residential receptors (i.e., residential adult and residential child) have been evaluated based on the 1994 soil and groundwater data. The results of total cancer risk and total non-cancer hazard index can be found in **Table V-3** of the Final Decision Document – Mini Risk Assessment, Seneca Army Depot Activity (Parsons, May 2002). The total cancer risks are below or within the EPA target ranges for all receptors. The total non-cancer hazard indices from all exposure routes are greater than one for residential receptors. Groundwater ingestion is the only exposure route that would result in significant risk to residential receptors. The non-cancer hazard indices are overstated as the metal concentrations in groundwater were elevated due to the elevated turbidities in the groundwater samples. A mini risk assessment based on the available soil data and 2003 low-flow groundwater data indicates that the total non-cancer hazard indices for all residential receptors are less than 1, as shown in **Table 32** at the end of this document.

A mini risk assessment was conducted to evaluate potential risks to deer mice, short-tailed shrews, and American robins posed by the COPCs detected in surface soils at SEAD-64D. The HQs for all COPCs found in shallow soil were found less than one with the exception of bis(2-ethylhexyl)phthalate and di-n-octylphthalate. Both bis(2-ethylhexyl)phthalate and di-n-octylphthalate are common laboratory contaminants and therefore the detected concentrations may not necessarily be associated with site conditions. The elevated risks posed by

bis(2-ethylhexyl)phthalate and di-n-octylphthalate are caused by one sample out of 24 soil samples. The average bis(2-ethylhexyl)phthalate concentration at SEAD-64D does not pose significant risk to potential ecological receptors. Di-n-octylphthalate was only detected once out of 24 samples. Based on the above discussion, it is concluded that SEAD-64D would not pose significant risk to potential ecological receptors. The mini risk assessment is presented and described in greater detail within the Final Decision Document – Mini Risk Assessment, Seneca Army Depot Activity (Parsons, May 2002).

5.30 SEAD-65: Acid Storage Areas

No evidence of any releases was observed in any of the three areas in SEAD-65 during the November 1990 inspection.

A limited site inspection was performed in 1993 and surficial soil samples (0 to 6 inches) were collected from fifteen locations in the three acid storage areas. One soil sample was collected from the corner of each of the storage areas, while the last sample was collected from the approximate center of each area. These samples were analyzed in the field for pH. The results of these tests are presented in **Table 33** at the end of the document. All samples tested were found to have a pH in the range of 6.59 to 8.09. These levels of pH are in the normal range for soils and do not provide evidence of a release.

5.31 SEAD-68: Building S-335 Old Pest Control Shop

Surface soil sampling and soil borings were performed at SEAD-68 in 1998. A total of five surface soil samples were collected exterior of doorways from the building. Three of the samples were collected near three doors located on the west, north, and east sides of the building. The other two samples were collected from locations to the northwest and southeast of the large garage door. Two soil borings were performed at the site, one located on either side of the large garage door, beyond the surface soil sample locations mentioned above. The borings were in grassy areas that are likely disposal areas due to the good infiltration of the areas and their location near drainage ditches. Two soil samples were collected from each boring location. The soil samples were analyzed for VOCs, pesticides, and arsenic. Results of the chemical analyses for soil can be found in **Appendix R, Table R-1** of the Final Decision Document – Mini Risk Assessment, Seneca Army Depot Activity (Parsons, May 2002), and are summarized in **Table 34** at the end of this document.

Benzo(a)anthracene, benzo(a)pyrene, chrysene, dibenz(a,h)anthracene, and arsenic were detected in one or more soil samples at levels that exceeded TAGMs. All exceedances were from surface soil samples, collected at a depth of 0-0.2 feet.

A mini-risk assessment was conducted for SEAD-68 and the total cancer risks found are below or within the EPA target ranges for all receptors under a industrial land use scenario (i.e., industrial worker, construction worker, worker at on-site day care center, and child at on-site day care center). Likewise, the total non-cancer hazard indices from all exposure routes are less than one for all receptors. The results of total cancer risk and total non-cancer hazard index can be found in **Table 3.5-4** of the Final Decision Document – Mini Risk Assessment, Seneca Army Depot Activity (Parsons, May 2002), and are summarized in **Table 35** at the end of this document.

In addition, risks to residential receptors (i.e., residential adult and residential child) were evaluated. The total cancer risks are below or within the EPA target ranges for all receptors. Likewise, the total non-cancer hazard indices from all exposure routes are less than one for all receptors. The results of total cancer risk and total non-cancer hazard index can be found in **Table V-3** of the Final Decision Document – Mini Risk Assessment, Seneca Army Depot Activity (Parsons, May 2002), and are summarized in **Table 35** at the end of this document.

6 REGULATORY STATUS

6.1 SEAD-07: Shale Pit

Activities conducted in SEAD-07 are exempt from regulation by the 6 NYCRR Subpart 360-7.1 (b)(i) that states, "sites at which only recognizable uncontaminated concrete, asphalt pavement, brick, soil or stone is placed are exempt from regulation." The Shale Pit is located within the 185-acres of land that was transferred by the U.S. Government to SCIDA on February 14, 2000. The transferred land is currently leased to KidsPeace and is used as the location of the Seneca Woods Residential Program. EPA concurred as no action under the Finding of Suitability to Transfer; DEC abstained. The Army recommends that this SWMU be designated a "No Action" site under CERCLA.

6.2 SEAD-09: Old Scrap Wood Site

The total cancer risks from all exposure routes at SEAD-9 are within or below the EPA target range for all receptors under typical industrial use and residential use scenarios. Likewise, the total non-cancer hazard indices from all exposure routes are less than one for all receptors.

Based on this information, the Army recommends that this SWMU be designated as a "No Action" site under CERCLA.

6.3 SEAD-10: Scrap Wood Pile

Scrap wood generated at the Depot is still managed at SEAD-10. The Army recommends that this SWMU be designated a "No Action" site under CERCLA.

6.4 SEAD-18: Building 709 - Classified Document Incinerator

During the time of its use, the operations of the incinerator were subject to conditions of an air discharge permit issued by the NYSDEC. In the 1990s when its use was discontinued, the incinerator's operating permit was allowed to expire. The Classified Document Incinerator was located within the 185-acres of land that was transferred by the U.S. Government to SCIDA on February 14, 2000. EPA concurred as no action under the Finding of Suitability to Transfer; DEC abstained. Prior to the transfer of the property, the incinerator was dismantled and removed from the site by the Army.

The Army recommends that this SWMU be designated a "No Action" site under CERCLA.

6.5 SEAD-19: Building 801 - Former Classified Document Incinerator

The incinerator is not currently in use. However, its use is covered by Certificate to Permit Regulated Activities C453089-00460801BNR. Building 801 is located within a portion of the Depot that is currently being investigated under the ongoing SEAD-12 RI/FS program. The Army recommends that this SWMU be designated a "No Action" site under CERCLA.

6.6 SEAD-20: Sewage Treatment Plant (STP) No. 4

Sewage Treatment Plant No. 4 is currently operating under two permit authorizations. Its State Pollutant Discharge Elimination System (SPDES) number is NY0021296 and its NYSDEC identification number is 8-4530-00006/00035 that expires on May 1, 2004. Based on historic information, there are no indications that SPDES violations have occurred.

The Army recommends that this SWMU be designated a "No Action" site under CERCLA.

6.7 SEAD-21: Sewage Treatment Plant No. 715

During its operation by the Army, operation of STP No. 715 was regulated under NYSDEC authorization number 8-4530-00006/0003 (expiration date: May 1,

2004) and under SPDES Permit No. NY0021296. The Army discontinued its use in 1995, when the operations at the North End of the Depot terminated. STP No. 715 is located within the 185-acres of land that was transferred by the U.S. Government to SCIDA on February 14, 2000. EPA concurred as no action under the Finding of Suitability to Transfer; DEC abstained.

The Army recommends that this SWMU be designated a "No Action" site under CERCLA.

6.8 SEAD-22: Sewage Treatment Plant No. 314

No SPDES Permit was required for the operation of STP No. 314 during the time of the treatment plant's operation. The Army recommends that this SWMU be designated a "No Action" site under CERCLA.

6.9 SEAD–28: Building 360 - Underground Waste Oil Tanks (2)

No PAHs were detected in the confirmatory soil sample collected from SEAD-28.

The Tanks are regulated under NYCRR part 614.

The Army recommends that this SWMU be designated as a "No Further Action" site under CERCLA.

6.10 SEAD-29: Building 732 - Underground Waste Oil Tank

New York State's tank designation for this unit was 8-416118-059 prior to its removal. The tank was removed.

The Tank was regulated under NYCRR part 614

The Army recommends that this SWMU be designated a "No Further Action" site under CERCLA.

6.11 SEAD-30: Building 118 - Underground Waste Oil Tank

This tank was identified as EPA Tank #118; its State of New York identification number was 208. This tank was removed.

The Tank is regulated under NYCRR part 614

The Army recommends that this SWMU be designated a "No Further Action" site under CERCLA.

6.12 SEAD-31: Building 117 - Underground Waste Oil Tank

The tank was removed as part of base closure activities. The NYSDEC identification number for the tank was NYS 8-416118-025, while the US EPA number was 117.

The Tank is regulated under NYCRR part 614

The Army recommends that this SWMU be designated a "No Further Action" site under CERCLA.

6.13 SEAD-32: Building 718 - Underground Waste Oil Tank

The government agency that regulates this unit is NYSDEC's Region 8 Water Division with input from the Federal Projects Section, Division of Hazardous Waste Remediation. The two underground storage tanks comprising SEAD-32 were included in the property that was transferred by the U.S. Government to SCIDA on February 14, 2000. EPA concurred as no action under the Finding of Suitability to Transfer; DEC abstained.

The Tank is regulated under NYCRR part 614

The Army recommends that this SWMU be designated a "No Action" site under CERCLA.

6.14 SEAD-33: Building 121 - Underground Waste Oil Tank

No VOCs were detected in the soil boring samples collected downgradient and upgradient of the tank. The maximum TPH concentration detected was 470 mg/kg.

The Tanks are regulated under NYCRR part 614

The Army recommends that this SWMU be designated as a "No Action" site under CERCLA.

6.15 SEAD-34: Building 319 - Underground Waste Oil Tanks (2)

No compounds of concern were detected in the soil or groundwater samples collected from SEAD-34. The maximum TPH concentration detected in soil was 93 mg/kg and TPH was not detected in groundwater.

The Tanks are regulated under NYCRR part 614

The Army recommends that this SWMU be designated as a "No Further Action" site under CERCLA.

6.16 SEAD-35: Building 718 - Waste Oil-Burning Boilers

The three boilers were regulated under NYSDEC Division of Air Resources Emission Point Source Permit Identification Number 453089-0046-07183. Building 718, and its contents, was included in the property that was transferred by the U.S. Government to SCIDA on February 14, 2000. EPA concurred as no action under the Finding of Suitability to Transfer; DEC abstained.

The Army recommends that this SWMU be designated a "No Action" site under CERCLA.

6.17 SEAD-36: Building 121 - Waste Oil-Burning Boilers

All of these units are regulated under NYSDEC Division of Air Resources Emission Point Source Permit Identification Number 453089-0046-00121. The Army recommends that this SWMU be designated a "No Action" site under CERCLA.

6.18 SEAD-37: Building 319 - Waste Oil-Burning Boilers

The NYSDEC Division of Air Resources Identification Number for the two boiler units is 453089-0046-00319. The Army recommends that this SWMU be designated a "No Action" site under CERCLA.

6.19 SEAD-42: Building 106 - Preventative Medicine Laboratory

Infectious wastes were generated in Building 106, as a by-product of the clinical laboratory work. These materials were regulated by the County Health Department (Geneva District Office – NYCRR Title 6 Section 364.9) and by US Army Rules and Regulations. Review of available information indicates that there is no evidence that any waste was released from the operations conducted in Building 106. The Army recommends that this SWMU be designated a "No Action" site under CERCLA.

6.20 SEAD-47: Buildings 321 AND 806 - Radiation Calibration Source Storage

There were no applicable regulatory permits for either of these facilities. Only Radiation Calibration Sources were stored in these areas. Radiological measurements for wipe samples of the floor drains and vents in Building 806 indicated levels below detection limits. The calibration labs generated no hazardous wastes. The Army proposes that these two buildings be designated as "No Action" sites under CERCLA.

6.21 SEAD-49: Building 356 - Columbite Ore Storage Area

Results of the radiological survey conducted by NYSDEC and NYSDOH indicate there is no evidence of release. NYSDEC personnel recommended a "No Action" classification for SEAD-49 in a letter sent to Mr. Randall Battaglia dated September 21, 1993. The Army recommends that this SWMU be designated a "No Action" site under CERCLA.

6.22 SEAD-51: Herbicide Usage Area - Perimeter of High Security Area

No regulatory permit number is applicable. The herbicide application was a planned operation and it was completed by personnel who were licensed to apply the material. The use of herbicides and pesticides under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) is statutorily exempt from regulation under CERCLA. This is due to the purpose and nature of residuals of the herbicides and pesticides to act or be used for the desired effects. The herbicide concentrations detected in soil samples collected from SEAD-51 were below the NYSDEC and EPA recommended criteria.

The Army proposes that SEAD-51 be classified as a "No Action" site under CERCLA.

6.23 SEAD-53: Munitions Storage Igloos

The storage igloos are not regulated under any permit number. Ammunition/munitions or pitchblende ore stored in igloos was not waste. Available information and data suggest that there is no evidence of any past releases or discharges of material from the area of the igloos.

The Army proposes SEAD-53 as a "No Action" site under CERCLA.

6.24 SEAD-55: Building 357 - Tannin Storage

Tannin is not a hazardous substance under CERCLA, RCRA, DOT, or other regulatory statute. The Tannin stored at Seneca Army Depot was stored as a material and not a waste.

The Army recommends that this SWMU be designated a "No Action" site under CERCLA.

6.25 SEAD-60: Oil Discharge Area Adjacent To Building 609

NYSDEC visited SEAD-60 on June 7, 1999, and closed out the site. SEDA received confirmation of the acceptability of the closeout of the facility in a letter dated July 13, 1999 from NYSDEC Region 8 Spill Prevention and Response Unit. The Army recommends that this SWMU be designated a "No Further Action" site under CERCLA.

6.26 SEAD-61: Building 718 - Underground Waste Oil Storage Tank

This tank is subject to the requirements of NYS underground storage tank regulations as specified in 6 NYCCR Part 614. Its NYS Petroleum bulk storage number is 8-416118-038. The operations of this tank continue to be regulated by NYSDEC under 6 NYCCR Part 614. The underground storage tank that comprises SEAD-61 was included in the property that was transferred by the U.S. Government to SCIDA on February 14, 2000. EPA concurred as no action under the Finding of Suitability to Transfer; DEC abstained.

The Army recommends that this SWMU be designated a "No Action" site under CERCLA.

6.27 SEAD-64A: Garbage Disposal Area

The total cancer risks from all exposure routes are within or below the EPA target range for all receptors under conservation/recreation land use scenario and residential use scenario. Likewise, the total non-

cancer hazard indices from all exposure routes are less than one for all receptors based on the available soil data and low-flow groundwater data. Although HQs for benzo(a)pyrene, bis(2-ethylhexyl)phthalate, fluoranthene, and lead were elevated for ecological receptors, SEAD-64A is not expected to pose significant ecological risks as the site is planned for warehouse development and would most likely not support a balanced habitat.

The Army recommends that this SWMU be designated as a "No Action" site under CERCLA.

6.28 SEAD-64B: Garbage Disposal Area

The total cancer risks from all exposure routes are within or below the EPA target range for all receptors under conservation/recreation land use scenario and residential use scenario. Likewise, the total non-cancer hazard indices from all exposure routes are less than one for all receptors. No significant ecological risk was found at SEAD-64B.

The Army recommends that this SWMU be designated as a "No Action" site under CERCLA.

6.29 SEAD-64D: Garbage Disposal Area

The total cancer risks from all exposure routes are within or below the EPA target range for all receptors under conservation/recreation land use scenario and residential use scenario. Likewise, the total non-cancer hazard indices from all exposure routes are less than one for all receptors based on the available soil data and low-flow groundwater data. Although HQs for bis(2-ethylhexyl)phthalate and di-n-octylphthalate were elevated for ecological receptors, these two compounds are not expected to pose significant ecological risks to ecological receptors as the average bis(2-ethylhexyl)phthalate concentration will not result in significant risk and di-n-octylphthalate was only detected in one out of 24 surface soil samples.

The Army recommends that this SWMU be designated as a "No Action" site under CERCLA.

6.30 SEAD-65: Acid Storage Areas

The areas comprising this SWMU are only subject to review under CERCLA. There were no historic permits associated with the activities conducted in this SWMU. The Army recommends that this SWMU be designated a "No Action" site under CERCLA.

6.31 SEAD-68: Building S-335 - Old Pest Control Shop

The total cancer risks from all exposure routes are within or below the EPA target range for all receptors under industrial land use scenario and residential use scenario. Likewise, the total non-cancer hazard indices from all exposure routes are less than one for all receptors.

The Army recommends that this SWMU be designated as a "No Action" site under CERCLA.

