INTERNATIONAL TECHNOLOGY CORPORATION

Project No. 519204
July 1995

01123
94

Final Report – Volume I

Building 360 Closure Seneca Army Depot Romulus, New York

Contract No. DACW45-94-D-0054
Delivery Order No. 02

Prepared for:
U.S. Army Corps of Engineers
Omaha District
215 N. 17th Street
Omaha, Nebraska 68102-4978

Prepared by:
IT Corporation
140 Allen's Creek Road
Suite 150
Rochester, NY 14618
(716) 271-6430

RESPONSIVE TO THE NEEDS OF ENVIRONMENTAL MANAGEMENT

Final Report - Volume I
Building 360 Closure
Seneca Army Depot
Romulus, New York

Contract No. DACW45-94-D-0054
Delivery Order No. 02
IT Project No. 519204

Prepared by:

INTERNATIONAL TECHNOLOGY CORPORATION

140 Allens Creek Road
Rochester, New York 14618

Prepared for:

U.S. Army Corps of Engineers
Omaha District
215 North 17th Street
Omaha, Nebraska 68102-4978

July 1995

Table of Contents

List of Tables

List of Figures

1.0 Introduction

This report detailing the tasks performed and the results derived during the Building 360 Closure Investigation (investigation) has been prepared by IT Corporation (IT) for the United States Army Corps of Engineers (USACE) Omaha District. The investigation has been performed in compliance with the Rapid Response Contract No. DACW45-94-D-0054, Delivery Order No. 2, based upon the USACE's Scope of Service dated September 14, 1994. This Report has been prepared under this delivery order. The intent of the investigation was to address concerns regarding the closing of the Steam Jenny Accumulation Pit (Pit) located at Building 360 within the Seneca Army Depot and any potential impact on the environment caused by former operations at Building 360.

The investigation primarily involved the collection of concrete, soil and groundwater samples which were analyzed to assess potential contamination resulting from past operations and practices. Preliminary closure activities were also conducted.

The primary project field activities for the investigation were as follows:

- Accumulation pit liquid waste characterization, removal and temporary storage
- Concrete coring and removal
- Closure sampling (concrete and soil)
- Drilling and Surveying
- Groundwater monitoring well installation
- Closure sampling [monitoring wells and 1,1,1-trichloroethane (T-sump)]
- Pressure washing metal grating and interior building surfaces
- Ongoing periodic Post-Closure groundwater sampling (monitoring wells and T-sump)

Systematic sampling, testing and quality control procedures were implemented to assure proper decontamination and possible abandonment of the system.

Section 2.0 of this Report describes the investigation program and the methods employed to conduct each task. Section 3.0 presents a summary of the laboratory analytical results for soil, concrete and water samples. An evaluation of the analytical results compared to site-specific criteria is presented in Section 4.0. The Quality Assurance/Quality Control (QA/QC) protocols which were followed during the investigation are described and a data

validation narrative is presented in Section 5.0. Conclusions regarding site closure and recommendations for disposal of investigation derived wastes (IDW) are presented in Section 6.0 of this Report.

1.1 Investigation Objectives

The objective of closing the Pit at Building 360 at the Seneca Army Depot is that the existing hazardous collection pit does not conform to current hazardous waste tank regulations and because it was indeterminate, based on inspections, whether the tank had leaked. The objective of the investigation was to identify the extent of possible contamination and to use this information as a guide to potential decontamination or removal of hazardous substances in the future.

1.2 Project Overview

Implementation of the investigation project tasks included systematic sampling, testing and quality control procedures to assure proper decontamination and possible abandonment of the system. The primary project field activities were as follows:

- Accumulation pit liquid waste characterization, removal and temporary storage
- Concrete coring and removal
- Closure sampling (concrete and soil)
- Drilling and Surveying
- Groundwater monitoring well installation
- Closure sampling (monitoring wells and T-sump)
- Pressure washing of metal grating and interior building surfaces
- Ongoing periodic Post-Closure groundwater sampling (monitoring wells and T-sump)

The remaining sections of this report detail the following:

- Investigation program activities
- Results of the laboratory analyses of concrete, soil, and water samples
- Characterization of investigation derived wastes
- Investigation Quality Assurance / Quality Control, and
- Conclusions and Recommendations.

2.0 Investigation Program

The basic elements and requirements for the investigation program are presented in the Work Plan, written by IT and approved by the USACE in December, 1994. In the sections below, a summary of the methods employed to perform the investigation is presented. A tabulated summary of the samples collected during the investigation is presented in Table 2-1.

2.1 Health and Safety

All project activities were performed under the direct supervision of site health and safety personnel in accordance with the specifications outlined in the Site Safety and Health Plan (SSHP).

2.2 Pit Sampling

In order to allow for a determination of the appropriate level of personal protective equipment (PPE) necessary for field personnel during the investigation, and to allow for a determination of the disposal of the liquid contained in the pit, one representative composite pit water sample was collected on November 30, 1994, and submitted to the laboratory for analysis (Refer to Figure 2-1 - Sampling Location Plan). The pit water sample was collected by sample technicians in level "B" personal protective equipment. The sample was taken by immersing the sampling vials and bottles directly into the pit after several unsuccessful attempts had been made to use a disposable Teflon™ bailer. The sample was submitted to Eastman Kodak - Chemicals Quality Services (Kodak) laboratory for analysis of volatiles, semivolatiles, pesticides, herbicides, polychlorinated biphenyls (PCBs), metals, and various classical chemistry parameters. A summary of the analytical results for this sample is presented in Section 3.1 of this report. A recommendation for disposal of the liquid contained in the accumulation pit and the drummed rinsate generated from the building and metal grating decontamination operations is detailed in Section 6.0.

2.3 Pit Waste Removal

The existing volume of liquid waste was removed from the pit area by means of an electrically-powered submersible pump and transferred to 55-gallon drums for temporary storage at Building 360 until a final determination was made as to its disposal.

2.4.2 "C" Location Groundwater Sampling

After the soil samples were acquired the auger was then used to advance each of the three borings to an approximate depth of two feet below the groundwater surface or until competent bedrock was encountered. All three borings encountered bedrock prior to reaching a desired depth of two feet below the static water table but produced sufficient groundwater to meet sampling objectives. The groundwater was manually bailed out to preclude the possibility of contamination from upper soil layers and allowed to settle for 24 hours prior to sampling. One sample of groundwater was taken, with a weighted bottle, from each sample location and sent to an off-site laboratory for analysis. When sampling was completed, sample locations were then backfilled to grade with non-shrink grout on February 9, 1995. Analytical results are summarized in Section 3.4 of this report.

2.5 Soil Borings/Groundwater Well Installations

In order to assess the potential impact of former operation of the steam jenny pit on groundwater, two monitoring wells (MW1 and MW2) were installed within the vicinity of building 360. Samples of soil and groundwater at locations MW1 and MW2 were obtained. Soil samples were screened for the presence of volatile organic compounds (VOCs) in the field using a photoionization detector (PID) instrument. Groundwater samples were submitted for laboratory analysis.

2.5.1 Soil Borings

Monitoring well MW1 was placed in a location which was presumed to be upgradient of Building 360 and well MW2 was placed in a location which was presumed to be downgradient of Building 360 (Figure 1 - Sampling Location Plan). An existing sump pump, referred to as the "trichlor sump" (T-sump) due to its location beneath a storage tank used to store 1,1,1-trichloroethane, was also used as a groundwater monitoring location. The T-sump is situated approximately 25 feet south of the steam jenny accumulation pit.

During drilling of the borings associated with MW1 and MW2, soil sampling was performed continuously over the entire depth of the boring to allow for accurate logging of the soil lithology and a field assessment (using the PID instrument) of the chemical characteristics of the soil. Subsurface soil samples were collected during the investigation by means of a hollow stem auger drill rig equipped with a split-spoon sampler. The field sampling technician used the PID to screen soil samples in the split spoon sampler for

2.4 Concrete Sampling

Samples of the concrete floor of Building 360 were taken in three locations, at three general depth intervals. These locations are designated as C-1, C-2 and C-3. The concrete was cored at all three sample locations by means of a 6-inch diameter concrete saw attached to an electrically-powered concrete coring device. The coring device was operated by a crew from Parratt Wolff, Inc. Concrete cores were obtained from locations C-1 and C-2 on February 6, 1995, and a core was obtained from location C-3 on February 7, 1995.

Concrete cores from locations C-1 and C-2 were placed into plastic bags for temporary storage (<24 hrs) until they were fragmented with a hammer to produce pieces which were less than one-inch diameter. The concrete cores from location C-3 were also placed into a plastic bag for temporary storage (approximately six hours) until they were also fragmented with a hammer. All of the concrete samples were then placed in amber-colored glass containers for shipment to Quanterra laboratory in Pittsburgh, Pennsylvania (Quanterra). Concrete samples CC1-1, -2, and -3 were obtained from the core taken at location C-1; samples CC2-1, -2 , and -3 were obtained from the core from location C-2; and samples CC3-1, -2, and -3 were derived from the core removed from location C-3. Analytical results are summarized in Section 3.2 of this report.

2.4.1 "C" Location Soil Sampling

Soil samples were obtained at locations C-1, -2, and -3 (see Figure 1), by means of a two foot long, three-inch diameter, split-spoon sampler which was attached to the drill rod and hammered into the subfloor soils. The split-spoon sampler was advanced ahead of the 6.25 inch ID hollow-stem augers as the borings were advanced at locations C-1, C-2 and C-3.