7 SUMMARY OF THE REMEDIAL GOALS AND PROPOSED ACTION

The selected remedy for any site should, at a minimum, eliminate or mitigate all significant threats to the public health or the environment presented by the hazardous waste present at the site. The Army believes that information and data developed for the 31 sites discussed in this Proposed Plan indicate that conditions satisfy this objective.

Based on the results of the investigations and the RA that have been performed at the sites, the Army is proposing No Action as the preferred remedial alternative for the following SWMUs: SEADs 07, 09, 10, 18, 19, 20, 21, 22, 32, 33, 35, 36, 37, 42, 47, 49, 51, 53, 55, 61, 64A, 64B, 64D, 65, and 68. In addition, the Army is proposing No Further Action as the preferred remedial alternative for the following SWMUs: SEADs 28, 29, 30, 31, 34, and 60.

8 REFERENCES

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

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

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

US Army Toxic and Hazardous Materials Agency (USATHAMA), Installation Assessment of Seneca Army Depot, Report No. 157, Aberdeen Proving Grounds, MD, January 1980.

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GLOSSARY

Area of Concern (AOC)
Areas of Concern (AOCs) include both solid waste management units where releases of hazardous substances may have occurred and locations where there has been a release or threat of a release in the environment of a hazardous substance, pollutant or contaminant (including radionuclides) under CERCLA.

Army Corps of Engineer (USAOCE)
The engineering organization of the U.S. Army. The districts involved in the Seneca Army Depot Activity project includes: the New York District (CENAN), the New England District (CENED), the Huntsville Center for Engineering Support (CEHNC).

Base Realignment and Closure (BRAC)
A congressionally mandated process that involves closure of military bases. The goal of BRAC is to transition the former bases from military uses to civilian reuse, with the intent of minimizing the negative effects of base closure by spurring economic development and growth. The SEDA was listed as a base to be closed in October 1995. Base closure is in the process of being performed.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress on December 11, 1980. This law created a tax on the chemical and petroleum industries and provided broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA:

- established prohibitions and requirements concerning closed and abandoned hazardous waste sites;
- provided for liability of persons responsible for releases of hazardous waste at these sites; and
- established a trust fund to provide for cleanup when no responsible party could be identified.

The law authorizes two kinds of response actions:

- Short-term removals, where actions may be taken to address releases or threatened releases requiring prompt response.
- Long-term remedial response actions, that permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life threatening. These actions can be conducted only at sites listed on EPA's National Priorities List (NPL).

CERCLA also enabled the revision of the National Contingency Plan (NCP). The NCP provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also established the NPL.

CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986

Cleanup
Cleanup is the term used for actions taken to deal with a release or threat of release of a hazardous substance that could affect humans and or the environment. The term sometimes is used interchangeably with the terms remedial action, removal action, response action, or corrective action.

Clean Water Act (CWA)
CW A is a 1977 amendment to the Federal Water Pollution Control Act of 1972, which set the basic structure for regulating discharges of pollutants to U.S. waters. This law gave EPA the authority to set wastewater discharge standards on an industry-by-industry basis and to set water quality standards for all contaminants in surface waters.

Closure (Under RCRA)

RCRA closure is a process for preventing the release of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the ground water, surface water, or the atmosphere from a hazardous waste management facility after the facility stops receiving waste. The closure process may involve waste removal and management, decontamination and decommissioning of equipment, application of final covers, and other release-preventing actions. The process also involves developing a closure plan, having the plan approved as part of the facility's permit, and implementing the plan when the facility closes. Closure occurs after the facility accepts the final shipment of hazardous waste (unless the facility qualities for a delay of closure). (Reference: http://tis.eh.doe.gov/oepa/guidance/rcra/closur.pdf)

Closure (Department of Defense)

Under the Department of Defense's definition, closure means that all missions of the base will cease or be relocated. All personnel (military, civilian, and contractor) will either be eliminated or relocated. The entire base will be excessed and the property disposed.

(Reference: ttp://www.hqda.army.mil/acsimweb/brac/braco.htm)

Columbite Ore

A black, red-brown, or colorless mineral. It contains iron (Fe), manganese (Mn), magnesium (Mg), niobium (Nb) and tantalum (Ta) and its formula is typically written as (Fe, Mn, Mg)(Nb, $Ta)_2O_6$. It is the principal ore of niobium. Columbite is the most widespread niobium mineral and makes for an important ore of the industrially useful metal. Niobiumis used in alloys for improved strength. It also has shown super conductive properties and is being studied with other metals for a possible breakthrough alloy in this new industrial field.

Community Environmental Response Facilitation Act (CERFA – Public Law 102-426)

The Community Environmental Response Facilitation Act (CERFA) was passed by Congress in 1992, and amended Section 9620(h) of CERCLA, which addresses Federal real property transfers. In enacting the legislation Congress stated that the closure of Federal facilities has an adverse impact on local economies and that delays in remediating contaminated real property add to this burden by delaying the conversion of such property to productive uses. The statute applies to real property owned by the Department of Defense and on which the U.S. plans to terminate Federal government operations, as well as to real property that has been used as a military installation and which is being closed or realigned pursuant to base closure. Federal entities with control over such properties must identify those upon which no hazardous substances or petroleum products/derivatives were stored for more than one year, released, or disposed of by examining relevant sources of data such as property deeds, aerial photographs, or other similar documents. Subsequent transfers or sales of the identified properties by the limited states must contain assurances that the U.S. will assume full responsibility for any response or corrective action that may become necessary after the transfer of property is completed. Where hazardous substances or petroleum products/derivatives were stored for more than one year, released, or disposed of on the U.S.-owned real property, the Federal entity with control of the property must notify the state of any lease entered into by the controlling Federal entity that will remain in effect after operations cease. The notification must be sent to the state prior to the signing of the lease, and must inform the state of the name of the lessee, and a description of the uses permitted under the condition of the lease. (Reference: http://www.ntc.blm.gov/learningplace/res_CERFA.html)

Completion Report

A report that documents and certifies that conditions found at an Area of Concern (AOC) do not constitute a threat to public health, welfare or the environment and that further remedial measures are not necessary. Such documentation shall meet, to the extent practicable and as necessary under the

specific facts pertaining to the AOC, the requirements of EPA's RCRA Facility Investigation Guidance, EPA's Guidance for Conducting RI/FSs under CERCLA, and any subsequent amendments to these documents and all other applicable federal or state guidance.

Contaminant
A contaminant is any physical, chemical, biological, or radiological substance or matter present in any media at concentrations that may result in adverse effects on air, water, or soil.

Corrosivity *(Characteristic)*
The corrosivity characteristic identifies wastes that are acidic or alkaline (basic). Such wastes can readily corrode or dissolve flesh, metal, or other materials. They are also among the most common hazardous wastes. EPA uses two criteria to identify liquid and aqueous corrosive hazardous wastes. The first is a pH test. Aqueous wastes with a pH greater than or equal to 12.5 or less than or equal to 2 are corrosive. A liquid waste may also be corrosive if it has the ability to corrode steel under specific conditions. Physically solid, nonaqueous wastes are not evaluated for corrosivity. Corrosive wastes carry the waste code D002.

The regulations describing the corrosivity characteristic are found at Title 40 CFR §261.22.

Deactivation Furnace
A Deactivation Furnace is an incineration system designed to demilitarize obsolete or unserviceable ammunition items, and to dispose of bulk propellant, explosive, or pyrotechnic wastes generated during the process of manufacture and assembly.

Detection Limit
The lowest concentration of a chemical that can be distinguished reliably from a zero concentration.

Disposal
Disposal is the final placement or destruction of toxic, radioactive or other wastes; surplus or banned pesticides or other chemicals; polluted soils; and drums containing hazardous materials from removal actions or accidental release. Disposal may be accomplished through the use of approved secure landfills, surface impoundments, land farming, deep well injection, or ocean dumping.

Environmental Protection Agency (EPA)
The Federal regulatory agency responsible for enforcing the environmental rules and regulations of the United States. Representatives from the EPA Region 2, which includes New York State, are involved in the review and oversight of the environmental work being conducted at the Seneca Army Depot Activity.

EP Toxicity
The predecessor to TCLP toxicity. An evaluation of the leachability of certain toxic chemical compounds from wastes that was used to determine if the disposed material was a characteristic hazardous waste due to toxicity.

Expanded Site Investigation (ESI)
An expanded investigation that typically includes media sampling and analyses. An ESI is performed following a Preliminary Site Investigation to obtain more information regarding the concentrations of pollutants at a site.

Exposure Pathway
An exposure pathway is the route of contaminants from the source of contamination to potential contact with a medium (air, soil, surface water, or groundwater) that represents a potential threat to human health or the environment. Determining whether exposure pathways exist is an essential step in conducting a baseline risk assessment. *See also Baseline Risk Assessment.*

Federal Facilities Agreement (FFA) also known as the Interagency Agreement (IAG)
An agreement signed between EPA, NYSDEC and the Army that describes the process for identifying, investigating and remediating sites at the Seneca

Army Depot Activity.

Flashpoint

Flash point is the lowest temperature at which a liquid can form an ignitable mixture in air near the surface of the liquid. The lower the flash point, the easier it is to ignite the material.
(Reference: http://www.ilpi.com/msds/ref/ flashpoint.html)

Free Liquids

Free liquids" means liquids which readily separate from the solid portion of a waste under ambient temperature and pressure. (Reference: Title 40 CFR § 260.10)

GA Groundwater Standard

A water quality standard promulgated by the NYSDEC that establishes a minimum quality of a groundwater supply that could be used as a source of drinking water.

Groundwater

Groundwater is the water that flows beneath the earth's surface that fills pores between such materials as sand, soil, or gravel and that often supplies wells and springs. *See also Aquifer.*

Hazard Ranking System (HRS)

The Hazard Ranking System (HRS) is the principal mechanism EPA uses to place uncontrolled waste sites on the NPL. It is a numerically based screening system that uses information from initial, limited investigations — the preliminary assessment and the site inspection – to assess the relative potential of sites to pose a threat to human health or the environment.

The HRS uses a structured analysis approach to scoring sites. This approach assigns numerical values to factors that relate to risk based on conditions at the site. The factors are grouped into three categories:

- likelihood that a site has released or has the potential to release hazardous substances into the environment;
- characteristics of the waste (e.g. toxicity and waste quantity); and
- people or sensitive environments (targets) affected by the release.

(Reference:http://www.epa.gov/superfund/programs/npl_hrs/hrsint.htm)

Heavy Metal

The term heavy metal refers to a group of toxic metals including arsenic, chromium, copper, lead, mercury, silver, and zinc. Heavy metals often are present at industrial sites at which operations have included battery recycling and metal plating.

Herbicide

A herbicide is a chemical pesticide designed to control or destroy plants, weeds, or grasses.

Hydrocarbon

A hydrocarbon is an organic compound containing only hydrogen and carbon, often occurring in petroleum, natural gas, and coal

Hydrogeology

Hydrogeology is the study of groundwater, including its origin, occurrence, movement, and quality.

Incinerator

A furnace or container used for burning waste materials.

Initial Installation Assessment (IIA)

The first environmental assessment of military facilities that was performed by the Department of Defense and its contractors under the Installation Restoration Program.

Inorganic Compounds

An inorganic compound is a compound that generally does not contain carbon atoms (although carbonate and bicarbonate compounds are notable exceptions). Examples of inorganic compounds include various metals.

Institutional Controls

An institutional control is a legal or institutional measure, which subjects a property owner to limit activities at or access to a particular property. They are used to ensure protection of human health and the environment, and to expedite property reuse. Fences, posting or warning signs, and zoning and deed restrictions are examples of institutional controls.

Landfill

A sanitary landfill is a land disposal site for non-hazardous solid wastes at which the waste is spread in layers compacted to the smallest practical volume.

Lead

Lead is a heavy metal that is hazardous to health if breathed or swallowed. Its use in gasoline, paints, and plumbing compounds has been sharply restricted or eliminated by federal laws and regulations. *See also Heavy Metal.*

Mean Sea Level (MSL)

The average height of the sea surface, based upon hourly observation of the tide height on the open coast or in adjacent waters that have free access to the sea. In the United States, it is defined as the average height of the sea surface for all stages of the tide over a nineteen year period. Mean sea level, commonly abbreviated as MSL and referred to simply as 'sea level,' serves as the reference surface for all altitudes in upper atmospheric studies.
(Reference:
http://earthobservatory.nasa.gov:81/Library/glossary.php3?xref = mean%20sea%20level)

Medium

A medium is a specific environment-air, water, or soil-which is the subject of regulatory concern and activities.

Mercury

Mercury is a heavy metal that can accumulate in the environment and is highly toxic if breathed or swallowed. Mercury is found in thermometers, measuring devices, pharmaceutical and agricultural chemicals, chemical manufacturing, and electrical equipment. *See also Heavy Metal.*

Maximum Contaminant Level (MCL)

Established under the Safe Drinking Water Act as concentrations of pollutants considered protective for drinking water.

Monitoring Well

A monitoring well is a well drilled at a specific location on or off a hazardous waste site at which groundwater can be sampled at selected depths and studied to determine the direction of groundwater flow and the types and quantities of contaminants present in the groundwater.

National Contingency Plan (NCP)

The NCP, formally the National Oil and Hazardous Substances Contingency Plan, is the major regulatory framework that guides the Superfund response effort. The NCP is a comprehensive body of regulations that outlines a step-by-step process for implementing Superfund responses and defines the roles and responsibilities of EP A, other federal agencies, states, private parties, and the communities in response to situations in which hazardous substances are released into the environment. *See also Superfund.*

National Priorities List (NPL)

The NPL is EPA's list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial response under Superfund. Inclusion of a site on the list is based primarily on the score the site receives under the HRS. Money from Superfund can be used for cleanup only at sites that are on the NPL. EP A is required to update the NPL at least once a year. *See also Hazard Ranking System and Superfund.*

New York State Department of Environmental Conservation (NYSDEC)

NYSDEC's missions include detecting and controlling sources of pollution, protecting and managing New

York's natural resources, informing and educating the public about environment, natural resources, and government's actions to protect them.

Nitroaromatics

A group of organic compound that contains one or more benzene or equivalent heterocyclic rings with one or more nitro radical groups (i.e., NO_2) attached. At SEDA, typically associated with explosive materials such as di- and tri-nitrotoluene, nitrobenzene, etc.

Nuclear Regulatory Commission

The Commission as a collegial body formulates policies, develops regulations governing nuclear reactor and nuclear material safety, issues orders to licensees, and adjudicates legal matters. NRC's primary mission is to protect the public health and safety, and the environment from the effects of radiation from nuclear reactors, materials, and waste facilities. We also regulate these nuclear materials and facilities to promote the common defense and security.

NYCRR

The New York State compilation of Codes, Rules, and Regulations.

Operable Unit (OU)

A grouping of sites that forms a larger entity with similar features or receiving equivalent treatment. Sites can be grouped into an Operable Unit due to geographical proximity to each other, similar chemical hazards or for other reasons.

Organic Chemical or Compound

An organic chemical or compound is a substance produced by animals or plants that contains mainly carbon, hydrogen, and oxygen.

Percent Solids

A physical determination used to measure the amount of solid material (i.e., normally defined as non-volatile material at 105 °C) that is contained in a sample such as a soil or sediment.

Permeability

Permeability is a characteristic that represents a qualitative description of the relative ease with which rock, soil, or sediment will transmit a fluid (liquid or gas).

Pesticide

A pesticide is a substance or mixture of substances intended to prevent or mitigate infestation by, or destroy or repel, any pest. Pesticides can accumulate in the food chain and or contaminate the environment if misused.

Polychlorinated Biphenyl (PCB)

PCBs are a group of toxic, persistent chemicals, produced by chlorination of biphenyl, that once were used in high voltage electrical transformers because they conducted heat well while being fire resistant and good electrical insulators. These contaminants typically are generated from metal degreasing, printed circuit board cleaning, gasoline, and wood preserving processes. Further sale or use of PCBs was bal1ned in 1979.

Polynuclear Aromatic Hydrocarbon (P AH)

A PAH is a chemical compound that contains more than one fused benzene ring. They are commonly found in petroleum fuels, coal products, and tar.

Proposed Plan

The Proposed Plan is the first step in the remedy selection process. The Proposed Plan provides information supporting the decisions of how the preferred alternative was selected. It summarizes the site information and how the alternatives comply with the requirements of the NCP and CERCLA. The Proposed Plan is provided to the public for comment. The responses to the Proposed Plan comments are provided in the ROD.

Reactivity

The reactivity characteristic identifies wastes that readily explode or undergo violent reactions. Common examples are discarded munitions or explosives. A waste is reactive if it meets any of the

following criteria:

- It can explode or violently react when exposed to water or under normal handling conditions
- It can create toxic fumes or gases when exposed to water or under normal handling conditions
- It meets the criteria for classification as an explosive under DOT rules
- It generates toxic levels of sulfide or cyanide gas when exposed to a pH range of 2 through 12.5. Wastes exhibiting the characteristic of reactivity are assigned the waste code D003.

The reactivity characteristic is described in the regulations at Title 40 CFR §261.23.

Record of Decision (ROD)
A ROD is a legal, technical, and public document that explains which cleanup alternative will be used at a Superfund NPL site. The ROD is based on information and technical analysis generated during the remedial investigation and feasibility study (RI/FS) and consideration of public comments and community concerns. *See also Preliminary Assessment and Site Investigation and Remedial Investigation and Feasibility Study.*

Release
A release is any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, leaching, dumping, or disposing into the environment of a hazardous or toxic chemical or extremely hazardous substance, as defined under RCRA. *See also Resource Conservation and Recovery Act.*

remedial action (RA)
A RA is the actual construction or implementation of a remedy at a site or portion thereof.

Resource Conservation and Recovery Act (RCRA)
RCRA is a federal law enacted in 1976 that established a regulatory system to track hazardous substances from their generation to their disposal. The law requires the use of safe and secure procedures in treating, transporting, storing, and disposing of hazardous substances. RCRA is designed to prevent the creation of new, uncontrolled hazardous waste sites.

Risk Assessment
The process of assessing and analyzing threats that contaminants found at a site pose to surrounding populations and the environment. The resulting analysis is used as a preliminary, conservative estimate of the potential level of threat that is posed so that appropriate and cost-effective countermeasures can be identified and implemented.

Sediment Criteria
Technical guidance provided by NYSDEC, the Division of Fish and Wildlife, that describes allowable sediment quality for a variety of chemicals. The values provided in this document have been adopted as screening levels for comparison to site data. Exceedances of these values provides that basis for further evaluation and decision making.

Semivolatile Organic Compound (SVOC)
SVOCs, composed primarily of carbon and hydrogen atoms, have boiling points greater than 2000°C. Common SVOCs include PCBs and phenol *See also Phenol and Polychlorinated Biphenyl.*

Seneca Army Depot Activity (SEDA)
A 10,634-acre military facility, constructed in 1941, located in central New York responsible for storage and management of military commodities, including munitions. The depot is undergoing closure and will cease military operations in 2000. Environmental cleanup activities will continue until all sites have been addressed.

Seneca County Board of Supervisors
The board that oversees Seneca County's governmental affairs.

Sewage Treatment Plant (STP)
A treatment facility that is used to treat wastewater derived from residential, commercial, industrial, military and/or municipal activities. Varying treatment

processes may be included based on wastewater quality and could include bar screens, grid chambers, clarifiers, settling basins, digesters, chlorinators, thickeners, trickling filters, etc.

Significant Threat
The term refers to the level of contamination that a state would consider significant enough to warrant an action. The thresholds vary from state to state.

Soil Boring
Soil boring is a process by which a soil sample is extracted from the ground for chemical, biological, and analytical testing to determine the level of contamination present.

Solid Waste Management Unit (SWMU)
A SWMU is a RCRA term used to describe a contiguous area of land on or in which where solid waste, including hazardous waste, was managed. This includes landfills, tanks, land treatment areas, spills and other areas where waste materials were handled. Identification of all SWMUs at SEDA was performed as part of the RCRA Part B Permit Application process.

State Pollutant Discharge Elimination System (SPDES)
New York State has a state program which has been approved by the United States Environmental Protection Agency for the control of wastewater and storm water discharges in accordance with the Clean Water Act. Under New York State law the program is known as the State Pollutant Discharge Elimination System (SPDES) and is broader in scope than that required by the Clean Water Act in that it controls point source discharges to groundwaters as well as surface waters.

Subsurface
Underground; beneath the surface.

Surface Water
Surface water is all water naturally open to the atmosphere, such as rivers, lakes, reservoirs, streams, and seas.

Superfund
Superfund is the trust fund that provides for the cleanup of hazardous substances released into the environment, regardless of fault. The Superfund was established under CERCLA and subsequent amendments to CERCLA. The term Superfund also is used to refer to cleanup programs designed and conducted under CERCLA and its subsequent amendments. *See also Comprehensive Environmental Response, Compensation, and Liability Act.*

Tannin
Any phenolic compound of sufficiently high molecular weight containing sufficient hydroxyls and other suitable groups (i.e. carboxyls) to form effectively strong complexes with protein and other macromolecules under the particular environmental conditions being studied. Tannins can complex with: Proteins, Starch, Cellulose, and Minerals. At SEDA, Tannin was used as a chemical additive in boiler make-up water to complex with metals (i.e., minerals) that could foul heating equipment.

Technical Administrative Guidance Memorandum (TAGM)
TAGMs are technical guidance publications provided by NYSDEC that describes various processes and procedures recommended by NYSDEC for the investigation and remediation of hazardous waste sites. One TAGM, No. 4046, provides guideline values for recommended soil cleanup levels at waste sites.

Thermal Desorption also known as Low Temperature Thermal Desorption (LTTD)
Thermal desorption is an innovative treatment technology that heats soils contaminated with hazardous wastes to temperatures from 200 to 1,000°F so that contaminants that have low boiling

points will vaporize and separate from the soil. The vaporized contaminants then are collected for further treatment or destruction, typically by an air emissions treatment system. The technology is most effective at treating VOCs, SVOCs and other organic contaminants, such as PCBs, PAHs, and pesticides. It is effective in separating organics from refining wastes, coal tar wastes, waste from wood treatment, and paint wastes. It also can separate solvents, pesticides, PCBs, dioxins, and fuel oils from contaminated soil. *See also Polyaromatic Hydrocarbon, Polychlorinated Biphenyl, semivolatile Organic Compound, and Volatile Organic Compound.*

Total Petroleum Hydrocarbon (TPH)

TPH refers to a measure of concentration or mass of petroleum hydrocarbon constituents present in a given amount of air, soil, or water

Toxicity

Toxicity is a quantification of the degree of danger posed by a substance to animal or plant life.

Toxicity Characteristic Leaching Procedure (TCLP)

The TCLP is a testing procedure used to identify the toxicity of wastes and is the most commonly used test for degree of mobilization offered by a solidification and stabilization process. Under this procedure, a waste is subjected to a process designed to model the leaching effects that would occur if the waste was disposed of in a RCRA Subtitle D municipal landfill. *See also Solidification and Stabilization.*

U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) formerly U.S. Army Environmental Hygiene Agency (USAEHA)

The U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) lineage can be traced back over 50 years to the Army Industrial Hygiene Laboratory. That organization was established at the beginning of World War II and was under the direct jurisdiction of The Army Surgeon General. Its mission was to conduct occupational health surveys of Army-operated industrial plants, arsenals, and depots. These surveys were aimed at identifying and eliminating occupational health hazards within the Department of Defense's industrial production base and proved to be of great benefit to the nation's war effort.

It was known both nationally and internationally as the U.S. Army Environmental Hygiene Agency or USAEHA. Its mission was expanded to support the worldwide preventive medicine programs of the Army, DOD, and other Federal agencies through consultations and supportive services, investigations, and training. In 1994, it was redesignated the USACHPPM. Its mission is to provide worldwide technical support for implementing preventive medicine, public health, and health promotion/wellness services into all aspects of America's Army and the Army Community anticipating and rapidly responding to operational needs and adaptable to a changing world environment.

U. S. Army Environmental Center (USAEC) formerly U.S. Army Toxic and Hazardous Material Agency (USATHAMA)

The Army Environmental Center traces its roots back to 1972, when the Army created the Project Manager for Chemical Demilitarization. The organization's mission then was the destruction of the nation's toxic chemical agents and munitions. In 1975, the organization began managing the newly established Installation Restoration Program, set up to develop an assessment process for evaluating environmental conditions at Army installations. With the new responsibilities came a new name, the Department of the Army Project Manager for Chemical Demilitarization and Installation Restoration. By 1978, the Army's environmental responsibilities had expanded and the organization was renamed the U.S. Army Toxic and Hazardous Materials Agency (USATHAMA) to reflect a broader, more long-term mission. By 1980, the agency welcomed several new

responsibilities to include environmental research, development, test, and evaluation; pollution abatement; and environmental control technology.

Environmental compliance joined the responsibilities of the organization in 1988 and with that new responsibility came a transition from the U.S. Army Material Command to the U.S. Army Corps of Engineers. In 1993, looking to further centralize the management of its many environmental programs, the Army shifted USATHAMA and the mission for conservation from the Corps of Engineers to a new Army field operating agency, the U.S. Army Environmental Center. The current focus on program management rather than project execution allows the USAEC staff of biologists, chemists, engineers, lawyers, and researchers to provide sound advice and supervision of Army environmental programs worldwide.

Vapor

Vapor is the gaseous phase of any substance that is liquid or solid at atmospheric temperatures and pressures. Steam is an example of a vapor.

Volatile Organic Compound (VOC)

A VOC is one of a group of carbon-containing compounds that evaporate readily at room temperature. Examples of VOCs include trichloroethane; trichloroethylene; and BTEX. These contaminants typically are generated from metal degreasing, printed circuit board cleaning, gasoline, and wood preserving processes.

Waste Oil

The generic phrase used to describe used oil. Used oil means any oil that has been refined from crude oil, or any synthetic oil, that has been used and as a result of such use is contaminated by physical or chemical impurities.

Wastewater

Wastewater is spent or used water from an individual home, a community, a farm, or an industry that contains dissolved or suspended matter.

Water Table

A water table is the boundary between the saturated and unsaturated zones beneath the surface of the earth, the level of groundwater, and generally is the level to which water will rise in a well *See also*

TABLE 1
NO FURTHER ACTION AND NO ACTION SWMUs CONSIDERED IN THIS PROPOSED PLAN

UNIT NUMBER	UNIT NAME	Recommend ation	UNIT NUMBER	UNIT NAME	Recommend ation
SEAD-07	Shale Pit	No Action	SEAD-35	Building 718 - Waste Oil-Burning Boilers (3 units)	No Action
SEAD-09	Old Scrap Wood Site	No Action	SEAD-36	Building 121 - Waste Oil-Burning Boilers (2 units)	No Action
SEAD-10	Present Scrap Wood Site	No Action	SEAD-37	Building 319 - Waste Oil-Burning Boilers (2 units)	No Action
SEAD-18	Building 709 – Classified Document Incinerator	No Action	SEAD-42	Building 106 - Preventive Medicine Laboratory	No Action
SEAD-19	Building 801 – Classified Document Incinerator	No Action	SEAD-47	Buildings 321 And 806 – Radiation Calibration Source Storage	No Action
SEAD-20	Sewage Treatment Plant No. 4	No Action	SEAD-49	Building 356 – Columbite Ore Storage	No Action
SEAD-21	Sewage Treatment Plant No. 715	No Action	SEAD-51	Herbicide Usage Area – Perimeter of High Security Area	No Action
SEAD-22	Sewage Treatment Plant No. 314	No Action	SEAD-53	Munitions Storage Igloos	No Action
SEAD-28	Building 360 – Underground Waste Oil Tanks (2)	No Further Action	SEAD-55	Building 357 - Tannin Storage	No Action
SEAD-29	Building 732 - Underground Waste Oil Tanks (2 units)	No Further Action	SEAD-60	Oil Discharge Adjacent to Building 609	No Further Action
SEAD-30	Building 118 – Underground Waste Oil Tank	No Further Action	SEAD-61	Building 718 - Underground Waste Oil Tank	No Action
SEAD-31	Building 117 – Underground Waste Oil Tank	No Further Action	SEAD-64A	Garbage Disposal Area	No Action
SEAD-32	Building 718 – Underground Waste Oil Tanks	No Action	SEAD-64B	Garbage Disposal Area	No Action
SEAD-33	Building 121 – Underground Waste Oil Tank	No Action	SEAD-64D	Garbage Disposal Area	No Action
SEAD-34	Building 319 – Underground Waste Oil Tanks (2)	No Further Action	SEAD-65	Acid Storage Areas	No Action
			SEAD-68	Building S-335 Old Pest Control Shop	No Action

TABLE 2
SUMMARY OF SOIL ANALYSIS RESULTS – SEAD-09

COMPOUND	UNITS	MAXIMUM	FREQUENCY OF DETECTION	TAGM	NUMBER ABOVE TAGM	NUMBER OF DETECTS	NUMBER OF ANALYSES
VOLATILE ORGANICS							
Toluene	ug/Kg	1	22%	1500	0	2	9
Chlorobenzene	ug/Kg	2	11%	1700	0	1	9
Ethylbenzene	ug/Kg	1	11%	5500	0	1	9
Xylene (total)	ug/Kg	2	11%	1200	0	1	9
SEMIVOLATILE ORGANICS							
Naphthalene	ug/Kg	360	56%	13000	0	5	9
2-Methylnaphthalene	ug/Kg	140	33%	36400	0	3	9
Acenaphthylene	ug/Kg	40	44%	41000	0	4	9
Acenaphthene	ug/Kg	790	44%	50000*	0	4	9
Dibenzofuran	ug/Kg	360	44%	6200	0	4	9
Fluorene	ug/Kg	610	44%	50000*	0	4	9
Phenanthrene	ug/Kg	4300	67%	50000*	0	6	9
Anthracene	ug/Kg	1100	56%	50000*	0	5	9
Carbazole	ug/Kg	860	44%	50000*	0	4	9
Di-n-butylphthalate	ug/Kg	70	56%	8100	0	5	9
Fluoranthene	ug/Kg	6200	78%	50000*	0	7	9
Pyrene	ug/Kg	5100	78%	50000*	0	7	9
Benzo(a)anthracene	ug/Kg	2600	56%	220	5	5	9
Chrysene	ug/Kg	2300	56%	400	5	5	9
bis(2-Ethylhexyl)phthalate	ug/Kg	240	67%	50000*	0	6	9
Benzo(b)fluoranthene(l)	ug/Kg	4700	125%	1100	4	5	4
Benzo(a)pyrene	ug/Kg	2100	56%	61	5	5	9
Indeno(1,2,3-cd)pyrene	ug/Kg	1100	44%	3200	0	4	9
Dibenz(a,h)anthracene	ug/Kg	670	44%	14	4	4	9
Benzo(g,h,i)perylene	ug/Kg	760	44%	50000*	0	4	9
PESTICIDES/PCBs							
delta-BHC	ug/Kg	0.94	11%	300	0	1	9
gamma-BHC (Lindane)	ug/Kg	1.3	11%	60	0	1	9
Heptachlor	ug/Kg	5.7	11%	100	0	1	9
Aldrin	ug/Kg	2.4	11%	41	0	1	9
Heptachlor epoxide	ug/Kg	1.1	11%	20	0	1	9
Dieldrin	ug/Kg	3	11%	44	0	1	9
4,4'-DDE	ug/Kg	55	67%	2100	0	6	9
4,4'-DDD	ug/Kg	16	67%	2900	0	6	9
4,4'-DDT	ug/Kg	73	67%	2100	0	6	9
alpha-Chlordane	ug/Kg	16	56%	540	0	5	9
gamma-Chlordane	ug/Kg	19	33%	540	0	3	9
Aroclor-1254	ug/Kg	140	11%	1000/10000 (b)	0	1	9

TABLE 2
SUMMARY OF SOIL ANALYSIS RESULTS – SEAD-09 (CONTINUED)

COMPOUND	UNITS	OF MAXIMUM	FREQUENCY DETECTION	ABOVE TAGM	NUMBER OF TAGM	NUMBER OF DETECTS	NUMBER ANALYSES
METALS							
Aluminum	mg/Kg	15000	100%	19300	0	9	9
Antimony	mg/Kg	0.71	56%	5.9	0	5	9
Arsenic	mg/Kg	8.5	100%	8.2	1	9	9
Barium	mg/Kg	101	100%	300	0	9	9
Beryllium	mg/Kg	0.78	100%	1.1	0	9	9
Cadmium	mg/Kg	1.1	100%	2.3	0	9	9
Calcium	mg/Kg	217000	100%	121000	1	9	9
Chromium	mg/Kg	22.8	100%	29.6	0	9	9
Cobalt	mg/Kg	12	100%	30	0	9	9
Copper	mg/Kg	33	100%	33	0	9	9
Iron	mg/Kg	28600	100%	36500	0	9	9
Lead	mg/Kg	85.1	100%	24.8	4	9	9
Magnesium	mg/Kg	13000	100%	21500	0	9	9
Manganese	mg/Kg	984	100%	1060	0	9	9
Mercury	mg/Kg	0.26	100%	0.1	1	9	9
Nickel	mg/Kg	41.6	100%	49	0	9	9
Potassium	mg/Kg	2140	100%	2380	0	9	9
Selenium	mg/Kg	0.9	78%	2	0	7	9
Sodium	mg/Kg	185	89%	172	1	8	9
Vanadium	mg/Kg	26.8	100%	150	0	9	9
Zinc	mg/Kg	126	100%	110	1	9	9
OTHER ANALYSES							
Total Petroleum Hydrocarbons	mg/Kg	15900	89%		0	8	9
Total Solids	%W/W	93.9	1		0	9	9

NOTES:

a) TAGM = Technical and Administrative Guidance Memorandum HWR-94-4046 (January 24, 1994)

b) The TAGM value for PCBs is 1000ug/kg for surface soils and 10,000 ug/kg for subsurface soils.

c) * = As per proposed TAGM, total VOCs < 10 ppm, total SVOs < 500 ppm, and individual SVOs < 50 ppm.