One undisturbed soil sample from a depth interval of 1 foot to 3 feet beneath the concrete was taken with an auger and thin wall tube sampler at sample locations C-1 and C-2 and sent to Quanterra laboratory in Pittsburgh, Pennsylvania for analysis. Due to discovery of an underground gravel-filled vault structure at the original C-3 location, location C-3 was relocated 6.9 feet east of its original location. One undisturbed soil sample from a depth interval of 0 feet to 1.5 feet beneath the bottom of the concrete vault structure was taken with an auger and thin wall tube sampler at sample location C-3. Analytical results are summarized in Section 3.3 of this report.

VOCs at the time of sample collection. Sampling was done immediately upon opening the split spoon, and was performed once the split-spoon sample was taken from the boring. After the material in the split-spoon sampler was visually described and classified, the entire contents of the split spoon was placed in a 55-gallon drum staged by the well location. Refer to Section 6.0 of this report for soil disposal recommendations.

2.5.2 Monitoring Well Location Survey

Monitoring wells MW-1 and MW-2 were surveyed in the x,y, and z coordinates on February 24, 1995 by Niagara Boundary and Mapping Services. Coordinates for both monitoring wells were measured to the closest one foot. Ground elevations to the closest 0.10 foot and top of casing (TOC) elevations to the nearest 0.010 foot were recorded for each location. All measurements were referenced to a benchmark consisting of the rim of a manhole located approximately 50 feet east of building 360.

2.5.3 Well Development and Groundwater Sampling

Upon completion of the installation of MW1 and MW2, each monitoring well was developed by bailing. Each well was developed until a minimum of three well columns of water were removed. After each well was developed, the pH, temperature, turbidity, and specific conductivity of the well water was measured and recorded to evaluate the initial performance of the well. Water generated during development was placed in Department of Transportation (DOT)-approved drums and staged at Building 360. Refer to Section 6.0 of this report for recommendations for disposal of this drummed water.

Water levels in MW1 and MW2 were measured before and after development, and before and after sampling each well. Each monitoring well was allowed to equilibrate for at least 24 hours prior to sampling. Water levels were measured to the nearest 0.01 foot using an electric well sounder relative to the top of the well riser.

Groundwater samples were obtained from MW1 and MW2 and sent to Quanterra for analysis. Prior to sampling, each well was purged using a Teflon bailer until pH, specific conductivity, and temperature stabilized to within 10 percent between any two well volumes and a minimum of three times the initial volume of water within each well was evacuated. The purged water was collected in 55-gallon drums which are staged at Building 360

awaiting disposition (refer to Section 5.0 of this report for a recommendation for disposition of the purged water). The monitoring wells were sampled following this protocol once each month from February 1995 through May 1995. Analytical results are summarized in Section 3.4 of this report.

2.5.4 T-sump Sampling

The T-sump was also sampled once each month as an additional groundwater monitoring location from February 1995 through May 1995. Sampling was accomplished by carefully lowering a clean disposable teflon bailer into the sump, taking care not to agitate the liquid in the sump and thereby cause the sump sediments to go into suspension. The bailer was retrieved and the sample jars were filled by pouring the water from the bailer. Analytical results are summarized in Section 3.4 of this report.

2.6 Building Decontamination

During the period February 10, 1995 through March 21, 1995, several attempts were made to pressure wash the interior of the steam jenny room of Building 360. The first of these unsuccessful attempts occurred on February 10, 1995, where due to cold temperatures the pressure washer apparatus became frozen. Several subsequent attempts in the above referenced interval were also frustrated by extremely cold conditions. On March 21, 1995, IT employees successfully operated a pressure washer and cleaned the interior of the steam jenny room. Based on a determination that contamination is limited to the concrete surfaces and metal grating, all contaminated areas including walls, floors and grating were steam cleaned with detergent and water and then rinsed.

At the conclusion of the project activities all equipment was removed and, with the exception of IDW being staged at the building, the site was restored to its original condition.

2.7 Investigation Derived Wastes

Drill cuttings, excess sample materials, and water removed from borings/monitoring wells were drummed, appropriately labeled, and staged on site on wooden pallets nearby Building 360 for removal at a later date.

The following wastestreams were generated during the investigation:

- Wastewater (including accumulated steam jenny pit water and rinsate from equipment decontamination), and purged groundwater from sampling activities; and,
- Soil, concrete and PPE.

There are currently a total of 16 drums staged at Building 360 and their contents and approximate aggregate volume(s) are as follows:

- Three drums which contain a total of 95 gallons of development/purge water,
- Four drums which contain a total of 150 gallons of pit cleanout water
- One drum containing 40 gallons of drilling equipment decontamination water, and
- Eight drums which contain 2.15 tons (1.53 cubic yards) of soil/drill auger cuttings and minor concrete from coring operations.

These materials were placed into drums which were DOT- and Environmental Protection Agency (EPA)-approved for transport of hazardous materials. The drums are currently in temporary storage at Building 360 awaiting EPA and New York State Department of Environmental Conservation (NYSDEC) approval for their disposal. The Seneca Army Depot has been listed as the generator of the investigation derived waste (IDW) and an authorized representative of the Depot will sign all manifests and waste profile sheet(s) if determined necessary. IT, in coordination with SEDA, will oversee the disposal of all IDW. See Section 4.3 for IDW characterization and Section 6.0 for IDW disposal recommendations.

3.0 Investigation Analytical Results

The laboratory analytical results for samples from the decontamination pit wastewater, concrete cores and underlying soil and groundwater, groundwater from two newly installed monitoring wells, and groundwater from the T-sump are presented in the seven tables (Tables 3-1 through 3-7) which accompany this data summary.

All groundwater, soil and concrete samples were collected successfully and within method-specified requirements. For reference, the Certificates of Analysis and associated QA/QC from the laboratory have been included as Appendix A to this Report.

Analyses varied depending on sample matrix which included a full suite of VOCs, semivolatile organic compounds, PCBs, pesticides, herbicides, metals, and various classical chemistry parameters. All samples were analyzed following United States Environmental Protection Agency Solid Waste-846 (USEPA SW846) methodology.

Laboratory analytical results indicate the presence of trace levels of several different compounds in all three media (groundwater, soil and concrete) at the project site. These constituents were present in varying concentrations.

Direct, real-time monitoring with a PID was performed while borings were drilled and during the initial round of groundwater sampling. No quantifiable readings were recorded with the PID during these screening activities.

3.1 Pit Water Analytical Results

One representative, composite pit water sample (B360-Sump-1) was collected from the pit on November 30, 1994, and sent to the Kodak laboratory for analysis. The sample was analyzed for volatiles, semivolatiles, pesticides, herbicides, PCBs, metals, and various classical chemistry parameters. The analytical data was received and reviewed in order to determine the level of health and safety criteria to be utilized during project activities and to properly characterize the pit water for disposal.

Pit water analytical data revealed no detectable volatiles, herbicides, and PCBs. Total cresol was detected at 0.020 milligrams per liter (mg/l). Pesticides lindane and 4,4-DDE

were detected at 0.00010 mg/l and 0.000250 mg/l respectively. Arsenic, cadmium, chromium, copper, lead, nickel, selenium, and zinc were detected at 0.0403 mg/l, 0.0054 mg/l, 0.043 mg/l, 0.155 mg/l, 0.194 mg/l, 0.276 mg/l, 0.0234 mg/l, and 2.59 mg/l respectively. Barium and silver were detected above the method detection limits but below the practical quantitation limits (PQLs) at 0.056 mg/l and 0.008 mg/l respectively. In addition the following classical chemistry parameters were detected: density at 0.999 mg/l, total dissolved solids at 1500 mg/l, total suspended solids at 330 mg/l, total organic carbon at 110 mg/l, total organic nitrogen at 3.2 mg/l, phenol (above method detection limit but below practical quantitation limit) at 0.01 mg/l, sulfide at 1.4 mg/l, and pH at 8.7. Refer to Table 3-1 for a complete summary of pit water analytical results.

3.2 Concrete Sample Analytical Results

The three decontamination pit concrete cores (designated "CC1-1", "CC1-2", etc.) were analyzed for PCBs and toxicity characteristic leaching procedure (TCLP) cadmium, chromium, and lead. Analytical data from the concrete core samples revealed no detectable PCBs. Only concrete core number three (CC3) had detects for TCLP chromium within the top (CC3-1, 0in.-3in.) and middle (CC3-2, 3in.-5in.) third sections of the concrete core with concentrations at 22 micrograms per liter (ug/l) and 12 ug/l respectively. Table 3-2 contains a summary of the concrete analytical data.

3.3 Soil Sample Analytical Results

Soil samples from the interval 1 ft. to 3 ft. beneath the concrete were analyzed for VOCs, PCBs, cadmium, chromium, and lead. Samples were designated per location using descriptors such as CS1-, CS2-, CS2-dup. and CS3-. No VOCs or PCBs were detected at or above the PQLs in any of the soil samples. Chromium was detected in samples CS1 (1-3 ft), CS2 (1-3ft), CS2 (1-3ft) duplicate, and CS3 (0-1.5ft) at concentrations of 20.7 milligrams per kilogram (mg/kg), 24.7 mg/kg, 28 mg/kg, and 18.4 mg/kg respectively. Lead was also detected in the same samples at concentrations of 7.9 mg/kg, 7.8 mg/kg, 7.3 mg/kg, and 5.7 mg/kg respectively. Refer to Table 3-3 for a summary of soil analytical data.

3.4 Groundwater Analytical Results

Groundwater samples collected from within the concrete holes were analyzed for VOCs, semivolatiles, PCBs, cadmium, chromium, and lead. No constituents were detected, with the

exception of lead in samples CW1 at 3.8 ug/l and CW3 at 10 ug/l, and chromium in sample CW3 at 42.7 ug/l.

As specified previously the monitoring well and T-sump groundwater samples were collected upon initial well installation and then once a month for three consecutive months following the initial sampling event. Groundwater samples collected from the first, second, and third monthly sampling events were designated using descriptors such as MW1-1, MW2-1, MW1-2, MW2-2, etc. The monitoring well and T-sump groundwater samples were analyzed for VOCs, semivolatiles, PCBs, cadmium, chromium, and lead parameters

The initial sampling event revealed no constituents detected at or above the PQLs, with the exception of chromium in samples MW1 at 20 ug/l, MW2 at 41.2 ug/l, and T-Sump 1 at 48.4 ug/l. Lead was also detected in these samples at 5.4 ug/l, 9.3 ug/l, and 197 ug/l respectively. The T-sump sample also contained 1,1,1-trichloroethane at 14 ug/l. All initial sampling event water data are summarized in Table 3-4.

The first monthly sampling event revealed no semivolatiles or PCBs detected at or above PQLs. Acetone was detected in MW1-1 at 2 mg/l. In addition lead, bromodichloromethane, bromoform, dibromochloromethane, and 1,1,1-trichloroethane were detected in T-Sump 1-1 at concentrations of 30.5 ug/l, 5.5 ug/l, 7.6 ug/l, 14 ug/l, and 18 ug/l respectively and in T-Sump 1-1 duplicate at concentrations of 38.5 ug/l, 5.9 ug/l, 7.8 ug/l, 15 ug/l, and 20 ug/l respectively. Refer to table 3-5 for the first monthly groundwater analytical data summary.

The second monthly sampling event revealed no semivolatiles or PCBs detected at or above PQLs. Acetone was detected at 1.7 mg/l in MW1-2 and MW1-2 duplicate. Chromium was detected in MW2-2 at 13.3 ug/l. In addition 1,1,1-trichloroethane and lead were detected in T-Sump 2 at 16 ug/l and 20.4 ug/l respectively. Refer to Table 3-6 for the second monthly groundwater analytical data summary.

The third and final groundwater sampling event resulted in no PCBs detected at or above PQLs. Acetone and 1,1-dichloroethane were detected at 110 ug/l and 7.0 ug/l in MW1-3 and 150 ug/l and 7.6 ug/l in MW1-3 duplicate, respectively. 1,1,2,2-Tetrachloroethane and total xylenes were detected in MW1-3 duplicate at 7.6 ug/l and 11 ug/l respectively. 2-

Methylnapthalene, napthalene, and chromium were detected in MW2-3 at concentrations of 110 ug/l, 950 ug/l, and 38.3 ug/l respectively. In addition T-Sump 3 contained 1,1,1-trichloroethane at 18 ug/l and lead at 18 ug/l. Refer to Table 3-7 for the third monthly groundwater analytical data summary.

4.0 Analytical Data Evaluation

As per the Building 360 Closure Plan the laboratory analytical results were evaluated against NYSDEC site-specific action levels to determine if the soil, groundwater, or concrete matrices required further remedial action or if clean closure of the project site could be justified.

The data was also compared to New York State Ambient Water Quality (NYSAWQ) Standards and Guidance Values (Environmental Conservation Law and New York Code of Rules and Regulations (6NYCRR) Parts 700-705, Water Quality Regulations) in order to evaluate impact of the detected constituents on the building 360 surrounding groundwater. In addition, soil and pit wastewater analytical data were compared against Resource Conservation and Recovery Act (RCRA) solid and hazardous waste criteria as specified in 40 Code of Federal Regulations (CFR) Part 261 and 6NYCRR Part 371 in order to characterize the IDW as nonhazardous material.

4.1 Action Level Comparison

Comparison of the detected constituents to the site-specific action levels and soil background concentrations reveals no exceedances for all analyzed sample matrices (concrete, soil and groundwater) with the exception of the T-sump groundwater samples. Five exceedances (for lead) occurred in the groundwater samples obtained from the T-sump inside building 360. Lead was detected at 197 ug/l, 30.5 ug/l, 38.5 ug/l, 20.4 ug/l, and 18 ug/l in samples T-Sump 1, T-Sump 1-1, T-Sump 1-1 duplicate, T-Sump 2, and T-Sump 3 respectively, which exceeds the site-specific action level of 15 ug/l for groundwater presented in the Building 360 Closure Plan *(Page 7 - Table 2 - New York State Department of Environmental Conservation - Action Levels*).

4.2 Groundwater Standard Comparison

Analysis of groundwater samples obtained from within the accumulation pit concrete cored intervals revealed no exceedences when compared to NYSAWQ standards.

Analysis of water samples obtained during monthly sampling of MW1, MW2 and the T-sump, performed in the period March 1995 through May 1995, revealed the presence of several constituents at concentrations which exceeded the NYSAWQ. These constituents are:

- acetone;
- 1,1-dichloroethane (1,1-DCA);
- 1,1,2,2-tetrachloroethane;
- 1,1,1-trichloroethane (1,1,1-TCA);
- total xylenes;
- napthalene; and,
- lead.

Acetone was detected in water samples obtained in March, April and May 1995 from MW1 at concentrations ranging from 110 ug/l to 2000 ug/l. The NYS AWQ guidance value for acetone in groundwater is 50 ug/l. 1,1-DCA was detected in a sample obtained in May 1995 from MW1 at a concentration of 7.6 ug/l, which is in excess of the NYS AWQ standard of 5 ug/l. 1,1,2,2-tetrachloroethane was also detected in the May 1995 sample from MW1, and the reported concentration of 7.6 ug/l exceeds the standard of 5 ug/l. 1,1,1-TCA was also detected in the sump water samples from March 1995 through May 1995, at concentrations ranging from 14 ug/l to 20 ug/l. The published NYS AWQ standard for 1,1,1-TCA in groundwater is 5 ug/l. Total xylenes were detected at 11 ug/l in the May 1995 groundwater sample from MW1 exceeding the NYS AWQ standard of 5 ug/l. Napthalene was detected in the groundwater sample obtained in May 1995, from MW2 at a concentration of 950 ug/l. The NYS AWQ guidance value for napthalene in groundwater is 10 ug/l.

4.3 Investigation Derived Waste Characterization

The initial step in the IDW disposal process was to determine if the IDW is a solid and/or hazardous waste according to RCRA criteria. The IDW meets the definition of a solid waste since the IDW is intended to be discarded and disposed.

The following steps were taken in order to determine if the pit water sample met the criteria of a RCRA hazardous waste:

- Based on review of the pit water sample analytical data and an evaluation of the pit historical use it appears that no known listed hazardous wastes are/were present inside the steam jenny pit area of Building 360. Therefore the pit water can not be characterized as containing a RCRA F, P, K, or U listed hazardous waste.

- Since the pit water does not fit the criteria for an ignitable, corrosive, or reactive waste based on site history, process knowledge, nature of the

generated pit water, and the debris analytical data, the pit water can not be classified as a D001 through D003 characteristic hazardous waste.

- A comparison of the detected sample constituents to the toxicity characteristic values as listed in 40 CFR 261 reveals that none of the detected constituent concentrations exceed their toxicity characteristic values. Therefore the pit water can not be characterized as a D004 through D043 toxicity characteristic waste.

The same characterization process is applicable to the IDW soil based on analytical data and historical usage of the site. Therefore the pit water IDW and the soil IDW are considered nonhazardous waste.

Because the wastewater generated from the B-360 investigation activities is classified as non-hazardous and is not recommended for transportation to an offsite facility, the RCRA classification process was not applied. The wastewater will be discharged and subsequently treated at the SEDA sanitary treatment plant pending state and federal approval.

5.0 Quality Assurance/Quality Control (QA/QC)

The investigation was subject to the quality assurance and quality control guidelines presented in the Work Plan. Specific requirements for the particular sampling and analytical reference methods utilized for this project are presented in Chemical Sampling and Analysis Plan (CSAP) presented in the Building 360 Work Plan.

Quality-assurance objectives for the investigation were met through a real-time comprehensive QA and data validation program encompassing sampling through data analysis and reporting. A brief summary of the QA/QC protocols and the data quality information is presented below:

- Detailed sample collection and handling protocols
- Calibration of instrumentation and apparatus
- Sample analysis in association with specific QC activities, such as blank and duplicate analyses
- Data reduction, validation, and reporting
- Documentation of the sampling and analytical program, and
- Internal quality control.

Specific steps for this task were undertaken at the analytical laboratory, as method and instrument blanks, calibration checks, and duplicate sample analyses were completed for the sample sets. Analytical data and the associated QA/QC results are found in Appendix A. Rapid Response Quality Daily Reports are presented in Appendix C.

5.1 Initial Sampling Event Data Validation

The data validation resulted in the generation of several QA/QC tables. The validation was performed in accordance with the following guidance documents:

- "Test Methods for Evaluating Solid Waste, Physical/Chemical methods," U.S. EPA SW-846, 3rd Revised Edition, November 1986.