TABLE 3
SUMMARY OF GROUNDWATER ANALYSIS RESULTS – SEAD-09

COMPOUND	UNITS	MAXIMUM	FREQUENCY OF DETECTION	CRITERIA LEVEL	NUMBER ABOVE CRITERIA	NUMBER OF DETECTIONS	NUMBER OF ANALYSES
METALS							
Aluminum	ug/L	5000	100%	50 (a)	NA	2	2
Arsenic	ug/L	1.6	50%	3 (b)	0	1	2
Barium	ug/L	105	100%	1000 (b)	0	2	2
Beryllium	ug/L	0.13	50%	4 (c)	0	1	2
Calcium	ug/L	192000	100%	NA	NA	2	2
Chromium	ug/L	8.4	100%	50 (b)	0	2	2
Cobalt	ug/L	5.6	100%	NA	NA	2	2
Copper	ug/L	5.4	100%	200 (b)	0	2	2
Iron	ug/L	9350	100%	300 (b)	2	2	2
Lead	ug/L	1.7	50%	25 (b)	0	1	2
Magnesium	ug/L	30900	100%	NA	NA	2	2
Manganese	ug/L	411	100%	50 (a)	1	2	2
Nickel	ug/L	13	100%	100 (b)	0	2	2
Potassium	ug/L	2700	100%	NA	NA	2	2
Silver	ug/L	1	50%	50 (b)	0	1	2
Sodium	ug/L	106000	100%	20000 (b)	2	2	2
Vanadium	ug/L	7	100%	NA	NA	2	2
Zinc	ug/L	29.1	100%	5000 (a)	0	2	2
OTHER ANALYSES							
Total Petroleum Hydrocarbons	mg/L	3	100%	NA	NA	2	2
pH	Standard Units	7.7	100%	NA	NA	2	2
Conductivity	umhos/cm	1100	100%	NA	NA	2	2
Temperature	°C	14.1	100%	NA	NA	2	2
Turbidity	NTU	309	100%	NA	NA	2	2

NOTES:

a) Secondary Drinking Water Regulations

b) NY State Class GA Groundwater Regulations

c) Maximum Contaminant Level
NA = Not Available

TABLE 4
SUMMARY OF TOTAL NONCARCINOGENIC AND CARCINOGENIC RISKS – SEAD-09

INDUSTRIAL USE SCENARIO				RESIDENTIAL SCENARIO			
RECEPTOR	EXPOSURE ROUTE	HAZARD Index INDEX	CANCER RISK	RECEPTOR	EXPOSURE ROUTE	HAZARD Index INDEX	CANCER RISK [1]
INDUSTRIAL WORKER	Inhalation of Dust in Ambient Air	2E-6	1E-10	RESIDENTIAL ADULT	Inhalation of Dust in Ambient Air	6E-6	4E-10
	Ingestion of Soil	8E-3	4E-6		Ingestion of Soil	1E-2	2E-5
	Dermal Contact to Soil	3E-2	4E-7		Dermal Contact to Soil	4E-2	7E-7
	Ingestion of Groundwater	NQ	NQ		Inhalation of Groundwater	NQ	NQ
	TOTAL RECEPTOR RISK (Nc & Car)	**3E-2**	**4E-6**		Ingestion of Groundwater	NQ	NQ
					Dermal Contact of Groundwater	NQ	NQ
CONSTRUCTION WORKER	Inhalation of Dust in Ambient Air	5E-5	5E-11		**TOTAL RECEPTOR RISK (Nc & Car)**	**5E-2**	**2E-5**
	Ingestion of Soil	4E-2	2E-6				
	Dermal Contact to Soil	3E-2	2E-8	RESIDENTIAL CHILD	Inhalation of Dust in Ambient Air	1E-5	
	TOTAL RECEPTOR RISK (Nc & Car)	**7E-2**	**2E-6**		Ingestion of Soil	1E-1	
					Dermal Contact to Soil	7E-2	
WORKER AT ON-SITE DAY CARE CENTER	Inhalation of Dust in Ambient Air	2E-6	8E-11		Inhalation of Groundwater	NQ	
	Ingestion of Soil	8E-3	4E-6		Ingestion of Groundwater	NQ	
	Dermal Contact to Soil	3E-2	4E-7		Dermal Contact of Groundwater	NQ	
	Ingestion of Groundwater	NQ	NQ		**TOTAL RECEPTOR RISK (Nc & Car)**	**2E-1**	
	TOTAL RECEPTOR RISK (Nc & Car)	**3E-2**	**4E-6**				
CHILD AT ON-SITE DAY CARE CENTER	Inhalation of Dust in Ambient Air	4E-6	5E-11				
	Ingestion of Soil	7E-2	9E-6				
	Dermal Contact to Soil	5E-2	2E-7				
	Ingestion of Groundwater	NQ	NQ				
	TOTAL RECEPTOR RISK (Nc & Car)	**1E-1**	**9E-6**				

Note: NQ = Not qualified due to lack of toxicity data.

1. Cancer risk was calculated for resident (ages 0-70 yr).

TABLE 5
ASH SAMPLE ANALYSIS RESULTS - SEAD-10

Parameter	Sample ID AA18459 Submitted: 09/29/92 Matrix: Wood Ash Results	Method Detection Limit	Regulatory Limits (mg/L)
TCLP Arsenic	0.16 mg/L	0.01 mg/L	5.0
TCLP Barium	0.27 mg/L	0.01 mg/L	100.0
TCLP Cadmium	Not Detected	0.01 mg/L	1.0
TCLP Chromium	0.47 mg/L	0.01 mg/L	5.0
TCLP Lead	Not Detected	0.01 mg/L	5.0
TCLP Mercury	Not Detected	0.005 mg/L	0.2
TCLP Selenium	Not Detected	0.01 mg/L	1.0
TCLP Silver	Not Detected	0.01 mg/L	5.0
Total TCLP Volatiles (11 Compounds Reported)	Not Detected	5 ug/L per analyte	
Total TCLP Semivolatiles (11 Compounds Reported)	Not Detected	10 to 50 ug/L per analyte	
Total TCLP Pesticides (7 Compound Reported)	Not Detected	0.05 to 1.0 ug/L per analyte	
Total TCLP Herbicides (2 Compounds Reported)	Not Detected	1 to 5 ug/L per analyte	
Free Liquids	Negative	-----	
Flash Point	Greater than 200 degrees F	-----	>140 degrees F for liquid
Percent Solids	96.7%	-----	
pH	12.4	-----	between 2 and 12.5 for aqueous
Corrosivity	Negative	-----	pH between 2 and 12.5 for aqueous
Reactivity – Cyanide	Not Detected	0.5 mg/Kg	
Reactivity – Sulfide	Not Detected	10 mg/Kg	
Reactivity	Negative	-----	

Note: Regulatory limits from 40CFR261.24, 40CFR261.21, 40CFR261.22.

TABLE 6
SUMMARY OF SOIL ANALYSIS RESULTS – SEAD-28

PARAMETER	UNIT	Maximum Conc	Frequency of Detection	NYSDEC TAGM Criteria (1)	Number above Criteria (1)	Times Detected	Times Analyzed
SEMI VOLATILE ORGANICS							
Analyses were performed on one samples for 14 PAHs. None of the PAHs was detected in the sample.							

(1) The TAGM Criteria are identified in NYSDEC's Technical and Administrative Guidance Memorandum #4046, Determination of Soil Cleanup Objectives and Cleanup Levels, Jan 24, 1994.

TABLE 7
SUMMARY OF SOIL ANALYSIS RESULTS – SEAD-32

PARAMETER	UNIT	Maximum Conc	Frequency of Detection	NYSDEC TAGM Criteria (1)	Number above Criteria (1)	Times Detected	Times Analyzed
VOLATILE ORGANICS							
Methylene Chloride	ug/kg	1	50%	100	0	1	2
Analyses were performed on two samples for 33 Volatile Organic Compounds. None of the Volatile Organic Compounds was detected in either of the samples with the exception of methylene chloride, as listed above.							
OTHER ANALYTES							
Total Solids	%W/W	83.2	100%	NA	0	2	2
Total Petroleum Hydrocarbons	mg/Kg	90	100%	NA	0	2	2

(1) The TAGM Criteria are identified in NYSDEC's Technical and Administrative Guidance Memorandum #4046, Determination of Soil Cleanup Objectives and Cleanup Levels, Jan 24, 1994.
NA means "Not Available."

TABLE 8
SUMMARY OF GROUNDWATER ANALYSIS RESULTS – SEAD-32

COMPOUND	UNIT	Maximum Conc	Frequency of Detection	NYSDEC GA Standard (1)	Number above Standard (1)	Times Detected	Times Analyzed
VOLATILE ORGANICS							
Analyses were performed on three samples for 33 Volatile Organic Compounds. None of the Volatile Organic Compounds was detected in any of the three samples.							
OTHER ANALYTES							
Total Petroleum Hydrocarbons	mg/L	0.69	67%	NA	0	2	3

(1) The TAGM Criteria are identified in NYSDEC's Technical and Administrative Guidance Memorandum #4046, Determination of Soil Cleanup Objectives and Cleanup Levels, Jan 24, 1994.
(1) The GA Standards are identified in NYSDEC's Division of Water Technical and Operational Guidance Series 1.1.1 (TOGS 1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, June 1998 as amended January 1999 and April 2000.

TABLE 9
SUMMARY OF SOIL ANALYSIS RESULTS – SEAD-33

COMPOUND	UNIT	Maximum Conc	Frequency of Detection	NYSDEC GA Standard (1)	Number above Standard (1)	Times Detected	Times Analyzed
VOLATILE ORGANICS							
Analyses were performed on three samples for 33 Volatile Organic Compounds. None of the Volatile Organic Compounds was detected in any of the three samples.							
OTHER ANALYTES							
Total Petroleum Hydrocarbons	mg/kg	470	100%	NA	0	2	2

(1) The GA Standards are identified in NYSDEC's Division of Water Technical and Operational Guidance Series 1.1.1 (TOGS 1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, June 1998 as amended January 1999 and April 2000.

TABLE 10
SUMMARY OF SOIL AND GROUNDWATER ANALYSIS RESULTS – SEAD-34

COMPOUND	UNIT	Maximum Conc	Frequency of Detection	NYSDEC GA Standard (1)	Number above Standard (1)	Times Detected	Times Analyzed
Soil							
VOLATILE ORGANICS							
Analyses were performed on three samples for 33 Volatile Organic Compounds. None of the Volatile Organic Compounds was detected in any of the three samples.							
OTHER ANALYTES							
Total Petroleum Hydrocarbons	mg/kg	93	100%	NA	0	2	2
Groundwater							
VOLATILE ORGANICS							
Analyses were performed on three samples for 33 Volatile Organic Compounds. None of the Volatile Organic Compounds was detected in any of the three samples.							
OTHER ANALYTES							
Total Petroleum Hydrocarbons	mg/L	0	0%	NA	0	0	2

(1) The TAGM Criteria are identified in NYSDEC's Technical and Administrative Guidance Memorandum #4046, Determination of Soil Cleanup Objectives and Cleanup Levels, Jan 24, 1994.

(2) The GA Standards are identified in NYSDEC's Division of Water Technical and Operational Guidance Series 1.1.1 (TOGS 1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, June 1998 as amended January 1999 and April 2000.

TABLE 11
SUMMARY OF RADIOLOGICAL DATA FOR BUILDING 806 – SEAD-47

Identification		DPM		
Location	Sample Number	Alpha	Beta	Gamma
806V1A	124145	0.0	3.4	0.0
806V2	124146	0.0	0.0	0.0
806V3	124147	0.0	0.0	0.0
806V4	124148	0.0	2.8	0.0
806V5	124149	0.0	0.0	0.0
806V6	124150	0.0	0.0	0.0
806V7	124151	0.0	0.0	0.0
806V8	124152	1.0	4.3	0.0
806V9	124153	0.0	0.0	0.0
806V10	124154	0.0	4.3	0.0
806V11	124155	0.0	2.8	0.0
806V12	124156	0.0	5.2	0.0
806V1B	124157	0.0	2.8	0.0
806D1	124158	0.0	0.0	0.0
806V13	124159	0.0	2.8	0.0
806V14	124160	0.0	0.0	0.0
806V15	124161	0.0	6.6	0.0
806V16	124162	0.0	0.0	0.0
806V19	124163	0.0	2.8	0.0

Sample Code - "806V1" indicates that sample was collected from Building 806 at location V1.
V indicates vent from building. D indicates floor drain.

Refer to Appendix F of Draft Final Decision Document, Twenty-Six No Further Action Sites, Seneca Army Depot Activity (Parsons, 2001) for original copy of data.

TABLE 12
SUMMARY OF RADIOLOGICAL SURVEY RESULTS FOR BUILDING 356 – SEAD-49

SURVEY METER READINGS		
Location	**Ludlum MicroR Meter micro Rems per hour (microR/hr)**	**EM Survey Meter Counts per minute (cpm)**
Background	4 – 15	20 – 40
Building 356, Section 4, wipe #1	12	20
Building 356, Section 4, wipe #2	12	----
Building 356, Section 4, wipe #3	9.4	20
WIPE SAMPLE RESULTS		
Location	**Gross Alpha Decays per minute (dpm)**	**EM Survey Meter Dpm**
Building 356, Section 4, wipe #1	Less than 20	Less than 20
Building 356, Section 4, wipe #2	Less than 20	Less than 20
Building 356, Section 4, wipe #3	Less than 20	Less than 20

TABLE 13
SUMMARY OF HERBICIDE ANALYSIS RESULTS – SEAD-51

Sample Type and Location	Pesticide Concentration	Sample Type and Location	Pesticide Concentration
Soil, SW Corner Inner Fence Surface	ND[2]	Soil, South Boundary Fresh Excavation Surface	2,4-D 0.055ppm 2,4,5-T 0.011ppm
Soil, SW Corner Inner Fence 3" depth	ND[2]	Soil, NE Corner Outer Fence Surface	ND[2]
Soil, NW Corner Inner Fence Surface	ND[2]	Soil, NE Corner Outer Fence 6" depth	ND[2]
Soil, NW Corner Inner Fence 3" depth	ND[2]	Soil, NE Corner Outer Fence 12' depth	ND[2]
Soil, SE Corner Inner Fence Surface	2,4-D 0.04ppm 2,4,5-T 0.008ppm	Soil, NW Corner Outer Fence Surface	ND[2]
Soil, SE Corner Inner Fence 4" depth	ND[2]	Soil, NW Corner Outer Fence 3" depth	ND[2]
Soil, NE Corner Inner Fence Surface	ND[2]	Water, SW Corner Inner Fence	ND[2]
Soil, NE Corner Inner Fence 4" depth	ND[2]	Air, NW Corner Inner Fence	ND[2]
Soil, Middle East Side Inner Fence Surface	2,4-D 0.078ppm	Air, SE Corner Inner Fence	ND[2]
Soil, Middle East Side Inner Fence 4" depth	ND[2]		

Notes:

1. Samples were collected August 10-11, 1983. Two air samples, 16 soil samples, and one water sample were collected from the area between the fences of the high security area at SEAD.
2. No pesticides detected at the detection limits.

TABLE 14
STORAGE IGLOOS INCLUDED IN RADIOLOGICAL SURVEY NRC LICENSE TERMINATION SURVEYS SENECA ARMY DEPOT ACTIVITY AREA – SEAD-53

IGLOO NUMBER[a, b]				
A0201	B0709	C0510	D0107	E0112
A0316	B0711	C0511	D0108	E0211
A0317	B0801	C0513	D0110	E0301
A0508	B0802	C0603	D0113	E0302
A0701[c]	B0804	C0604	D0206	E0303
A0706	B0809	C0605	D0207	E0312
A0707	B0810	C0606	D0305	E0402
A0710	B0811	C0608	D0306	E0410
A0711	B0909	C0701	D0312	E0411
A0901	C0203	C0706	D0401	E0413
A0905	C0303	C0707	D0406	E0504
A1108	C0307	C0708	D0407	E0506
A1109	C0308	C0801	D0413	E0508
B0109	C0401	C0803	D0601	E0510
B0411	C0403	C0807	D0604	E0512
B0501	C0405	C0809	D0607	E0602
B0602	C0406	C0901	D0704	E0604
B0603	C0407	C0902	D0705	E0609
B0609	C0408	C0906	D0711	E0610
B0610	C0501	C0907	D0712	E0702
B0701	C0503	C0808	D0801	E0706
B0705	C0504	C0909	D0805	E0711
B0707	C0505	D0104	E0103	E0801
B0708	C0508	D0105	E0105	E0802

Notes:

a) Unless otherwise noted, igloos were used for storage of packaged DU ammunition under NRC license SUC-1275.
b) The list of igloos requiring surveying under the SEDA NRC License Termination program was compiled from *Seneca Army Depot-License Termination and License Release Plan*, ANL, January 2002.

c) Igloo A0701 was used for the storage of light anti-tank rockets that contained Promethium-147 under license BML 12-00722-07.

d) E0801 and E0802 are within SEAD-48 and A0201, A0316, A0317, and A0508 are within SEAD-12.