- "Laboratory Data Validation, Functional Guidelines for Evaluation Inorganic/Organic Analysis," U.S. EPA 7/88 and 2/88.

- Quality Assurance Project Plan for Building 360 Closure Plan (Appendix 1), July 1994.

The data validation for chemical analysis is summarized below. QA/QC data summaries used for data validation are included in Tables 5.1 through 5.7.

5.1.1 General Comments

The analytical program was conducted in accordance with Quality Assurance Project Plan (QAPP) for the Building 360 Closure Plan. This data validation section is for the initial sampling event and does not include the successive rounds of groundwater sampling. Subsequent monthly groundwater sampling events are described in Section 5.2.

5.1.2 Analytical Methods

The samples followed the analytical methods outlined in the QAPP for the Building 360 Closure Plan. All analyses were conducted according to U.S. EPA procedures.

5.1.3 Data Precision

Data precision relative percent difference (RPD) for analytical parameters was calculated using matrix spike/matrix spike duplicate (MS/MSD) analysis or duplicate sample analysis. The RPD data for the various analyses are summarized in Tables 5.2 through 5.5 and are discussed below:

- All methods, with the exception of one volatile (8240), were within QC limits for RPD. The occurrence was only slightly over the limit set for this method and did not result in the qualification data associated with this sample. Refer to QA/QC Data Summary Tables (Tables 5.2 - 5.5) for specific information.

5.1.4 Data Accuracy

Data accuracy (percent spike recovery) for the analytical parameters were evaluated using MS/MSD analysis. The accuracy data for various analyses are summarized in Table 5.2 through 5.5 and are discussed below:

- All methods with the exception of two inorganic analyses, and one semivolatile recovery were within the specified limits for matrix spike recovery. The two inorganic samples which fell outside the limits were only slightly below the lower limit and did not result in any qualification of the data. The semivolatile recovery was also only slightly below the established limit. No qualification of the data was necessary.

5.1.5 Surrogate Recoveries

Surrogate percent spike recoveries for VOCs, SemiVOCs, and pesticides/PCBs are summarized in Tables 5.2 through 5.5. The data are briefly discussed below:

- For all surrogate recoveries performed, with the exception of pesticide/PCB (8080), the results were within established QC limits. Four samples had surrogate recoveries below the lower limit established for acceptability. Only one sample (MW1) has been qualified since none of the surrogates for this sample were within the limits. Since this sample was non-detect, the sample will be reported as ND(J), indicating an estimated non-detect result.

5.1.6 Blank Analysis

A summary of blank analysis for corresponding samples is presented in Table 5.6. Very low levels of contamination were detected in some of the blanks. Refer to Table 5.6 for specific information.

5.1.7 Holding Time Verification

All samples were extracted and analyzed within their established holding times.

5.2 Monthly Groundwater Sampling Data Validation

Data validation was also performed on three rounds of water samples from monitoring wells and the T-sump within building 360. All of the sample guidelines were followed for this validation effort as with the initial sampling events specified in Section 5.1. The overall condition of the data is discussed below:

- Volatile Analyses - no problems were encountered with any of the percent recoveries. One RPD was above the QC limits, but this was not enough to cause the data to be qualified.

- Semivolatile Analyses - some percent recoveries (both surrogate and matrix spike/duplicate) exceeded their upper QC limits. Also one RPD was slightly above the upper limit established for this calculation. None of these problems would cause any qualification of the data since higher than actual values would be expected with these problems. All samples associated with these QC samples were non-detects.

- PCB Analyses - several surrogate recoveries were below their established QC limits. All matrix spike/duplicates were within their QC limits. No qualifications were necessary.

- Inorganic Analyses - only one matrix spike/duplicate percent recovery was above established QC limits. No qualification was necessary since all results were non-detect in the associated sample.

- Blank Analyses - all blanks associated with the field collection and laboratory analyses of the samples were clean with one exception. One semivolatile blank contained trace concentrations of phthalates and cresols. In the samples associated with this blank, these compounds were not detected. No further action is required.

- Holding Times - all extractions and analyses were conducted within the established holding times.

All QA/QC information regarding monthly groundwater samples can be found in Tables 5-9 through 5-14.

6.0 Conclusions and Recommendations

An investigation of the impact of potential release(s) from the accumulation pit in Building 360 on concrete, soil and groundwater, has been performed in order to determine if the pit had leaked, to identify the extent of possible contamination, and to gather information to guide in decontamination or removal actions.

As per the Work Plan, closure samples of three media (concrete, soil and groundwater) were collected and analyzed during the investigation. In addition, post closure groundwater samples were collected from MW1, MW2 and from the T-sump. Sample collection occured from February 1995 to May 1995.

Data from the soil and concrete sample analyses reveal no exceedances of the site specific action levels and/or soil background concentrations. Chromium was detected in the soil samples at concentrations exceeding the soil/sediment site-specific action level of 10mg/kg. However, the average chromium soils background concentration is 50 mg/kg which is greater than the concentrations of the detected constituents. Lead also was detected in the soil samples at concentrations exceeding the soil/sediment site-specific action level of 5 mg/kg. However, the average lead soils background concentrations is 20 mg/kg which is greater than the concentrations of the detected constituents.

Groundwater samples obtained from the three cored areas within the accumulation pit detected only inorganic constituents (lead and chromium) at concentrations below both site specific action levels and NYS AWQ standards.

Constituents detected in the groundwater samples obtained from MW-1 and MW-2 were below site-specific action levels, but did reveal the presence of volatile and semivolatile compounds at concentrations exceeding NYS AWQ standards. These conditions are not evident in the concrete, soil or groundwater samples obtained from within the accumulation pit area suggesting that the constituents present in these monitoring wells may be the result of sources other than the steam jenny accumulation pit area.

Groundwater samples obtained from the T-sump contained constituent concentrations which exceeded site specific action levels for lead and NYSAWQ standards for 1,1,1-trichloroethane. Data and historical operations of the 1,1,1-trichloroethane sump and

adjacent storage tank suggests the constituents present in the T-sump groundwater are likely not related to past operations of the steam jenny pit area but are inherent to the operations of the 1,1,1-trichloroethane storage tank.

In addition, IDW characterization has been performed and since no known listed hazardous wastes have been present in the steam jenny pit area of Building 360, the pit water cannot be characterized as containing a RCRA F, P, K or U listed hazardous waste. Additionally, the pit water does not fit criteria which render it to be classified as a characteristic hazardous waste. Detected sample constituents in pit water were compared to toxicity characteristic values (listed in 40 CFR 261) and none of them exceeded their toxicity characteristic values. The results of this comparison lead to the conclusion that the pit water can not be characterized as a D004 through D043 toxicity characteristic waste. Data from the analysis of soil was also compared to the above-mentioned criteria.

Based on this determination and the analytical data, Seneca Army Depot environmental management representatives made recommendations regarding IDW disposal options to the EPA and NYSDEC. Pending Federal and State approval, the IDW wastewater will be discharged to the SEDA sanitary treatment plant and the IDW soil will be released to the native soils around the building 360 project site. If this approach does not meet agency approval IT Corporation, in conjunction with SEDA, will arrange for disposal of the IDW at an offsite treatment, storage and disposal facility.

Based on the above conclusions the steam jenny accumulation pit inside building 360 satisfies the requirements for clean closure.

TABLE 2-1
BUILDING 360 INVESTIGATION
SAMPLE COLLECTION SUMMARY LOG
(PAGE 1 OF 2)

Date Collected	Matrix	Sample ID	Contained Volumes	Notes
11-30-94	Water	B-360 - Sump 1	4 x 40 ml 4 x 1 L 3 x 1 L 3 x 500 ml 2 x 150 ml	From steam jenny room accumulation pit for determining HAS level (PPE) and determining appropriate disposal of water in pit.
2-6-95	Concrete	CC1-1	2 x 250 ml	0 in. - 3 in. depth interval (pulverized core on 2-7-95).
2-6-95	Concrete	CC1-2	2 x 250 ml	3 in. - 6 in. depth interval.
2-6-95	Concrete	CC1-3	2 x 250 ml	6 in. - 9 in. depth interval.
2-6-95	Concrete	CC2-1	2 x 250 ml	0 in. - 3 in. depth interval.
2-6-95	Concrete	CC2-2	2 x 250 ml	3 in. - 6 in. depth interval.
2-6-95	Concrete	CC2-3	2 x 250 ml	6 in. - 8 in. depth interval.
2-7-95	Soil	CS1-(1-3)	2 x 60 ml 1 x 250 ml 1 x 4 oz	From split spoon, 1 ft - 3 ft below concrete at C-1
2-7-95	Soil	CS2-(1-3)	2 x 60 ml 1 x 250 ml 1 x 4 oz	From split spoon, 1 ft - 3 ft beneath concrete at C2
2-7-95	Soil	CS2-(1-3) DUP.	2 x 60 ml 1 x 250 ml 1 x 4 oz	From split spoon, 1 ft - 3 ft beneath concrete at C2; duplicate of CS2-(1-3).
2-7-95	DI Water	FB-CS2-(1-3)	2 x 40 ml	Field blank left open during sampling soil.
2-7-95	Water	EB-CS2-(1-3)	2 x 40 ml 1 x 80 oz 1 x 1 L	Equip. rinsate blank; water poured through split spoon sampler.
2-7-95	Concrete	CC3-1	2 x 250 ml	0 in. - 3 in. depth interval core pulverized on 2-8-95.
2-7-95	Concrete	CC3-2	2 x 250 ml	3 in. - 5 in. depth interval.
2-7-95	Concrete	CC3-3	2 x 250 ml	5 in. - 7.5 in. depth interval.
2-8-95	Soil	CS3	4 x 60 ml 2 x 250 ml 2 x 4 oz	From split spoon; from 0 ft - 1.5 ft depth interval.
2-9-95	Water	CW1	2 x 80 oz 1 x 1 L 2 x 40 ml	From borehole (core #1); used disposable bailer.
2-9-95	Water	CW2	2 x 80 oz 1 x 1 L 2 x 40 ml	From borehole (core #2) used disposable bailer.
2-9-95	Water	CW3	2 x 80 oz 1 x 1 L 2 x 40 ml	From borehole (core #3) used disposable bailer. Sample from 0 foot - 3 ft. depth.
2-9-95	Water	MW-1	2 x 80 oz 1 x 1 L 2 x 40 ml	Monitoring well #1 Used disposable bailer.
2-9-95	Water	MW-2	2 x 80 oz 1 x 1 L 2 x 40 ml	Monitoring well #2 5 ft. - 10 ft. depth into well; used disposable bailer.
2-9-95	Water	T-Sump 1	2 x 80 oz 1 x 1 L 2 x 40 ml	0 in. - 10 in.; used bailer to sample sump casing.