TABLE 15
SUMMARY OF RADIOLOGICAL SURVEY RESULTS FOR BUILDING 357 – SEAD-55

SURVEY METER READINGS		
Location	**Ludlum MicroR Meter micro Rems per hour (microR/hr)**	**EM Survey Meter Counts per minute (cpm)**
Background	4 – 15	20 – 40
Building 357, Section 4, wipe #2	6	20
Building 357, Section 4, wipe #3	6	20
WIPE SAMPLE RESULTS		
Location	**Gross Alpha Decays per minute (dpm)**	**EM Survey Meter Dpm**
Building 357, Section 4, wipe #2	Less than 20	Less than 20
Building 357, Section 4, wipe #3	Less than 20	Less than 20

TABLE 16
SUMMARY OF SOIL ANALYSIS RESULTS – SEAD-60

Parameter	Units	Maximum Concentration	Frequency of Detection	NYSDEC TAGM Criteria (1)	Number Exceeding Criteria (1)	Number of Times Detected	Number of Analyses
VOLATILES							
Acetone	ug/Kg	160	8%	200	0	1	12
Carbon disulfide	ug/Kg	2	17%	2700	0	2	12
Ethyl benzene	ug/Kg	2	17%	5500	0	2	12
Methyl butyl ketone	ug/Kg	1	8%		0	1	12
Methyl ethyl ketone	ug/Kg	20	8%	300	0	1	12
Methylene chloride	ug/Kg	54	42%	100	0	5	12
Tetrachloroethene	ug/Kg	3	8%	1400	0	1	12
Toluene	ug/Kg	13	33%	1500	0	4	12
Total Xylenes	ug/Kg	5	8%	1200	0	1	12
SEMIVOLATILES							
2-Methylnaphthalene	ug/Kg	1100	8%	36400	0	1	12
Acenaphthene	ug/Kg	1400	17%	50000	0	2	12
Anthracene	ug/Kg	2000	25%	50000	0	3	12
Benzo(a)anthracene	ug/Kg	340	17%	224	1	2	12
Benzo(a)pyrene	ug/Kg	350	17%	61	2	2	12
Benzo(b)fluoranthene	ug/Kg	16000	33%	1100	2	4	12
Benzo(ghi)perylene	ug/Kg	1600	25%	50000	0	3	12
Benzo(k)fluoranthene	ug/Kg	190	8%	1100	0	1	12
Bis(2-Ethylhexyl)phthalate	ug/Kg	380	42%	50000	0	5	12
Carbazole	ug/Kg	79	8%		0	1	12
Chrysene	ug/Kg	17000	42%	400	2	5	12
Di-n-butylphthalate	ug/Kg	1500	25%	8100	0	3	12
Dibenz(a,h)anthracene	ug/Kg	1100	25%	14	3	3	12
Dibenzofuran	ug/Kg	29	8%	6200	0	1	12
Fluoranthene	ug/Kg	14000	67%	50000	0	8	12
Fluorene	ug/Kg	1300	17%	50000	0	2	12
Indeno(1,2,3-cd)pyrene	ug/Kg	1100	25%	3200	0	3	12
Naphthalene	ug/Kg	38	8%	13000	0	1	12
Phenanthrene	ug/Kg	8900	50%	50000	0	6	12
Pyrene	ug/Kg	27000	83%	50000	0	10	12

(1) The TAGM Criteria are identified in NYSDEC's Technical and Administrative Guidance Memorandum #4046, Determination of Soil Cleanup Objectives and Cleanup Levels, Jan 24, 1994.

TABLE 16
SUMMARY OF SOIL ANALYSIS RESULTS – SEAD-60 (continued)

Parameter	Units	Maximum Concentration	Frequency of Detection	NYSDEC TAGM Criteria (1)	Number Exceeding Criteria (1)	Number of Times Detected	Number of Analyses
PESTICIDES							
4,4'-DDD	ug/Kg	100	25%	2900	0	3	12
4,4'-DDE	ug/Kg	110	50%	2100	0	6	12
4,4'-DDT	ug/Kg	130	33%	2100	0	4	12
Aldrin	ug/Kg	16	17%	41	0	2	12
Alpha-BHC	ug/Kg	5	8%	110	0	1	12
Alpha-Chlordane	ug/Kg	27	25%		0	3	12
Aroclor-1242	ug/Kg	970	8%		0	1	12
Aroclor-1248	ug/Kg	2100	8%		0	1	12
Aroclor-1260	ug/Kg	4400	25%	10000	0	3	12
Endosulfan I	ug/Kg	34	42%	900	0	5	12
Endrin ketone	ug/Kg	14	17%		0	2	12
Gamma-Chlordane	ug/Kg	10	17%	540	0	2	12
METALS							
Aluminum	mg/Kg	14100	100%	19300	0	12	12
Antimony	mg/Kg	1.8	67%	5.9	0	8	12
Arsenic	mg/Kg	8.1	100%	8.2	0	12	12
Barium	mg/Kg	679	100%	300	3	12	12
Beryllium	mg/Kg	0.67	100%	1.1	0	12	12
Cadmium	mg/Kg	2	100%	2.3	0	12	12
Calcium	mg/Kg	102000	100%	121000	0	12	12
Chromium	mg/Kg	23.3	100%	29.6	0	12	12
Cobalt	mg/Kg	13.1	100%	30	0	12	12
Copper	mg/Kg	190	100%	33	3	12	12
Iron	mg/Kg	32100	100%	36500	0	12	12
Lead	mg/Kg	66.7	100%	24.8	4	12	12
Magnesium	mg/Kg	25400	100%	21500	1	12	12
Manganese	mg/Kg	536	100%	1060	0	12	12
Mercury	mg/Kg	0.08	83%	0.1	0	10	12
Nickel	mg/Kg	44.3	100%	49	0	12	12
Potassium	mg/Kg	1920	100%	2380	0	12	12
Selenium	mg/Kg	1.5	33%	2	0	4	12
Sodium	mg/Kg	140	100%	172	0	12	12
Vanadium	mg/Kg	26.2	100%	150	0	12	12
Zinc	mg/Kg	569	100%	110	4	12	12

(1) The TAGM Criteria are identified in NYSDEC's Technical and Administrative Guidance Memorandum #4046, Determination of Soil Cleanup Objectives and Cleanup Levels, Jan 24, 1994.

TABLE 17
SUMMARY OF GROUNDWATER ANALYSIS RESULTS – SEAD-60

Parameter	Units	Maximum Concentration	Frequency of Detection	Type of Standard	Standard Level (1)	Number Exceeding Standard	Number of Times Detected	Number of Analyses
Volatile Organics								
Acetone	ug/L	77	75%			0	3	4
Benzene	ug/L	1	25%	GA	1	0	1	4
Pesticides								
Beta-BHC	ug/L	0.049	25%	GA	0.04	1	1	4
Metals								
Aluminum	ug/L	376	100%	SEC	50	3	4	4
Barium	ug/L	88.7	100%	GA	1000	0	4	4
Calcium	ug/L	113000	100%			0	4	4
Chromium	ug/L	0.56	50%	GA	50	0	2	4
Cobalt	ug/L	0.72	25%			0	1	4
Copper	ug/L	0.99	25%	GA	200	0	1	4
Iron	ug/L	1440	100%	GA	300	4	4	4
Magnesium	ug/L	55100	100%			0	4	4
Manganese	ug/L	377	100%	SEC	50	4	4	4
Mercury	ug/L	0.05	50%	GA	0.7	0	2	4
Nickel	ug/L	1.6	25%	GA	100	0	1	4
Potassium	ug/L	8760	100%			0	4	4
Sodium	ug/L	59400	100%	GA	20000	1	4	4
Thallium	ug/L	1.8	25%	MCL	2	0	1	4
Vanadium	ug/L	1.5	50%			0	2	4
Zinc	ug/L	6.9	75%	SEC	5000	0	3	4

(1) GA – State of New York GA Groundwater Standard, NYSDEC TOGS 1.1.1, 1998 as amended in 1999 and 2000
MCL –Maximum Contaminant Level, National Primary Drinking Water Standards, EPA 816-F-01-007, March 2001
SEC –Secondary Drinking Water Regulations, EPA 810/K-92-001, July 1992.

TABLE 18
SUMMARY OF SURFACE WATER ANALYSIS RESULTS – SEAD-60

Parameter	Units	Maximum Concentration	Frequency of Detection	Type of Standard (1)	Standard Level	Number Exceeding Standard	Number of Times Detected	Number of Analyses
METALS								
Aluminum	ug/L	259	100%	AWQS CLASS C	100	1	4	4
Arsenic	ug/L	1.6	25%	AWQS CLASS C	150	0	1	4
Barium	ug/L	49.4	100%			0	4	4
Calcium	ug/L	89000	100%			0	4	4
Chromium	ug/L	0.68	50%	AWQS CLASS C	139.45	0	2	4
Copper	ug/L	2	100%	AWQS CLASS C	17.32	0	4	4
Iron	ug/L	453	100%	AWQS CLASS C	300	1	4	4
Magnesium	ug/L	22000	100%			0	4	4
Manganese	ug/L	28.5	100%			0	4	4
Nickel	ug/L	1.8	75%	AWQS CLASS C	99.92	0	3	4
Potassium	ug/L	1430	100%			0	4	4
Sodium	ug/L	53800	100%			0	4	4
Vanadium	ug/L	0.85	25%	AWQS CLASS C	14	0	1	4
Zinc	ug/L	9.6	100%	AWQS CLASS C	159.25	0	4	4

(1) State of New York Class C, Aquatic Species, NYSDEC TOGS 1.1.1, 1998 as amended in 1999 and 2000.

TABLE 19
SUMMARY OF SEDIMENT ANALYSIS RESULTS – SEAD-60

Parameter	Units	Maximum Concen-tration	Frequency of Detection	Type of Standard (1)	Standard Level	Number Exceeding Standard	Number of Times Detected	Number of Analyses
VOLATILES								
Chloroform	ug/Kg	3	25%			0	1	4
SEMIVOLATILES								
Benzo(a)anthracene	ug/Kg	68	75%	HHBAC	50.8	3	3	4
Benzo(a)pyrene	ug/Kg	79	75%	HHBAC	50.8	3	3	4
Benzo(b)fluoranthene	ug/Kg	120	75%	HHBAC	50.8	3	3	4
Benzo(ghi)perylene	ug/Kg	93	75%			0	3	4
Benzo(k)fluoranthene	ug/Kg	97	75%	HHBAC	50.8	3	3	4
Bis(2-Ethylhexyl)phthalate	ug/Kg	1100	100%	BALCTC	7801	0	4	4
Chrysene	ug/Kg	160	75%	HHBAC	50.8	3	3	4
Fluoranthene	ug/Kg	200	75%	BALCTC	39887	0	3	4
Indeno(1,2,3-cd)pyrene	ug/Kg	68	75%	HHBAC	50.8	2	3	4
Phenanthrene	ug/Kg	70	75%	BALCTC	4693	0	3	4
Pyrene	ug/Kg	250	75%	BALCTC	37580	0	3	4
PESTICIDES								
4,4'-DDE	ug/Kg	5.4	50%	HHBAC	0.39	2	2	4
4,4'-DDT	ug/Kg	3.4	50%	HHBAC	0.39	2	2	4
Alpha-Chlordane	ug/Kg	1.9	25%	HHBAC	0.04	1	1	4
Endosulfan I	ug/Kg	2.1	50%	BALCTC	1.17	2	2	4
METALS								
Aluminum	mg/Kg	12700	100%			0	4	4
Arsenic	mg/Kg	4.8	100%	LEL	6	0	4	4
Barium	mg/Kg	97.6	100%			0	4	4
Beryllium	mg/Kg	0.62	100%			0	4	4
Cadmium	mg/Kg	0.44	100%	LEL	0.6	0	4	4
Calcium	mg/Kg	227000	100%			0	4	4
Chromium	mg/Kg	19.5	100%	LEL	26	0	4	4
Cobalt	mg/Kg	9.6	100%			0	4	4
Copper	mg/Kg	21.1	100%	LEL	16	1	4	4
Cyanide	mg/Kg	3.3	50%			0	2	4
Iron	mg/Kg	25000	100%	LEL	20000	2	4	4
Lead	mg/Kg	24.6	100%	LEL	31	0	4	4
Magnesium	mg/Kg	8380	100%			0	4	4
Manganese	mg/Kg	509	100%	LEL	460	2	4	4
Mercury	mg/Kg	0.05	75%	LEL	0.15	0	3	4
Nickel	mg/Kg	27.2	100%	LEL	16	3	4	4
Potassium	mg/Kg	1610	100%			0	4	4
Sodium	mg/Kg	134	75%			0	3	4
Thallium	mg/Kg	0.55	25%			0	1	4
Vanadium	mg/Kg	23.9	100%			0	4	4
Zinc	mg/Kg	101	100%	LEL	120	0	4	4

(1) NYSDEC Technical Guidance for Screening Contaminated Sediments, November 1993, as amended July 1994, March 1998, and January 1999.
BALCTC = Benthic Aquatic Life Chronic Toxicity Criteria
HHBAC = Human Health Bioaccumulation Criteria
LEL = Lowest Effect Level

TABLE 20
SUMMARY OF SOIL ANALYSIS RESULTS– SEAD-64A

COMPOUND	UNIT	MAXIMUM	FREQUENCY OF DETECTION	TAGM (a)(b)	NUMBER ABOVE TAGM	NUMBER OF DETECTS	NUMBER OF ANALYSES
VOLATILE ORGANICS							
Benzene	UG/KG	2	8.33%	60	0	1	12
Toluene	UG/KG	2	8.33%	1500	0	1	12
Trichloroethene	UG/KG	1	8.33%	700	0	1	12
SEMIVOLATILE ORGANICS							
2-Methylnaphthalene	UG/KG	2900	33.33%	36400	0	4	12
Acenaphthene	UG/KG	1300	33.33%	50000	0	4	12
Acenaphthylene	UG/KG	400	33.33%	41000	0	4	12
Anthracene	UG/KG	1900	41.67%	50000	0	5	12
Benzo(a)anthracene	UG/KG	5600	41.67%	224	4	5	12
Benzo(a)pyrene	UG/KG	5400	58.33%	61	5	7	12
Benzo(b)fluoranthene	UG/KG	9600	41.67%	1100	3	5	12
Benzo(ghi)perylene	UG/KG	4000	58.33%	50000	0	7	12
Benzo(k)fluoranthene	UG/KG	5900	33.33%	1100	1	4	12
Bis(2-Ethylhexyl)phthalate	UG/KG	13000	75.00%	50000	0	9	12
Carbazole	UG/KG	780	41.67%	NA	0	5	12
Chrysene	UG/KG	4800	50.00%	400	4	6	12
Di-n-butylphthalate	UG/KG	290	8.33%	8100	0	1	12
Dibenz(a,h)anthracene	UG/KG	1500	50.00%	14	6	6	12
Dibenzofuran	UG/KG	1400	25.00%	6200	0	3	12
Fluoranthene	UG/KG	11000	50.00%	50000	0	6	12
Fluorene	UG/KG	4100	41.67%	50000	0	5	12
Indeno(1,2,3-cd)pyrene	UG/KG	3500	50.00%	3200	1	6	12
Naphthalene	UG/KG	3800	25.00%	13000	0	3	12
Phenanthrene	UG/KG	15000	50.00%	50000	0	6	12
Phenol	UG/KG	44	8.33%	30	1	1	12
Pyrene	UG/KG	8700	50.00%	50000	0	6	12
PESTICIDES/PCBs							
4,4'-DDD	UG/KG	3.7	8.33%	2900	0	1	12
4,4'-DDE	UG/KG	9	25.00%	2100	0	3	12
4,4'-DDT	UG/KG	24	33.33%	2100	0	4	12
Alpha-Chlordane	UG/KG	6.3	25.00%	NA	0	3	12
Dieldrin	UG/KG	7.5	16.67%	44	0	2	12
Endosulfan I	UG/KG	33	41.67%	900	0	5	12
Endosulfan sulfate	UG/KG	5	16.67%	1000	0	2	12
Heptachlor epoxide	UG/KG	1.9	8.33%	20	0	1	12
METALS							
Aluminum	MG/KG	19800	100.00%	19300	1	12	12
Antimony	MG/KG	4.3	25.00%	5.9	0	3	12
Arsenic	MG/KG	8.4	100.00%	8.2	1	12	12
Barium	MG/KG	133	100.00%	300	0	12	12
Beryllium	MG/KG	0.8	100.00%	1.1	0	12	12
Cadmium	MG/KG	1	91.67%	2.3	0	11	12
Calcium	MG/KG	72400	100.00%	121000	0	12	12
Chromium	MG/KG	35.5	100.00%	29.6	1	12	12
Cobalt	MG/KG	14	100.00%	30	0	12	12
Copper	MG/KG	56.3	100.00%	33	1	12	12
Iron	MG/KG	35900	100.00%	36500	0	12	12
Lead	MG/KG	391	83.33%	24.8	1	10	12
Magnesium	MG/KG	14800	100.00%	21500	0	12	12
Manganese	MG/KG	968	100.00%	1060	0	12	12
Mercury	MG/KG	0.1	100.00%	0.1	0	12	12
Nickel	MG/KG	36.1	100.00%	49	0	12	12
Potassium	MG/KG	2820	100.00%	2380	4	12	12
Selenium	MG/KG	1.7	83.33%	2	0	10	12
Sodium	MG/KG	92.1	75.00%	172	0	9	12
Thallium	MG/KG	0.42	8.33%	0.7	0	1	12
Vanadium	MG/KG	33.5	100.00%	150	0	12	12
Zinc	MG/KG	167	100.00%	110	1	12	12

NOTES:

a) TAGM = Technical and Administrative Guidance Memorandum HWR-94-4046 (January 24, 1994)

b) * = As per proposed TAGM, total VOCs <10 ppm, total SVOCs < 500 ppm, and individual SVOCs < 50 ppm.