TABLE 2-1
BUILDING 360 INVESTIGATION
SAMPLE COLLECTION SUMMARY LOG
(PAGE 2 OF 2)

Date Collected	Matrix	Sample ID	Contained Volumes	Notes
3-12-95	Water	MW 1-1	2 x 80 oz 1 x 1 L 2 x 40 ml	Monitoring well #1; used disposable bailer.
3-13-95	Water	MW 2-1	2 x 80 oz 1 x 1 L 2 x 40 ml	Monitoring well #2; used disposable bailer.
3-23-95	Water	T-Sump 1	2 x 80 oz 1 x 1 L 2 x 40 ml	Used bailer to sample sump casing.
4-13-95	Water	MW 1-2	2 x 80 oz 1 x 1 L 2 x 40 ml	Monitoring well #1; used disposable bailer.
4-13-95	Water	MW 2-2	2 x 80 oz 1 x 1 L 2 x 40 ml	Monitoring well #2; used disposable bailer.
4-13-95	Water	T-Sump 2	2 x 80 oz 1 x 1 L 2 x 40 ml	Used bailer to sample sump casing.
5-17-95	Water	MW 1-3	2 x 80 oz 1 x 1 L 2 x 40 ml	Monitoring well #1; used disposable bailer.
5-17-95	Water	MW 2-3	2 x 80 oz 1 x 1 L 2 x 40 ml	Monitoring well #2; used disposable bailer.
5-17-95	Water	T-Sump 3	2 x 80 oz 1 x 1 L 2 x 40 ml	Used bailer to sample sump casing.

Notes:

1. (CC) - Indicates concrete core sample.
2. (CS) - Indicates soil sample obtained from 'C' location.
3. (FB) - Indicates field blank.
4. (EB) - Indicates equipment rinsate blank.
5. (CW) - Indicates groundwater sample obtained obtained from 'C' location borehole.
6. (MW) - Indicates groundwater sample obtained from monitoring well.
7. (T-Sump) - Indicates water sample obtained from 'Trichlor.sump' in room adjacent to steam jenny room at Building 360.
8. Refer to text of Report for additional information.

TABLE 3-1
BUILDING 360 CLOSURE INVESTIGATION
STEAM JENNYACCUMULATION PIT
WATER DATA SUMMARY
(Page 1 of 2)

Sample ID	Analytical Constituents	Constituent Conct. (mg/L)
B-360-Sump 1	Volatiles	
	Vinyl Chloride	ND ≥ 0.010
	Methylene Chloride	ND ≥ 0.005
	Acetone	ND ≥ 0.010
	Carbon Disulfide	ND ≥ 0.005
	1,1-Dichloroethene	ND ≥ 0.005
	Chloroform	ND ≥ 0.005
	1,2-Dichloroethane	ND ≥ 0.005
	Methyl Ethyl Ketone	ND ≥ 0.010
	1,1,1-Trichloroethane	ND ≥ 0.005
	Carbon Tetrachloride	ND ≥ 0.005
	Trichloroethene	ND ≥ 0.005
	1,1,2-Trichloroethane	ND ≥ 0.005
	Benzene	ND ≥ 0.005
	4-Methyl-2-Pentanone	ND ≥ 0.010
	Tetrachloroethene	ND ≥ 0.005
	Toluene	ND ≥ 0.005
	Chlorobenzene	ND ≥ 0.005
	Ethylbenzene	ND ≥ 0.005
	Total Xylenes	ND ≥ 0.005
	Ethyl Ether	ND ≥ 0.010
	Ethyl Acetate	ND ≥ 0.015
	Trichorofluoromethane	ND ≥ 0.005
	1,1,2-Trichlro-1,2,2,-Trifluoromethane	ND ≥ 0.005
	Methyl alcohol	ND ≥ 0.330
	N-Butanol	ND ≥ 0.310
	Isobutanol	ND ≥ 0.340
	Semivolatiles	
	2,4,5-Trichlorophenol	ND ≥ 0.010
	2,4,6-Trichlorophenol	ND ≥ 0.010
	Cyclohexanone	ND ≥ 0.010
	Hexachlorobutadiene	ND ≥ 0.010
	M & P Cresol	ND ≥ 0.010
	Hexachloroethane	ND ≥ 0.010
	Pentachlorophenol	ND ≥ 0.010
	Hexachlorobenzene	ND ≥ 0.010
	Nitrobenzene	ND ≥ 0.010
	2-Methylphenol	ND ≥ 0.010
	Total Cresol	**0.020**
	2,4-Dinitrotoluene	ND ≥ 0.010
	Pyridine	ND ≥ 0.030
	1,4-Dichlorobenzene	ND ≥ 0.010
	PCBs	
	Aroclor-1016	ND ≥ 0.0005
	Aroclor-1221	ND ≥ 0.001
	Aroclor-1232	ND ≥ 0.0005
	Aroclor-1242	ND ≥ 0.0005
	Aroclor-1248	ND ≥ 0.0005
	Aroclor-1254	ND ≥ 0.001
	Aroclor-1260	ND ≥ 0.001
	Herbicides	
	2,4-D	ND ≥ 0.001
	2,4,5-TP	ND ≥ 0.0005

See notes at end of table

TABLE 3-1
BUILDING 360 CLOSURE INVESTIGATION
STEAM JENNY ACCUMULATION PIT
WATER DATA SUMMARY
(Page 2 of 2)

Sample ID	Analytical Constituents	Constituent Conct. (mg/L)
B-360-Sump 1	Pesticides	
	Aldrin	ND ≥ 0.00005
	Alpha-BHC	ND ≥ 0.00005
	Beta-BHC	ND ≥ 0.00005
	Gamma-BHC (Lindane)	**0.00010**
	Delta-BHC	ND ≥ 0.00005
	Heptachlor	ND ≥ 0.00005
	Heptachlor Epoxide	ND ≥ 0.00005
	Alpha-Chlordane	ND ≥ 0.00005
	Gamma-Chlordane	ND ≥ 0.00005
	Endosulfan I	ND ≥ 0.00005
	Endosulfan II	ND ≥ 0.00010
	Endosulfan Sufate	ND ≥ 0.00010
	4.4'-DDE	**0.000250**
	4.4'-DDD	ND ≥ 0.00010
	4.4'-DDT	ND ≥ 0.00010
	Dieldrin	ND ≥ 0.00010
	Endrin	ND ≥ 0.00010
	Endrin Aldehyde	ND ≥ 0.00010
	Endrin Ketone	ND ≥ 0.00010
	Methoxychlor	ND ≥ 0.00050
	Toxaphene	ND ≥ 0.0050
	Metals	
	Arsenic	**0.0403**
	Barium	**0.056 LQ**
	Cadmium	**0.0054**
	Chromium	**0.043**
	Copper	**0.155**
	Lead	**0.194**
	Mercury	ND ≥ 0.0002
	Nickel	**0.276**
	Selenium	**0.0234**
	Silver	**0.0080 LQ**
	Thallium	ND ≥ 0.01
	Zinc	**2.59**
	Classical Chemistry	
	Density	**0.999**
	Total Dissolved Solids	**1500**
	Total Suspended Solids	**330**
	Total Cyanide	ND ≥ 0.017
	Total Organic Nitrogen	**3.2**
	Phenol	**0.01 LQ**
	Total Organic Carbon	**110**
	Sulfide	**1.4**
	BTU	ND ≥ 50 BTUs/lb
	Ignitability	ND > 200 °F
	Total Organic Halides	ND ≥ 0.02 %
	pH	**8.7**

Notes:

BTUs/lb - British Thermal Units per pound

LQ - Indicates an estimated value. Constituent detected above method detection limit (MDL) but below the Practical Quantitation Limit (PQL)

mg/L - milligrams per liter

ND - Indicates constituent not detected at or above the specified practical quantitation limit.