TABLE 21
SUMMARY OF GROUNDWATER ANALYSIS RESULTS (1994) – SEAD-64A

COMPOUND	UNIT	MAXIMUM	FREQUENCY OF DETECTION	CRITERIA LEVELS	NUMBER ABOVE CRITERIA	NUMBER OF DETECTS	NUMBER OF ANALYSES
METALS							
Aluminum	UG/L	1710	100.00%	50 (a)	3	3	3
Barium	UG/L	74.5	100.00%	1000 (b)	0	3	3
Calcium	UG/L	148000	100.00%	NA	0	3	3
Chromium	UG/L	3.8	100.00%	50 (b)	0	3	3
Cobalt	UG/L	4.7	33.33%	NA	0	1	3
Copper	UG/L	1.4	100.00%	200 (b)	0	3	3
Iron	UG/L	3340	100.00%	300 (b)	3	3	3
Magnesium	UG/L	23400	100.00%	NA	0	3	3
Manganese	UG/L	2040	100.00%	50 (a)	1	3	3
Mercury	UG/L	0.06	100.00%	0.7 (b)	0	3	3
Nickel	UG/L	9.6	100.00%	100 (b)	0	3	3
Potassium	UG/L	15000	100.00%	NA	0	3	3
Sodium	UG/L	13000	100.00%	20000 (b)	0	3	3
Thallium	UG/L	3.3	33.33%	2 (c)	1	1	3
Vanadium	UG/L	3	100.00%	NA	0	3	3
Zinc	UG/L	16	100.00%	5000 (a)	0	3	3
OTHER ANALYSES							
pH	Standard Units	7.4	100%		0	3	3
Conductivity	umhos/cm	950	100%		0	3	3
Temperature	°C	21.6	100%		0	3	3
Turbidity	NTU	120	100%		0	3	3

NOTES:

a) Secondary Drinking Water Regulations

b) NY State Class GA Groundwater Regulations

c) Maximum Contaminant Level

NA = Not Available

Table 22
SUMMARY OF GROUNDWATER ANALYSIS RESULTS (2003) – SEAD-64D

TABLE 23
SUMMARY OF TOTAL NONCARCINOGENIC AND CARCINOGENIC RISKS – SEAD-64A

RECREATIONAL USE SCENARIO				RESIDENTIAL SCENARIO			
RECEPTOR	EXPOSURE ROUTE	HAZARD INDEX	CANCER RISK	RECEPTOR	EXPOSURE ROUTE	HAZARD Index INDEX	CANCER RISK[1]
WAREHOUSE WORKER	Inhalation of Dust in Ambient Air	6E-7	7E-11	RESIDENTIAL ADULT	Inhalation of Dust in Ambient Air	2E-6	4E-10
	Ingestion of Soil	1E-3	2E-5		Ingestion of Soil	2E-3	1E-4
	Dermal Contact to Soil	NQ	NQ		Dermal Contact to Soil	NQ	NQ
	Ingestion of Groundwater		NQ		Inhalation of Groundwater	NQ	NQ
	TOTAL RECEPTOR RISK (Nc & Car)	**4E-1**	**2E-5**		Ingestion of Groundwater		NQ
TRESPASSER (CHILD)	Inhalation of Dust in Ambient Air	2E-8	6E-13		Dermal Contact of Groundwater		NQ
	Ingestion of Soil	8E-4	3E-6		**TOTAL RECEPTOR RISK (Nc & Car)**		**1E-4**
	Dermal Contact to Soil	NQ	NQ				
	TOTAL RECEPTOR RISK (Nc & Car)	**8E-4**	**3E-6**	RESIDENTIAL CHILD	Inhalation of Dust in Ambient Air	4E-6	
CONSTRUCTION WORKER	Inhalation of Dust in Ambient Air	7E-5	3E-11		Ingestion of Soil	2E-2	
	Ingestion of Soil	9E-3	4E-6		Dermal Contact to Soil	NQ	
	Dermal Contact to Soil	NQ	NQ		Inhalation of Groundwater	NQ	
	TOTAL RECEPTOR RISK (Nc & Car)	**9E-3**	**4E-6**		Ingestion of Groundwater		
					Dermal Contact of Groundwater		
					TOTAL RECEPTOR RISK (Nc & Car)		

Note: NQ = Not qualified due to lack of toxicity data.

1. Cancer risk was calculated for resident (ages 0-70 yr).

TABLE 24
SUMMARY OF SOIL ANALYSIS RESULTS– SEAD-64B

COMPOUND	UNIT	MAXIMUM	FREQUENCY OF DETECTION	TAGM (a)	NUMBER ABOVE TAGM	NUMBER OF DETECTS	NUMBER OF ANALYSES
VOLATILE ORGANICS							
Acetone	UG/KG	57	17%	200	0	2	12
Carbon disulfide	UG/KG	1	8%	2700	0	1	12
Methyl ethyl ketone	UG/KG	22	8%	300	0	1	12
Methylene chloride	UG/KG	1	8%	100	0	1	12
SEMIVOLATILE ORGANICS							
Benzo(a)anthracene	UG/KG	38	17%	224	0	2	12
Benzo(a)pyrene	UG/KG	39	25%	61	0	3	12
Benzo(b)fluoranthene	UG/KG	29	25%	1100	0	3	12
Benzo(ghi)perylene	UG/KG	110	17%	50000	0	2	12
Benzo(k)fluoranthene	UG/KG	36	25%	1100	0	3	12
Bis(2-Ethylhexyl)phthalate	UG/KG	390	42%	50000	0	5	12
Chrysene	UG/KG	40	25%	400	0	3	12
Di-n-butylphthalate	UG/KG	120	58%	8100	0	7	12
Fluoranthene	UG/KG	46	42%	50000	0	5	12
Indeno(1,2,3-cd)pyrene	UG/KG	29	8%	3200	0	1	12
Phenanthrene	UG/KG	30	17%	50000	0	2	12
Pyrene	UG/KG	64	25%	50000	0	3	12
PESTICIDES							
4,4'-DDE	UG/KG	2.6	8%	2100	0	1	12
4,4'-DDT	UG/KG	2.6	8%	2100	0	1	12
Aldrin	UG/KG	1.6	8%	41	0	1	12
Heptachlor epoxide	UG/KG	1.4	8%	20	0	1	12
METALS							
Aluminum	MG/KG	13400	100%	19300	0	12	12
Antimony	MG/KG	0.3	25%	5.9	0	3	12
Arsenic	MG/KG	5.8	100%	8.2	0	12	12
Barium	MG/KG	105	100%	300	0	12	12
Beryllium	MG/KG	0.56	100%	1.1	0	12	12
Cadmium	MG/KG	0.64	100%	2.3	0	12	12
Calcium	MG/KG	90700	100%	121000	0	12	12
Chromium	MG/KG	22.3	100%	29.6	0	12	12
Cobalt	MG/KG	11.8	100%	30	0	12	12
Copper	MG/KG	23.8	100%	33	0	12	12
Iron	MG/KG	21700	100%	36500	0	12	12
Lead	MG/KG	21.4	100%	24.8	0	12	12
Magnesium	MG/KG	22100	100%	21500	1	12	12
Manganese	MG/KG	492	100%	1060	0	12	12
Mercury	MG/KG	0.05	75%	0.1	0	9	12
Nickel	MG/KG	32.4	100%	49	0	12	12
Potassium	MG/KG	2320	100%	2380	0	12	12
Selenium	MG/KG	0.99	42%	2	0	5	12
Sodium	MG/KG	106	92%	172	0	11	12
Thallium	MG/KG	0.42	17%	0.7	0	2	12
Vanadium	MG/KG	23.3	100%	150	0	12	12
Zinc	MG/KG	85.1	100%	110	0	12	12

NOTE: 1) TAGM = Technical and Administrative Guidance Memorandum HWR-94-4046 (January 24, 1994)

TABLE 25
SUMMARY OF GROUNDWATER ANALYSIS RESULTS– SEAD-64B

COMPOUND	UNIT	MAXIMUM	FREQUENCY OF DETECTION	CRITERIA LEVEL	NUMBER ABOVE CRITERIA	NUMBER OF DETECTS	NUMBER OF ANALYSES
METALS							
Aluminum	UG/L	1530	100%	50 (a)	3	3	3
Arsenic	UG/L	2.2	33%	3 (b)	0	1	3
Barium	UG/L	124	100%	1000 (b)	0	3	3
Calcium	UG/L	200000	100%	NA	0	3	3
Chromium	UG/L	3.1	67%	50 (b)	0	2	3
Cobalt	UG/L	4.4	100%	NA	0	3	3
Copper	UG/L	3.1	100%	200 (b)	0	3	3
Iron	UG/L	5090	100%	300 (b)	2	3	3
Magnesium	UG/L	76000	100%	NA	0	3	3
Manganese	UG/L	559	100%	50 (a)	3	3	3
Nickel	UG/L	7	100%	100 (b)	0	3	3
Potassium	UG/L	4780	100%	NA	0	3	3
Selenium	UG/L	2.7	33%	10 (b)	0	1	3
Sodium	UG/L	17800	100%	20000 (b)	0	3	3
Vanadium	UG/L	2.9	100%	NA	0	3	3
Zinc	UG/L	16.6	100%	5000 (a)	0	3	3

NOTES:

a) Secondary Drinking Water Regulation

b) NY State Class GA Groundwater Regulations

NA = Not Available

TABLE 26
SUMMARY OF SURFACE WATER ANALYSIS RESULTS– SEAD-64B

COMPOUND	UNITS	MAXIMUM	FREQUENCY OF DETECTION	NYS GUIDELINES CLASS C (a)(b)	NUMBER ABOVE CRITERIA	NUMBER OF DETECTS	NUMBER OF ANALYSES
VOLATILE ORGANICS							
Carbon Disulfide	ug/L	2	33%		0	1	3
METALS							
Aluminum	ug/L	141	67%	100	1	2	3
Barium	ug/L	37.8	100%		0	3	3
Calcium	ug/L	61200	100%		0	3	3
Chromium	ug/L	0.42	67%	140	0	2	3
Copper	ug/L	1.5	100%	17.36	0	3	3
Iron	ug/L	331	100%	300	1	3	3
Magnesium	ug/L	10900	100%		0	3	3
Manganese	ug/L	39.2	100%		0	3	3
Nickel	ug/L	1.2	67%	100.16	0	2	3
Potassium	ug/L	1180	100%		0	3	3
Sodium	ug/L	3050	100%		0	3	3
Zinc	ug/L	7.7	100%	159.6	0	3	3
OTHER ANALYSES							
pH	Standard Units	7.9	100%		0	3	3
Conductivity	umhos/cm	293	100%		0	3	3
Temperature	°C	16	100%		0	3	3
Turbidity	NTU	0.6	100%		0	3	3

NOTES:

a) The New York State Ambient Water Quality standards and guidelines for Class C surface water (1998).

b) Hardness dependent values assume a hardness of 217 mg/L.

TABLE 27
SUMMARY OF SEDIMENT ANALYSIS RESULTS – SEAD-64B

COMPOUND	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC Sediment Criteria	NUMBER ABOVE CRITERIA	NUMBER OF DETECTS	NUMBER OF ANALYSES
VOLATILE ORGANICS							
Methylene chloride	UG/KG	6	100%	NA	0	3	3
SEMIVOLATILE ORGANICS							
Benzo(a)pyrene	UG/KG	29	33%	50.8	0	1	3
Benzo(b)fluoranthene	UG/KG	39	33%	50.8	0	1	3
Benzo(k)fluoranthene	UG/KG	30	33%	50.8	0	1	3
Bis(2-Ethylhexyl)phthalate	UG/KG	79	67%	7801	0	2	3
Fluoranthene	UG/KG	55	33%	39887	0	1	3
Phenanthrene	UG/KG	31	33%	4692	0	1	3
Pyrene	UG/KG	32	33%	37580	0	1	3
PESTICIDES/PCBs							
4,4'-DDE	UG/KG	3.3	33%	0.39	1	1	3
Endosulfan I	UG/KG	2.4	33%	1.17	1	1	3
Heptachlor	UG/KG	1.1	33%	0.031	1	1	3
METALS							
Aluminum	MG/KG	12800	100%	NA	0	3	3
Antimony	MG/KG	0.25	33%	2	0	1	3
Arsenic	MG/KG	7.5	100%	6	1	3	3
Barium	MG/KG	102	100%	NA	0	3	3
Beryllium	MG/KG	0.67	100%	NA	0	3	3
Cadmium	MG/KG	0.45	100%	0.6	0	3	3
Calcium	MG/KG	75900	100%	NA	0	3	3
Chromium	MG/KG	19.3	100%	26	0	3	3
Cobalt	MG/KG	11.8	100%	NA	0	3	3
Copper	MG/KG	27	100%	16	2	3	3
Iron	MG/KG	28100	100%	20000	1	3	3
Lead	MG/KG	16.5	100%	31	0	3	3
Magnesium	MG/KG	14100	100%	NA	0	3	3
Manganese	MG/KG	684	100%	460	1	3	3
Mercury	MG/KG	0.19	100%	0.15	1	3	3
Nickel	MG/KG	32	100%	16	3	3	3
Potassium	MG/KG	2190	100%	NA	0	3	3
Sodium	MG/KG	35.5	33%	NA	0	1	3
Vanadium	MG/KG	25.9	100%	NA	0	3	3
Zinc	MG/KG	82.2	100%	120	0	3	3

NOTES:

a) NA = Not Available.

TABLE 28
SUMMARY OF TOTAL NONCARCINOGENIC AND CARCINOGENIC RISKS – SEAD-64B

RECREATIONAL USE SCENARIO				RESIDENTIAL SCENARIO			
RECEPTOR	EXPOSURE ROUTE	HAZARD INDEX	CANCER RISK	RECEPTOR	EXPOSURE ROUTE	HAZARD Index INDEX	CANCER RISK[1]
PARK WORKER	Inhalation of Dust in Ambient Air	7E-11	5E-12	RESIDENTIAL ADULT	Inhalation of Dust in Ambient Air	4E-10	3E-11
	Ingestion of Soil	8E-5	8E-8		Ingestion of Soil	2E-4	5E-7
	Dermal Contact to Soil	NQ	NQ		Dermal Contact to Soil	NQ	NQ
	Dermal Contact to Surface Water	7E-5	NQ		Inhalation of Groundwater	NQ	NQ
	Dermal Contact to Sediment	6E-4	7E-8		Ingestion of Groundwater	NQ	NQ
	TOTAL RECEPTOR RISK (Nc & Car)	**7E-4**	**1E-7**		Dermal Contact of Groundwater	NQ	NQ
RECREATIONAL VISITOR (CHILD)	Inhalation of Dust in Ambient Air	3E-11	4E-13		**TOTAL RECEPTOR RISK (Nc & Car)**	**2E-4**	**5E-7**
	Ingestion of Soil	6E-5	1E-8	RESIDENTIAL CHILD	Inhalation of Dust in Ambient Air	7E-10	
	Dermal Contact to Soil	NQ	NQ		Ingestion of Soil	2E-3	
	Dermal Contact to Surface Water	3E-4	NQ		Dermal Contact to Soil	NQ	
	Dermal Contact to Sediment	2E-3	6E-8		Inhalation of Groundwater	NQ	
	TOTAL RECEPTOR RISK (Nc & Car)	**3E-3**	**7E-8**		Ingestion of Groundwater	NQ	
CONSTRUCTION WORKER	Inhalation of Dust in Ambient Air	1E-9	9E-12		Dermal Contact of Groundwater	NQ	
	Ingestion of Soil	9E-4	3E-8		**TOTAL RECEPTOR RISK (Nc & Car)**	**2E-3**	
	Dermal Contact to Soil	NQ	NQ				
	TOTAL RECEPTOR RISK (Nc & Car)	**9E-4**	**3E-8**				

Note: NQ = Not qualified due to lack of toxicity data.