TABLE 3-2
CONCRETE ANALYTICAL DATA SUMMARY
BUILDING 360 CLOSURE REPORT
SENECA ARMY DEPOT
Romulus, New York

Parameters (Method)	SAMPLE IDENTIFICATION AND CONSTITUENT CONCENTRATION (ppb)								
	CC1-1	CC1-2	CC1-3	CC2-1	CC2-2	CC2-3	CC3-1	CC3-2	CC3-3
PCBs (8080)	ND ≥ 22	ND ≥ 22	ND ≥ 22	ND ≥ 22	ND ≥ 22	ND ≥ 22	ND ≥ 22	ND ≥ 22	ND ≥ 22
TCLP Metals									
Cadmium	ND ≥ 5	ND ≥ 5	ND ≥ 5	ND ≥ 5	ND ≥ 5	ND ≥ 5	ND ≥ 5	ND ≥ 5	ND ≥ 5
Chromium	ND ≥ 10	ND ≥ 10	ND ≥ 10	ND ≥ 10	ND ≥ 10	ND ≥ 10	**22**	**12**	ND ≥ 10
Lead	ND ≥ 50	ND ≥ 50	ND ≥ 50	ND ≥ 50	ND ≥ 50	ND ≥ 50	ND ≥ 50	ND ≥ 50	ND ≥ 50

Notes:
1. (ppb) - Parts per billion
2. (ND) - Not detected at or above the stated practical quantitation limit.
3. (NA) - Not analyzed.
4. (CC) - Indicates concrete sample.

TABLE 3-3
SOIL ANALYTICAL DATA SUMMARY
BUILDING 360 CLOSURE REPORT
SENECA ARMY DEPOT
Romulus, New York

Parameters (Method)	SAMPLE IDENTIFICATION AND CONSTITUENT CONCENTRATION (ppb)						
	Trip Blank (2/7/95)	CS1 (1-3)	CS2 (1-3)	CS2 (1-3) duplicate	CS3 (0-1.5)	FB-CS2-(1-3)	EB-CS2-(1-3)
Volatiles (8240)	ND≥5	ND≥6.1-120	ND≥6.0-120	ND≥6.1-120	ND≥5.5-110	ND≥5-100	ND≥5-100
PCBs (8080)	NA	ND≥27	ND≥26	ND≥27	ND≥24	NA	ND≥0.65
Metals							
Cadmium	NA	ND≥0.61	ND≥0.60	ND≥0 61	ND≥5.5	NA	ND≥5
Chromium	NA	**20700**	**24700**	**28000**	**18400**	NA	ND≥10
Lead	NA	**7900**	**7800**	**7300**	**5700**	NA	ND≥3

Notes:
1. (ppb) - Parts per billion
2. (ND) - Not detected at or above the stated practical quantitation limit.
3. (NA) - Not analyzed.
4. (CS) - Indicates soil sample obtained from specified interval beneath concrete.
5. (FB) - Indicates field blank sample.
6. (EB) - Indicates equipment rinsate blank.

TABLE 3-4
WATER ANALYTICAL DATA SUMMARY
BUILDING 360 CLOSURE REPORT
SENECA ARMY DEPOT
Romulus, New York

Parameters (Method)	SAMPLE IDENTIFICATION AND CONSTITUENT CONCENTRATION (ppb)						
	Trip Blank (2/9/95)	CW1	CW2	CW3	MW-1	MW-2	T-Sump 1 (2-09-95)
Volatiles (8240) 1,1,1-Trichloroethane	ND<5	ND<5	ND<5	ND<5	ND≥5	ND≥5	14
Semivolatiles (8270) Bis (2-ethylhexyl)phthalate	NA	16U	ND<10	ND<10	ND≥10	ND≥10	ND≥10
PCBs (8080)	NA	ND<0.65	ND<0.65	ND<0.65	ND(J)≥0.65	ND≥0.65	ND<0.65
Metals Cadmium Chromium Lead	 NA NA NA	 ND<5 ND≥10 3.8	 ND<5 ND≥10 ND<3	 ND<5 42.7 10	 ND ≤ 5 20 5.4	 ND≥5 41.2 9.3	 ND≥5 48.4 **197***

Notes:

1. (ppb) - Parts per billion
2. (ND) - Not detected at or above the stated practical quantitation limit
3. (NA) - Not analyzed.
4. (CW) - Indicates groundwater sample obtained from 'c' boring location
5. (MW) - Indicates groundwater sample obtained from monitoring well.
6. (T-Sump) - Indicates water sample from "trichloroethylene sump" within Building 360.
7. (U) - Indicates sample considered undetected due to blank contamination.
8. ND(J) - Indicates sample concentration is estimated as not detected due to poor surrogate recoveries
9. (=) - Indicates parameter detected above site-specific action level
10. (*) - Lead concentration in sample T-Sump 1 (197 ppb) is in excess of action level. Refer to report text for additional information.

TABLE 3-5
FIRST MONTHLY GROUNDWATER ANALYTICAL DATA SUMMARY - (MARCH 1995)
BUILDING 360 CLOSURE REPORT
SENECA ARMY DEPOT
Romulus, New York

Parameters (Method)	SAMPLE IDENTIFICATION AND CONSTITUENT CONCENTRATION (ppb)							
	Trip Blank (3/12/95)	MW1-1	Trip Blank (3/13/95)	MW2-1	Trip Blank (3/23/95)	FB-T-Sump 1 (Field Blank)	T-Sump 1 (3-23-95)	T-Sump 1 Duplicate (3-23-95)
Volatiles (8240)								
Acetone	ND≥100	**2000***	ND ≥ 100	ND ≥ 100	ND ≥ 100	ND ≥ 100	ND ≥ 100	ND ≥ 100
Bromodichloromethane	ND≥5.0	ND≥50	ND ≥ 5.0	ND ≥ 5.0	ND ≥ 5.0	ND ≥ 5.0	**5.5**	**5.9**
Bromoform	ND≥5.0	ND ≥ 50	ND ≥ 5.0	ND ≥ 5.0	ND ≥ 5.0	ND ≥ 5.0	**7.6**	**7.8**
Dibromochloromethane	ND≥5.0	ND ≥ 50	ND ≥ 5.0	ND ≥ 5.0	ND ≥ 5.0	ND ≥ 5.0	**14**	**15**
1,1,1-Trichloroethane	ND≥5.0	ND ≥ 50	ND ≥ 5.0	ND ≥ 5.0	ND ≥ 5.0	ND ≥ 5.0	**18***	**20***
Semivolatiles (8270)	NA	ND≥10-50	NA	ND≥ 10-50	NA	NA	ND≥ 10-50	ND≥ 10 -50
PCBs (8080)	NA	ND ≥ 0.65	NA	ND ≥ 0.65	NA	NA	ND ≥ 0.65	ND ≥ 0.65
Metals								
Cadmium	NA	ND ≥ 5	NA	ND ≥ 5	NA	NA	ND ≥ 5	ND ≥ 5
Chromium	NA	ND ≥ 10	NA	ND ≥ 10	NA	NA	ND ≥ 10	ND ≥ 10
Lead	NA	ND ≥ 3	NA	ND ≥ 3	NA	NA	**30.5***	**38.5***

Notes:

1. (ppb) - Parts per billion
2. (ND) - Not dectected at or above the stated detection limit.
3. (NA) - Not analyzed.
4. (MW) - Indicates groundwater sample obtained from monitoring well.
5. (T-Sump) - Indicates water sample from "trichloroethylene sump" within Building 360.
6. (*) - Indicates parameter detected at or above NYS Ambient Water Quality Standards and/or Guidance Values.
7. (=) - Indicates parameter detected above site-specific action level

TABLE 3-6
SECOND MONTHLY GROUNDWATER ANALYTICAL DATA SUMMARY - (APRIL 1995)
BUILDING 360 CLOSURE REPORT
SENECA ARMY DEPOT
Romulus, New York

Parameters (Method)	SAMPLE IDENTIFICATION AND CONSTITUENT CONCENTRATION (ppb)					
	Trip Blank (4/13/95)	MW1-2	MW1-2 duplicate	FB-MW1-2 (Field Blank)	MW2-2	T-Sump 2
Volatiles (8240)						
Acetone	ND ≥ 100	**1700***	**1700***	ND ≥ 100	ND ≥ 100	ND ≥ 100
1,1,1-Trichloroethane	ND ≥ 5.0	ND ≥ 50	ND ≥ 50	ND ≥ 5.0	ND ≥ 5.0	**16***
Semivolatiles (8270)	NA	ND≥ 10 -50	ND≥ 10-50	NA	ND≥ 10-50	ND≥ 10 -50
PCBs (8080)	NA	ND ≥ 0.5-1.0	ND ≥ 0.5-1.0	NA	ND ≥ 0.5-1.0	ND ≥ 0.5-1.0
Metals						
Cadmium	NA	ND ≥ 5	ND ≥ 5	NA	ND ≥ 5	ND≥ 5
Chromium	NA	ND ≥ 10	ND ≥ 10	NA	**13.3**	ND≥ 10
Lead	NA	ND ≥ 3	ND ≥ 3	NA	ND ≥ 3	**20.4**

Notes:

1. (ppb) - Parts per billion
2. (ND) - Not dectected at or above the stated detection limit.
3. (NA) - Not analyzed.
4. (MW) - Indicates groundwater sample obtained from monitoring well.
5. (T-Sump) - Indicates water sample from "trichloroethylene sump" within Building 360.
6. (*) - Indicates parameter detected at or above NYS Ambient Water Quality Standards and/or Guidance Values
7. (=)- Indicates parameter detected above site-specific action level