1. Cancer risk was calculated for resident (ages 0-70 yr).

TABLE 29
SUMMARY OF SOIL ANALYSIS RESULTS – SEAD-64D

COMPOUND	UNIT	MAXIMUM	FREQUENCY OF DETECTION	TAGM (a)	NUMBER ABOVE TAGM	NUMBER OF DETECTS	NUMBER OF ANALYSES
VOLATILE ORGANICS							
Methyl ethyl ketone	UG/KG	8	3%	300	0	1	36
Methylene chloride	UG/KG	3	22%	100	0	8	36
Toluene	UG/KG	1	3%	1500	0	1	36
SEMIVOLATILE ORGANICS							
2-Methylnaphthalene	UG/KG	49	14%	36400	0	5	36
Benzo(a)anthracene	UG/KG	86	22%	224	0	8	36
Benzo(a)pyrene	UG/KG	77	25%	61	3	9	36
Benzo(b)fluoranthene	UG/KG	160	25%	1100	0	9	36
Benzo(ghi)perylene	UG/KG	68	17%	50000	0	6	36
Benzo(k)fluoranthene	UG/KG	110	19%	1100	0	7	36
Bis(2-Ethylhexyl)phthalate	UG/KG	1100	42%	50000	0	15	36
Chrysene	UG/KG	110	28%	400	0	10	36
Di-n-butylphthalate	UG/KG	77	44%	8100	0	16	36
Di-n-octylphthalate	UG/KG	75	3%	50000	0	1	36
Dibenz(a,h)anthracene	UG/KG	40	14%	14	5	5	36
Fluoranthene	UG/KG	240	44%	50000	0	16	36
Indeno(1,2,3-cd)pyrene	UG/KG	61	17%	3200	0	6	36
Naphthalene	UG/KG	31	6%	13000	0	2	36
Phenanthrene	UG/KG	100	33%	50000	0	12	36
Phenol	UG/KG	42	3%	30	1	1	36
Pyrene	UG/KG	160	42%	50000	0	15	36
METALS							
Aluminum	MG/KG	20800	100%	19300	3	36	36
Antimony	MG/KG	0.49	25%	5.9	0	9	36
Arsenic	MG/KG	7.8	100%	8.2	0	36	36
Barium	MG/KG	152	100%	300	0	36	36
Beryllium	MG/KG	0.99	100%	1.1	0	36	36
Cadmium	MG/KG	0.97	100%	2.3	0	36	36
Calcium	MG/KG	162000	100%	121000	3	36	36
Chromium	MG/KG	29.6	100%	29.6	0	36	36
Cobalt	MG/KG	18.6	100%	30	0	36	36
Copper	MG/KG	32.7	100%	33	0	36	36
Iron	MG/KG	36600	100%	36500	1	36	36
Lead	MG/KG	60.7	100%	24.8	3	36	36
Magnesium	MG/KG	16300	100%	21500	0	36	36
Manganese	MG/KG	1790	100%	1060	2	36	36
Mercury	MG/KG	0.08	69%	0.1	0	25	36
Nickel	MG/KG	41.8	100%	49	0	36	36
Potassium	MG/KG	3240	100%	2380	3	36	36
Selenium	MG/KG	2	81%	2	0	29	36
Sodium	MG/KG	266	86%	172	1	31	36
Thallium	MG/KG	0.76	44%	0.7	2	16	36
Vanadium	MG/KG	35.3	100%	150	0	36	36
Zinc	MG/KG	111	100%	110	1	36	36

NOTE: a) TAGM = Technical and Administrative Guidance Memorandum HWR-94-4046 (January 24, 1994)

TABLE 30
SUMMARY OF GROUNDWATER ANALYSIS RESULTS (1994) – SEAD-64D

COMPOUND	UNIT	MAXIMUM	FREQUENCY OF DETECTION	CRITERIA VALUE	NUMBER ABOVE CRITERIA	NUMBER OF DETECTS	NUMBER OF ANALYSES
METALS							
Aluminum	UG/L	30100	100%	50 (a)	5	5	5
Antimony	UG/L	1.5	20%	3 (b)	0	1	5
Arsenic	UG/L	10	20%	10 (c)	0	1	5
Barium	UG/L	693	100%	1000 (b)	0	5	5
Beryllium	UG/L	3.1	20%	4 (c)	0	1	5
Cadmium	UG/L	1.3	40%	5 (b)	0	2	5
Calcium	UG/L	902000	100%	NA (d)	0	5	5
Chromium	UG/L	47.1	80%	50 (b)	0	4	5
Cobalt	UG/L	82.3	100%	NA (d)	0	5	5
Copper	UG/L	41.3	80%	200 (b)	0	4	5
Iron	UG/L	65800	100%	300 (b)	5	5	5
Lead	UG/L	71.6	40%	25 (b)	1	2	5
Magnesium	UG/L	35900	100%	NA (d)	0	5	5
Manganese	UG/L	8250	100%	50 (a)	5	5	5
Mercury	UG/L	0.05	40%	0.7 (b)	0	2	5
Nickel	UG/L	108	100%	100 (b)	1	5	5
Potassium	UG/L	7080	100%	NA (d)	0	5	5
Sodium	UG/L	12300	100%	20000 (b)	0	5	5
Thallium	UG/L	3.2	60%	2 (c)	3	3	5
Vanadium	UG/L	42.9	100%	NA (d)	0	5	5
Zinc	UG/L	305	100%	5000 (a)	0	5	5
OTHER ANALYSES							
pH	Standard Units	7.9	100%		0	5	5
Conductivity	umhos/cm	725	100%		0	5	5
Temperature	°C	22	100%		0	5	5
Turbidity	NTU	>200	100%		0	5	5

NOTES:

a) Secondary Drinking Water Regulation

b) NY State Class GA Groundwater Regulations

c) Maximum Contaminant Level

TABLE 32
SUMMARY OF TOTAL NONCARCINOGENIC AND CARCINOGENIC RISKS – SEAD-64D

RECREATIONAL USE SCENARIO				RESIDENTIAL SCENARIO			
RECEPTOR	EXPOSURE ROUTE	HAZARD INDEX	CANCER RISK	RECEPTOR	EXPOSURE ROUTE	HAZARD Index INDEX	CANCER RISK[1]
PARK WORKER	Inhalation of Dust in Ambient Air	3E-8	2E-15	RESIDENTIAL ADULT	Inhalation of Dust in Ambient Air	2E-7	1E-14
	Ingestion of Soil	5E-5	3E-7		Ingestion of Soil	1E-4	2E-6
	Dermal Contact to Soil	NQ	NQ		Dermal Contact to Soil	NQ	NQ
	Ingestion of Groundwater		NQ		Inhalation of Groundwater	NQ	NQ
	TOTAL RECEPTOR RISK (Nc & Car)		**3E-7**		Ingestion of Groundwater		NQ
RECREATIONAL VISITOR (CHILD)	Inhalation of Dust in Ambient Air	1E-8	1E-16		Dermal Contact of Groundwater		NQ
	Ingestion of Soil	4E-5	4E-8		**TOTAL RECEPTOR RISK (Nc & Car)**		**2E-6**
	Dermal Contact to Soil	NQ	NQ				
	Inhalation of Groundwater	NQ	NQ	RESIDENTIAL CHILD	Inhalation of Dust in Ambient Air	3E-7	
	Ingestion of Groundwater		NQ		Ingestion of Soil	9E-4	
	Dermal Contact to Groundwater		NQ		Dermal Contact to Soil	NQ	
	TOTAL RECEPTOR RISK (Nc & Car)		**4E-8**		Inhalation of Groundwater	NQ	
CONSTRUCTION WORKER	Inhalation of Dust in Ambient Air	5E-7	1E-15		Ingestion of Groundwater		
	Ingestion of Soil	3E-4	7E-8		Dermal Contact of Groundwater		
	Dermal Contact to Soil	NQ	NQ		**TOTAL RECEPTOR RISK (Nc & Car)**		
	TOTAL RECEPTOR RISK (Nc & Car)	**3E-4**	**7E-8**				

Note: NQ = Not qualified due to lack of toxicity data.

1. Cancer risk was calculated for resident (ages 0-70 yr).

TABLE 34
SUMMARY OF SOIL ANALYSIS RESULTS – SEAD-68

COMPOUND	UNIT	MAXIMUM	FREQUENCY OF DETECTION	TAGM (a)	NUMBER ABOVE TAGM	NUMBER OF DETECTS	NUMBER OF ANALYSES
VOLATILE ORGANICS							
Benzene	UG/KG	3	11.11%	60	0	1	9
Chloroform	UG/KG	4	11.11%	300	0	1	9
Tetrachloroethene	UG/KG	8	11.11%	1400	0	1	9
Toluene	UG/KG	87	66.67%	1500	0	6	9
Total Xylenes	UG/KG	6	22.22%	1200	0	2	9
Trichloroethene	UG/KG	4	11.11%	700	0	1	9
SEMIVOLATILE ORGANICS							
2-Methylnaphthalene	UG/KG	310	44.44%	36400	0	4	9
Acenaphthene	UG/KG	49	44.44%	50000	0	4	9
Anthracene	UG/KG	97	66.67%	50000	0	6	9
Benzo(a)anthracene	UG/KG	900	88.89%	224	2	8	9
Benzo(a)pyrene	UG/KG	770	88.89%	61	5	8	9
Benzo(b)fluoranthene	UG/KG	940	88.89%	1100	0	8	9
Benzo(ghi)perylene	UG/KG	420	88.89%	50000	0	8	9
Benzo(k)fluoranthene	UG/KG	830	88.89%	1100	0	8	9
Bis(2-Ethylhexyl)phthalate	UG/KG	150	11.11%	50000	0	1	9
Butylbenzylphthalate	UG/KG	18	55.56%	50000	0	5	9
Carbazole	UG/KG	80	66.67%	NA	0	6	9
Chrysene	UG/KG	1000	100.00%	400	2	9	9
Di-n-butylphthalate	UG/KG	4.2	11.11%	8100	0	1	9
Di-n-octylphthalate	UG/KG	18	11.11%	50000	0	1	9
Dibenz(a,h)anthracene	UG/KG	220	88.89%	14	6	8	9
Dibenzofuran	UG/KG	43	44.44%	6200	0	4	9
Fluoranthene	UG/KG	1500	100.00%	50000	0	9	9
Fluorene	UG/KG	34	44.44%	50000	0	4	9
Indeno(1,2,3-cd)pyrene	UG/KG	400	88.89%	3200	0	8	9
Naphthalene	UG/KG	78	22.22%	13000	0	2	9
Pentachlorophenol	UG/KG	24	11.11%	1000	0	1	9
Phenanthrene	UG/KG	480	77.78%	50000	0	7	9
Pyrene	UG/KG	1500	100.00%	50000	0	9	9
PESTICIDES							
4,4'-DDE	UG/KG	260	77.78%	2100	0	7	9
4,4'-DDT	UG/KG	130	44.44%	2100	0	4	9
Alpha-Chlordane	UG/KG	21	33.33%	NA	0	3	9
Gamma-Chlordane	UG/KG	23	44.44%	540	0	4	9
Heptachlor epoxide	UG/KG	4	44.44%	20	0	4	9
2,4,5-T	UG/KG	25	11.11%	1900	0	1	9
2,4-DB	UG/KG	90	11.11%	NA	0	1	9
METALS							
Arsenic	MG/KG	11.3	100.00%	8.2	2	9	9

a) TAGM = Technical and Administrative Guidance Memorandum HWR-94-4046 (January 24, 1994); NA = Not Available

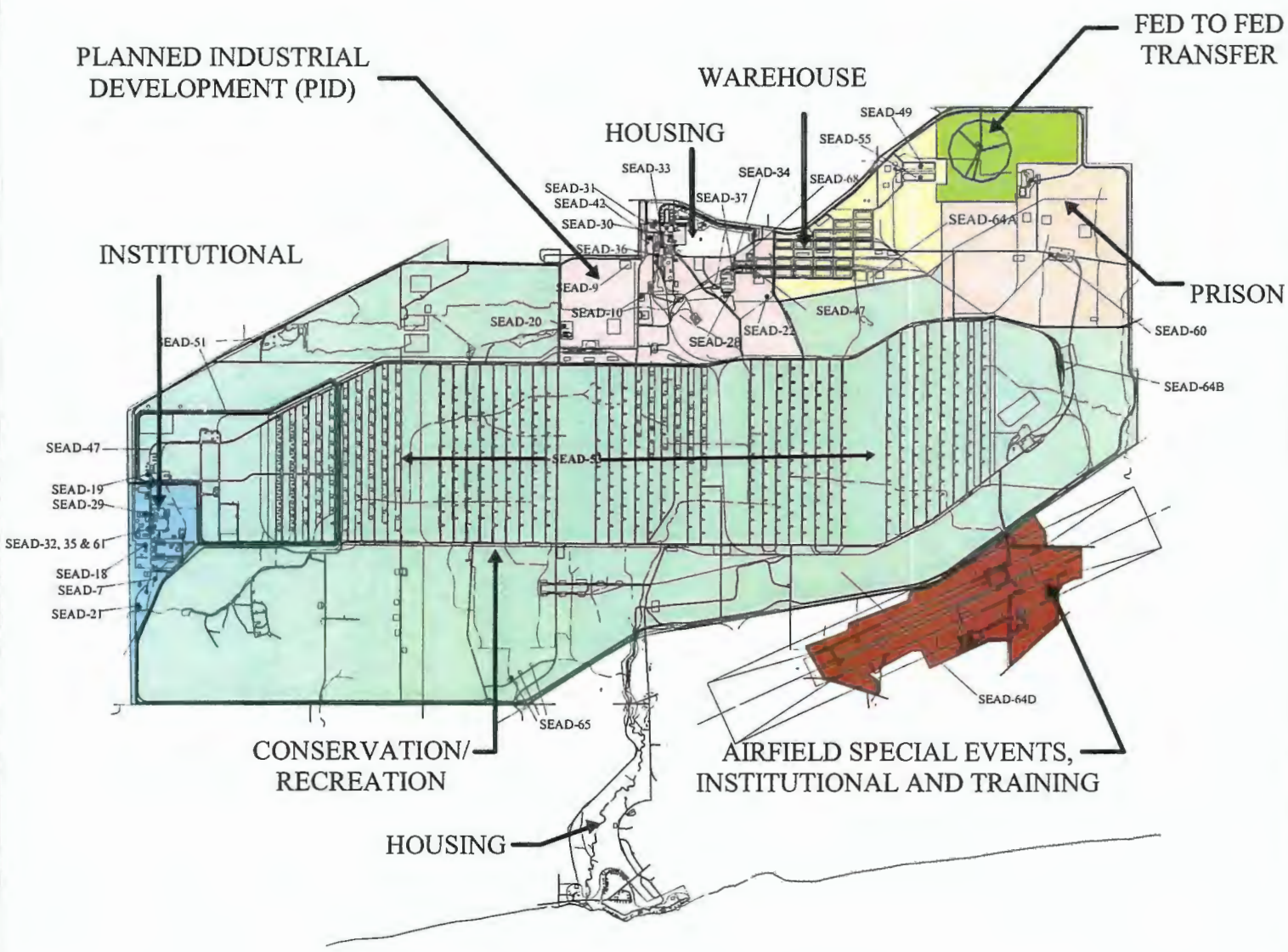
TABLE 35
SUMMARY OF TOTAL NONCARCINOGENIC AND CARCINOGENIC RISKS – SEAD-68

INDUSTRIAL USE SCENARIO				RESIDENTIAL SCENARIO			
RECEPTOR	EXPOSURE ROUTE	HAZARD INDEX	CANCER RISK	RECEPTOR	EXPOSURE ROUTE	HAZARD Index INDEX	CANCER RISK[1]
INDUSTRIAL WORKER	Inhalation of Dust in Ambient Air	5E-7	5E-11	RESIDENTIAL ADULT	Inhalation of Dust in Ambient Air	1E-6	2E-10
	Ingestion of Soil	8E-4	3E-6		Ingestion of Soil	1E-3	1E-5
	Dermal Contact to Soil	5E-7	6E-10		Dermal Contact to Soil	6E-7	1E-9
	TOTAL RECEPTOR RISK (Nc & Car)	**8E-4**	**3E-6**		Inhalation of Groundwater	ND	ND
CONSTRUCTION WORKER	Inhalation of Dust in Ambient Air	5E-6	2E-11		Ingestion of Groundwater	ND	ND
	Ingestion of Soil	4E-3	2E-11		Dermal Contact of Groundwater	ND	ND
	Dermal Contact to Soil	5E-7	2E-11		**TOTAL RECEPTOR RISK (Nc & Car)**	**5E-2**	**2E-5**
	TOTAL RECEPTOR RISK (Nc & Car)	**4E-3**	**6E-7**	RESIDENTIAL CHILD	Inhalation of Dust in Ambient Air	3E-6	
WORKER AT DAY CARE CENTER	Inhalation of Dust in Ambient Air	4E-7	5E-11		Ingestion of Soil	1E-2	
	Ingestion of Soil	8E-4	3E-6		Dermal Contact to Soil	1E-6	
	Dermal Contact to Soil	5E-7	6E-10		Inhalation of Groundwater	ND	
	TOTAL RECEPTOR RISK (Nc & Car)	**8E-4**	**3E-6**		Ingestion of Groundwater	ND	
CHILD AT DAY CARE CENTER	Inhalation of Dust in Ambient Air	1E-6	3E-11		Dermal Contact of Groundwater	ND	
	Ingestion of Soil	7E-3	7E-6		**TOTAL RECEPTOR RISK (Nc & Car)**	**1E-2**	
	Dermal Contact to Soil	8E-7	2E-10				
	TOTAL RECEPTOR RISK (Nc & Car)	**7E-3**	**7E-6**				

Notes:

1. Cancer risk was calculated for resident (ages 0-70 yr).

NQ = Not qualified due to lack of toxicity data. ND = No data available.