TABLE 3-7
THIRD MONTHLY GROUNDWATER ANALYTICAL DATA SUMMARY - (MAY 1995)
BUILDING 360 CLOSURE REPORT
SENECA ARMY DEPOT
Romulus, New York

Parameters (Method)	SAMPLE IDENTIFICATION AND CONSTITUENT CONCENTRATION (ppb)					
	Trip Blank (5/17/95)	MW1-3	MW1-3 duplicate	FB-MW2-3 (Field Blank)	MW2-3	T-Sump 3
Volatiles (8240)						
Acetone	ND ≥ 100	**110***	**150***	ND ≥ 100	ND ≥ 100	ND ≥ 100
1,1-Dichloroethane	ND ≥ 5.0	**7.0***	**7.6***	ND ≥ 5.0	ND ≥ 5.0	ND ≥ 5.0
1,1,1-Trichloroethane	ND ≥ 5.0	ND ≥ 5.0	ND ≥ 5.0	ND ≥ 5.0	ND ≥ 5.0	**18***
1,1,2,2-Tetrachloroethane	ND ≥ 5.0	ND ≥ 5.0	**7.6***	ND ≥ 5.0	ND ≥ 5.0	ND ≥ 5.0
Total Xylenes	ND ≥ 5.0	ND ≥ 5.0	**11***	ND ≥ 5.0	ND ≥ 5.0	ND ≥ 5.0
Semivolatiles (8270)						
2-Methylnapthalene	NA	ND ≥ 10	ND ≥ 10	NA	**110**	ND ≥ 10
Napthalene	NA	ND ≥ 10	ND ≥ 10	NA	**950***	ND ≥ 10
PCBs (8080)	NA	ND ≥ 0.65	ND ≥ 0.65	NA	ND ≥ 0.65	ND ≥ 0.65
Metals						
Cadmium	NA	ND ≥ 5	ND ≥ 5	NA	ND ≥ 5	ND ≥ 5
Chromium	NA	ND ≥ 10	ND ≥ 10	NA	**38.3**	ND ≥ 10
Lead	NA	ND ≥ 3	ND ≥ 3	NA	ND ≥ 3	**18.0**

Notes:

1. (ppb) - Parts per billion
2. (ND) - Not detected at or above the stated detection limit.
3. (NA) - Not analyzed.
4. (MW) - Indicates groundwater sample obtained from monitoring well.
5. (T-Sump) - Indicates water sample from "trichloroethylene sump" within Building 360.
6. (*) - Indicates parameter detected at or above NYS Ambient Water Quality Standards and/or Guidance Values.
7. (=) - Indicates parameter detected above site-specific action level

TA[illegible] 5-1
SAMPLE IDENTIFICATION TABLE
INITIAL SAMPLING EVENT
B-360 CLOSURE INVESTIGATION
SENECA ARMY DEPOT
ROMULUS, NEW YORK
(Page 1 of 1)

Field Sample I.D.	Laboratory Sample I.D.	Lab Code	Analytical Parameters	Matrix
CW1	C5B100043-001	Q[a]	8240, 8270, 8080, Metals	WATER
CW2	C5B100043-002	Q	8240, 8270, 8080, Metals	WATER
CW3	C5B100043-003	Q	8240, 8270, 8080, Metals	WATER
MW-1	C5B100043-004	Q	8240, 8270, 8080, Metals	WATER
MW-2	C5B100043-005	Q	8240, 8270, 8080, Metals	WATER
T-SUMP1	C5B100043-006	Q	8240, 8270, 8080, Metals	WATER
CS1-(1-3)	C5B100043-009	Q	8240, 8080, Metals	SOIL
CS2-(1-3)	C5B100043-010	Q	8240, 8080, Metals	SOIL
CS2-(1-3)DUP	C5B100043-011	Q	8240, 8080, Metals	SOIL
CS3-(0.-1.5)	C5B100043-012	Q	8240, 8080, Metals	SOIL
CC1-1	C5B100043-015	Q	8080, TCLP Metals	CONCRETE
CC1-2	C5B100043-016	Q	8080, TCLP Metals	CONCRETE
CC1-3	C5B100043-017	Q	8080, TCLP Metals	CONCRETE
CC2-1	C5B100043-018	Q	8080, TCLP Metals	CONCRETE
CC2-2	C5B100043-019	Q	8080, TCLP Metals	CONCRETE
CC2-3	C5B100043-020	Q	8080, TCLP Metals	CONCRETE
CC3-1	C5B100043-021	Q	8080, TCLP Metals	CONCRETE
CC3-2	C5B100043-022	Q	8080, TCLP Metals	CONCRETE
CC3-3	C5B100043-023	Q	8080, TCLP Metals	CONCRETE
B-360-SUMP1	193209	K[b]	8240, 8015, 8270, pH, DENSITY, METALS, 8150, 8080, BTU, FLASH POINT, VISCOSITY, TOXICITY, CN^-(TOTAL AND AMENABLE), SULFIDE, PHENOL, TOC, TON, TSS, TDS	WATER

[a] Quanterra
[b] Kodak

TABLE 5-2
SUMMARY OF QA/QC FOR VOLATILES (8240) ANALYSES
INITIAL SAMPLING EVENT
BUILDING 360 CLOSURE INVESTIGATION
SENECA ARMY DEPOT
ROMULUS, NEW YORK

Sample I.D.	Surrogate % Recovery	Corresponding Batch QA/QC Sample I.D.	Matrix Spike/Duplicate	
			Precision % RPD[a]	Accuracy % Recovery
	QC Limits[b] 76-115		QC Limits[b] 10-16	QC Limits[b] 69-133
CW1	91-99	C5B10043 MS/MSD BATCH: 5053004	1-14*	89-103
CW2	87-99			
CW3	94-99			
MW1	93-101			
MW2	91-99			
T-SUMP	92-101			
CS1-(1-3)	94-103			
CS2-(1-3)	106-114	C5B10043 MS/MSD BATCH: 5053022	0-9	91-107
CS2-(1-3) DUP	89-100			
CS3-(0-1.5)	91-103			
B-360 SUMP1	94-103	0193337 MS	NC[c]	97-108

[a] "RPD" indicates relative percent difference.
[b] QC limits from "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," U.S. EPA SW-846, 3rd Revised Edition, November 1986.
[c] "NC" indicates not calculated by laboratory.
* Indicates value outside QC limits.

TABLE 5-3
SUMMARY OF QA/QC FOR SEMIVOLATILES (8270) & HERBICIDES (8150) ANALYSES
INITIAL SAMPLING EVENT
BUILDING 360 CLOSURE INVESTIGATION
SENECA ARMY DEPOT
ROMULUS, NEW YORK

Sample I.D.	Surrogate % Recovery	Corresponding Batch QA/QC Sample I.D.	Matrix Spike/Duplicate	
			Precision % RPD[a]	Accuracy % Recovery
	QC Limit[b] 10-141		QC Limits[b] 24-76	QC Limits[b] 1-152
CW1	60-96	C5B100043 MS/MSD BATCH 5047024	8-18	47*-122
CW2	58-100			
CW3	59-95			
MW1	51-96			
MW2	61-97			
T-SUMP	58-108			
B-360 SUMP1	54-111	NR[c]	NR	NR
HERBICIDES				
B-360 SUMP1	75-117	NR	NR	NR

[a] "RPD" indicates relative percent difference.
[b] QC limits from "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," U.S. EPA SW-846, 3rd Revised Edition, November 1986.
[c] "NR" indicates not reported by laboratory
* Indicates value outside QC limits.

TABLE 5-4
SUMMARY OF QA/QC FOR PESTICIDES/PCB'S (8080) ANALYSES
INITIAL SAMPLING EVENT
BUILDING 360 CLOSURE INVESTIGATION
SENECA ARMY DEPOT
ROMULUS, NEW YORK
(Page 1 of 1)

Sample I.D.	Surrogate % Recovery	Corresponding Batch QA/QC Sample I.D.	Matrix Spike/Duplicate	
			Precision % RPD[a]	Accuracy % Recovery
	QC Limits[b] 44-155		QC Limits[b] 0-29	QC Limits[b] 62-129
CW1	81-116	CW-2 MS/MSD	6	81-85
CW2	59-106			
CW3	19*-69			
MW1	17*-19*			
MW2	25*-68			
T-SUMP	23*-78			
CS1-(1-3)	104-117			
CS2-(1-3)	104-114			
CS2-(1-3) DUP	99-115			
CS3-(0-1.5)	107-116			
CC1-1	106-120			
CC1-2	99-109			
CC1-3	95-111			
CC2-1	113-131			
CC2-2	90-110			
CC2-3	96-122			
CC3-1	105-123			
CC3-2	100-122			
CC3-3	104-123			
B-360 SUMP1	66 - PCB 122 - PEST	NR[c]	NR	NR

[a] "RPD" indicates relative percent difference.
[b] QC limits from "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," U.S. EPA SW-846, 3rd Revised Edition, November 1986
[c] "NR" indicates not reported by laboratory.
* Indicates value outside QC limits.