Airfield

Conservation

Federal

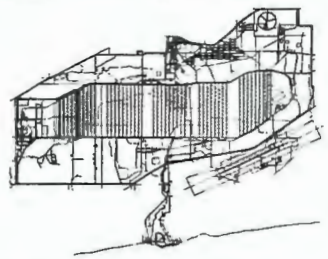
Industrial

Institutional

Prison

Warehouse

Housing



PARSONS

Seneca Army Depot Activity
Proposed Plan - No Action Sites

Figure 1
Future Land Use

Project: 736026-01001	June 2003

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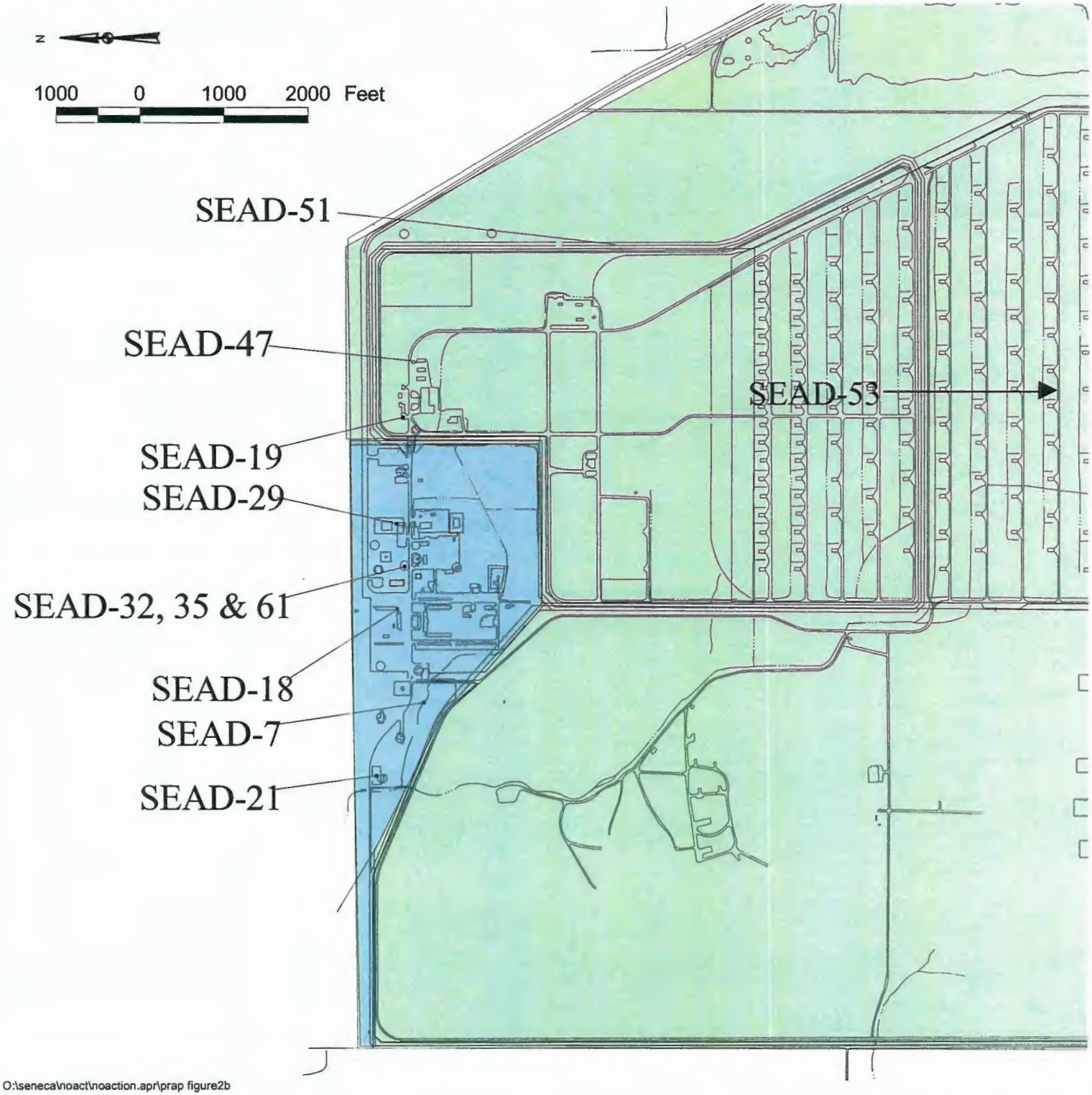

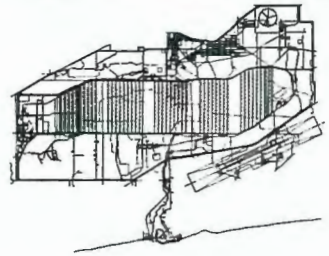

PARSONS

Seneca Army Depot Activity
Proposed Plan - No Action Sites

Figure 2
Location of NA/NFA SWMUs
Institutional Area

Project: 736026-01001 | June 2003

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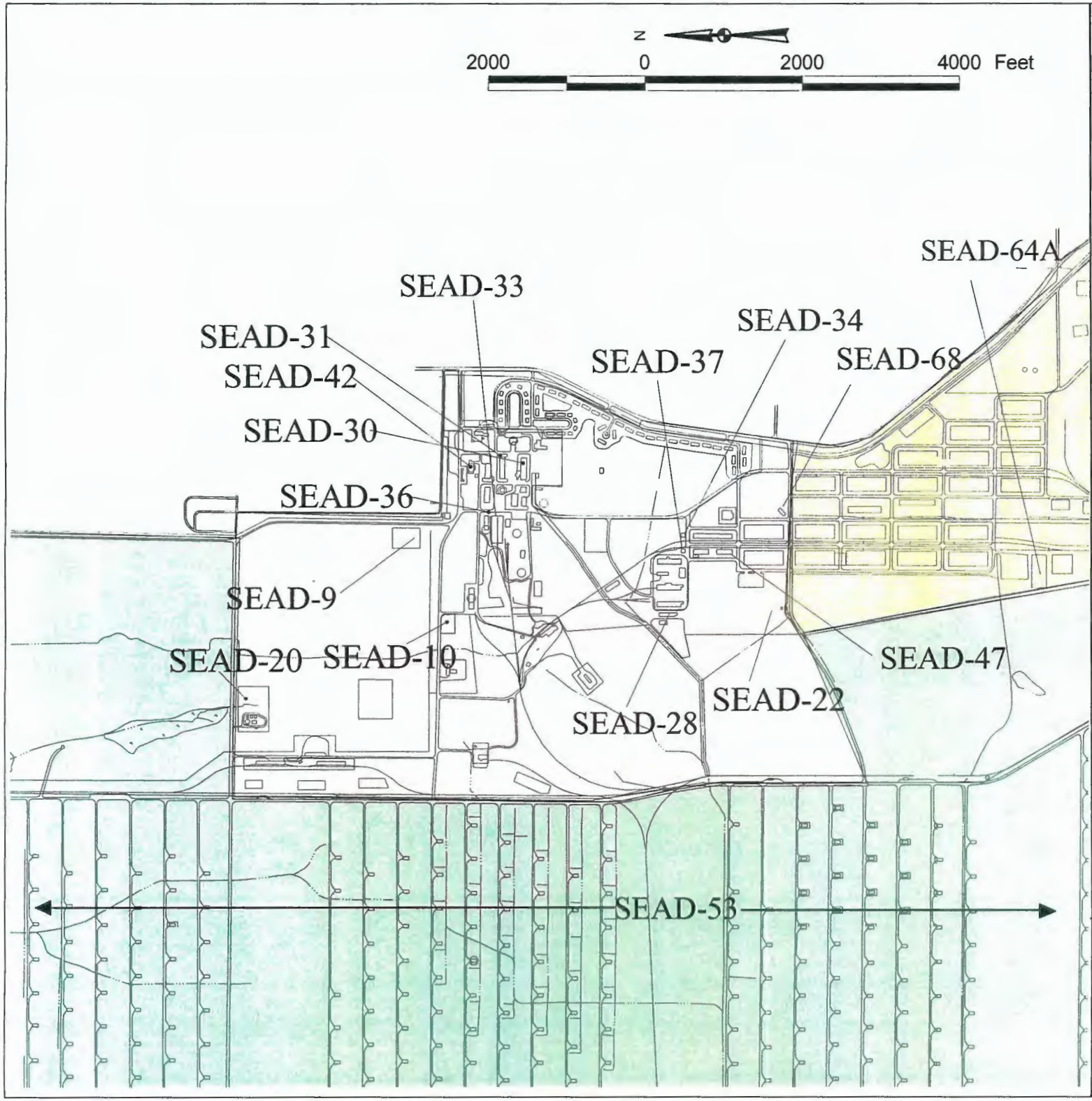


Airfield

Conservation

Federal

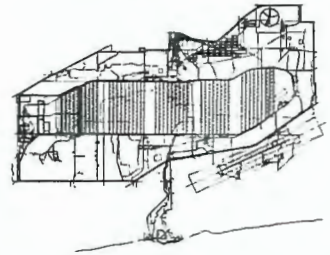
Industrial

Institutional

Prison

Warehouse

Housing

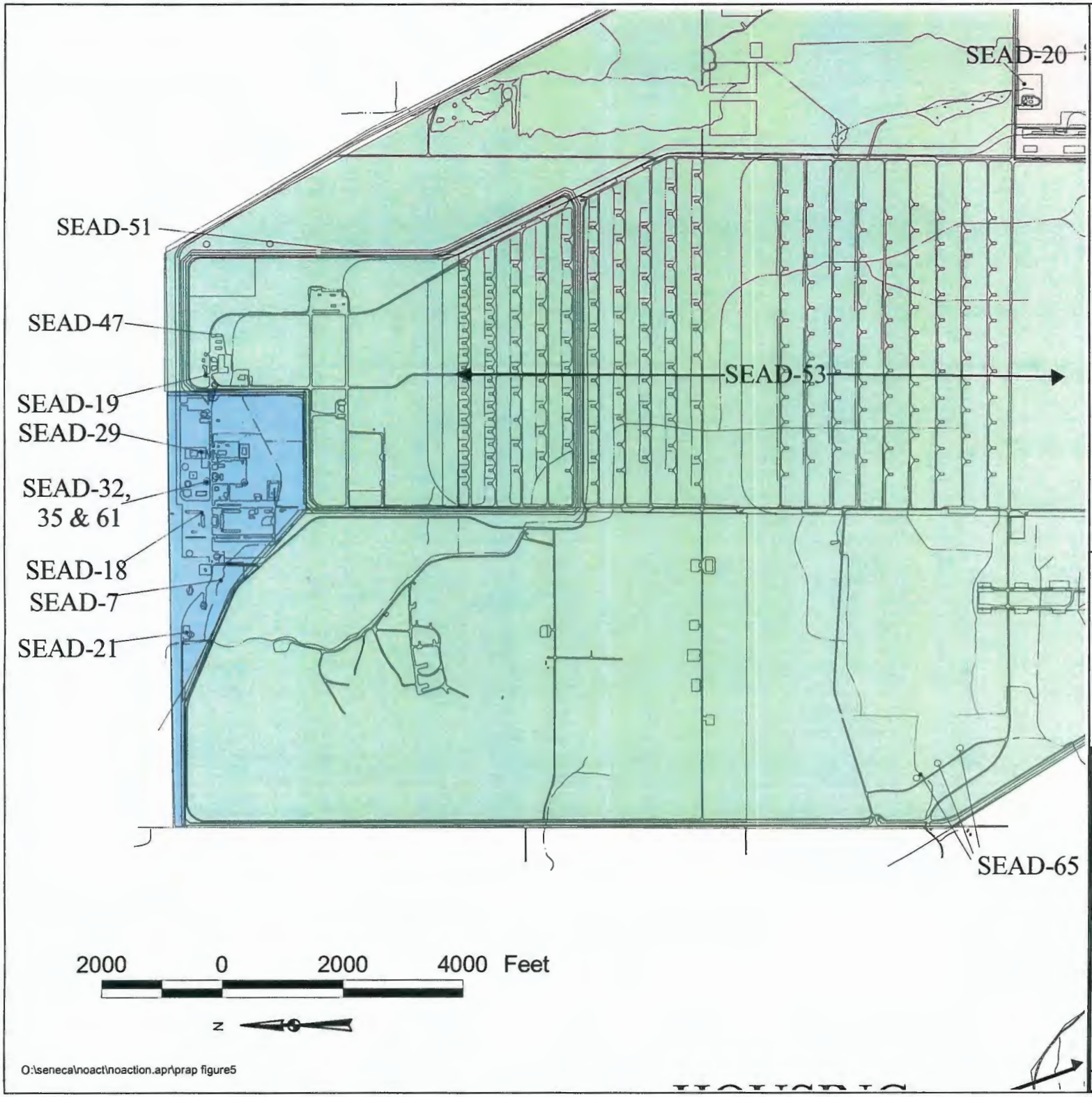


PARSONS

Seneca Army Depot Activity
Proposed Plan - No Action Sites

Figure 3
Location of NA/NFA SWMUs
Industrial Development Area

Project 736026-01001 | June 2003



Airfield

Conservation

Federal

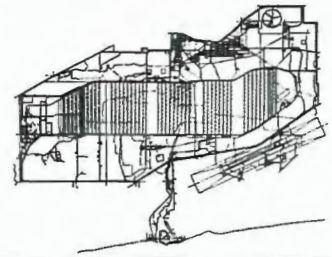
Industrial

Institutional

Prison

Warehouse

Housing

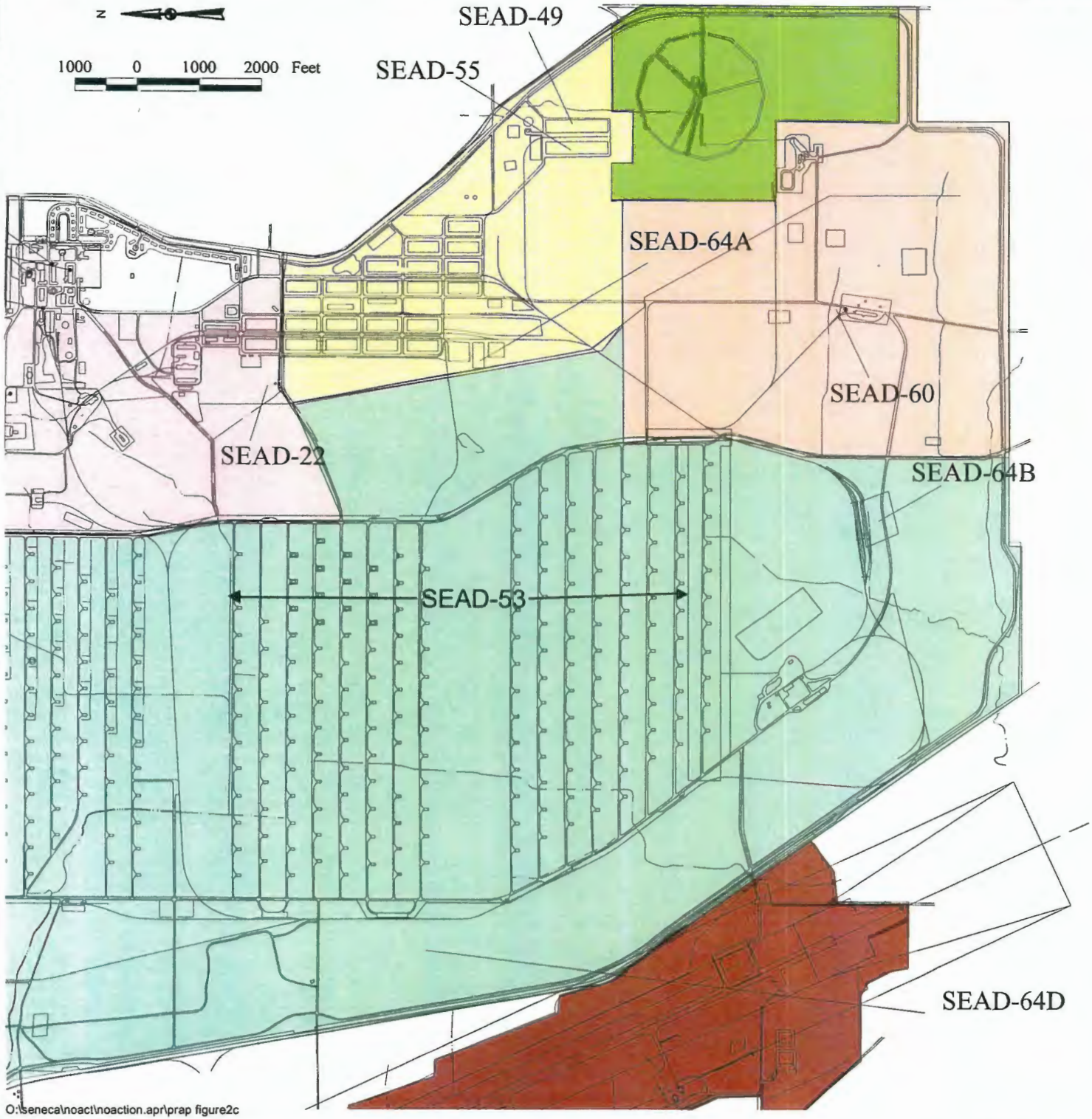


PARSONS

Seneca Army Depot Activity
Proposed Plan - No Action Sites

Figure 4
Location of NA/NFA SWMUs
Northern Conservation/Recreational Area

Project: 736026-01001	March 2003



Airfield

Conservation

Federal

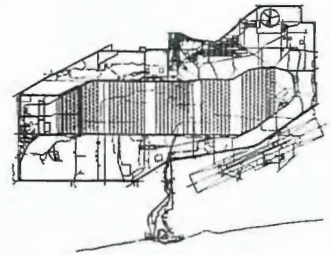
Industrial

Institutional

Prison

Warehouse

Housing



PARSONS

Seneca Army Depot Activity
Proposed Plan - No Action Sites

Figure 5
Location of NA/NFA SWMUs
Warehouse, Prison, and Southern
Conservation/Recreation Area

Project. 736026-01001 | June 2003

Table 31
SUMMARY OF GROUNDWATER ANALYSIS RESULTS (2003) – SEAD-64D