TABLE 5-5
SUMMARY OF QA/QC FOR INORGANICS (METALS) ANALYSES
INITIAL SAMPLING EVENT
BUILDING 360 CLOSURE INVESTIGATION
SENECA ARMY DEPOT
ROMULUS, NEW YORK
(Page 1 of 1)

Sample I.D.	Surrogate % Recovery	Corresponding Batch QA/QC Sample I.D.	Matrix Spike/Duplicate	
			Precision % RPD[a]	Accuracy % Recovery
	QC Limits[b] 80-120		QC Limits[b] 0-20	QC Limits[b] 80-120
CW1	97-101	T-SUMP MS/MSD	1	88-89
CW2				
CW3				
MW1				
MW2				
T-SUMP				
CS1-(1-3)	94-95	CS3-(0-1.5) MS/MSD	1-3	76*-83
CS2-(1-3)				
CS2-(1-3) DUP				
CS3-(0-1.5)				
TCLP	87-95	C5B070031-001 MS/MSD	1-5	79*-85
CC1-1				
CC1-2				
CC1-3				
CC2-1				
CC2-2				
CC2-3				
CC3-1				
CC3-2				
CC3-3				
B-360 SUMP1	79-103	NR[c]	NR	NR

[a] "RPD" indicates relative percent difference.
[b] QC limits from "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," U.S. EPA SW-846, 3rd Revised Edition, November 1986
[c] "NR" indicates not reported by the laboratory.
* Indicates value outside QC limits.

TABLE 5-6
SUMMARY OF BLANK ANALYSES
INITIAL SAMPLING EVENT
B-360 CLOSURE INVESTIGATION
SENECA ARMY DEPOT
ROMULUS, NEW YORK
(Page 1 of 2)

Blank I.D.	Parameters Detected					Corresponding Sample I.D.
	VOC's (ug/L)	SemiVOCs BNA (ug/L)	PCB/Pest (ug/L)	Herbicides (ug/L)	Metals (ug/L)	
INTER-LAB VOLATILE BLANK BATCH 5053004	ND[a]	---[b]	---	---	---	CW1, CW2, CW3, MW-1, MW-2, T-SUMP, TB(2-7), TB(2-9), FB-CS2-(1-3), EB-CS2-(1-3), TB9(2-9), TB111(2-9)
INTER-LAB VOLATILE BLANK BATCH 5053022	ND	---	---	---	---	CS1-(1-3), CS2-(1-3), CS2-(1-3) DUP, CS3-(0-1.5)
INTER-LAB SEMIVOLATILE BLANK BATCH 5047024	---	1	---	---	---	CW1, CW2, CW3, MW-1, MW-2, T-SUMP 1
INTER-LAB SEMIVOLATILE BLANK BATCH 5046030	---	---	ND	---	---	CW1, CW2, CW3, MW-1, MW-2, T-SUMP, EB-CS2-(1-3)
INTER-LAB SEMIVOLATILE BLANK BATCH 5046017	---	---	ND	---	---	CS1-(1-3), CS2-(1-3), CS2-(1-3) DUP, CS3-(0-1.5), CC1-1, CC1-2, CC1-3, CC2-1, CC2-2, CC2-3, CC3-1, CC3-2, CC3-3
INTER-LAB METALS BLANK BATCH 5046086	---	---	---	---	ND	C5-1-(1-3), CS2-(1-3), CS2-(1-3) DUP, CS2-(0-1.5)
INTER-LAB METALS BLANK BATCH 5046089	---	---	---	---	ND	CW1, CW2, CW3, MW-1, MW-2, T-SUMP, EB-CS2-(1-3)
INTER-LAB TCLP METALS BLANK BATCH 5046099	---	---	---	---	ND	CC1-1, CC1-2, CC1-3, CC2-1, CC2-2, CC2-3, CC3-1, CC3-2, CC3-3
METALS - VARIOUS BLANKS FOR EACH METAL	---	---	---	---	2	B-360-SUMP1
VOLATILE BLANK (8240, 8015)	ND	---	---	---	---	B-360-SUMP1
SEMIVOLATILE BLANK (8270)	---	3	---	---	---	B-360-SUMP1
PEST/PCB, HERBICIDE BLANK (8080, 8150)	---	---	ND	ND	---	B-360 SUMP1

See notes at end of table

TABLE 5-6
SUMMARY OF BLANK ANALYSES
INITIAL SAMPLING EVENT
B-360 CLOSURE INVESTIGATION
SENECA ARMY DEPOT
ROMULUS, NEW YORK
(Page 1 of 2)

Blank I.D.	Parameters Detected					Corresponding Sample I.D.
	VOC's (ug/L)	SemiVOCs BNA (ug/L)	PCB/Pest (ug/L)	Herbicides (ug/L)	Metals (ug/L)	
INTER-LAB VOLATILE BLANK BATCH 5053004	ND[a]	---[b]	---	---	---	CW1, CW2, CW3, MW-1, MW-2, T-SUMP, TB(2-7), TB(2-9), FB-CS2-(1-3), EB-CS2-(1-3), TB9(2-9), TB111(2-9)
INTER-LAB VOLATILE BLANK BATCH 5053022	ND	---	---	---	---	CS1-(1-3), CS2-(1-3), CS2-(1-3) DUP, CS3-(0-1.5)
INTER-LAB SEMIVOLATILE BLANK BATCH 5047024	---	1	---	---	---	CW1, CW2, CW3, MW-1, MW-2, T-SUMP 1
INTER-LAB SEMIVOLATILE BLANK BATCH 5046030	---	---	ND	---	---	CW1, CW2, CW3, MW-1, MW-2, T-SUMP, EB-CS2-(1-3)
INTER-LAB SEMIVOLATILE BLANK BATCH 5046017	---	---	ND	---	---	CS1-(1-3), CS2-(1-3), CS2-(1-3) DUP, CS3-(0-1.5), CC1-1, CC1-2, CC1-3, CC2-1, CC2-2, CC2-3, CC3-1, CC3-2, CC3-3
INTER-LAB METALS BLANK BATCH 5046086	---	---	---	---	ND	C5-1-(1-3), CS2-(1-3), CS2-(1-3) DUP, CS2-(0-1.5)
INTER-LAB METALS BLANK BATCH 5046089	---	---	---	---	ND	CW1, CW2, CW3, MW-1, MW-2, T-SUMP, EB-CS2-(1-3)
INTER-LAB TCLP METALS BLANK BATCH 5046099	---	---	---	---	ND	CC1-1, CC1-2, CC1-3, CC2-1, CC2-2, CC2-3, CC3-1, CC3-2, CC3-3
METALS - VARIOUS BLANKS FOR EACH METAL	---	---	---	---	2	B-360-SUMP1
VOLATILE BLANK (8240, 8015)	ND	---	---	---	---	B-360-SUMP1
SEMIVOLATILE BLANK (8270)	---	3	---	---	---	B-360-SUMP1
PEST/PCB, HERBICIDE BLANK (8080, 8150)	---	---	ND	ND	---	B-360 SUMP1

See notes at end of table

TABLE 5-6
SUMMARY OF BLANK ANALYSES
INITIAL SAMPLING EVENT
B-360 CLOSURE INVESTIGATION
SENECA ARMY DEPOT
ROMULUS, NEW YORK
(Page 2 of 2)

Blank I.D.	Parameters Detected					Corresponding Sample I.D.
	VOC's (ug/L)	SemiVOCs BNA (ug/L)	PCB/Pest (ug/L)	Herbicides (ug/L)	Metals (ug/L)	
TRIP BLANK - 11-30-95	ND[a]	---[b]	---	---	---	B-360 SUMP1
TRIP BLANK - 2-7-95	ND	---	---	---	---	CS1-(1-3), CS2-(1-3), DUP, CS3(0-1.5), FB-CS2-(1-3), EB-CS2-(1-3)
TRIP BLANK - 2-9-95	ND	---	---	---	---	CW1, CW2, CW3, MW-1, MW-2, T-SUMP1
FIELD BLANK CS2-(1-3)	ND	---	---	---	---	CS1-(1-3), CS2-(1-3), CS2-(1-3) DUP, CS3-(0-1.5), EB-CS2-(1-3)
EQUIPMENT BLANK CS2-(1-3)	ND	---	ND	---	ND	CS1-(1-3), CS2-(1-3), CS2-(1-3) DUP, CS3-(0-1.5), CCI-1, CC1-2, CC1-3, CC2-1, CC2-2, CC2-2, CC2-3, CC3-1, CC3-2, CC3-3

[a] "ND" indicates no parameters detected above quantiation limits.
[b] "---" indicates sample not analyzed for this parameter.

1 bis (2-ethylhexyl) phthalate = 73 ug/L
2 Mercury = 0.149 ug/L
3 Total Cresols = 0.02 mg/L

TABLE 5-7
HOLDING TIME VERIFICATION
INITIAL SAMPLING EVENT
BUILDING 360 CLOSURE INVESTIGATION
SENECA ARMY DEPOT
ROMULUS, NEW YORK

Sample I.D.	DATES (1995)											
	Sample Collection	Sample Receipt at Lab	VOC 8240	SVOC 8270		Pest/PCB's 8080		Metals 6010		TCLP Metals (1311)		Herbicides 8150	
			Analyzed	Extracted	Analyzed	Extracted	Analyzed	Extracted	Analyzed	Extracted	Analyzed	Extracted	Analyzed
CW1	2-9	2-10	2-20	2-13	2-16	2-14	2-16	2-14	2-15	---[a]	---	---	---
CW2	2-9	2-10	2-20	2-13	2-16	2-14	2-16	2-14	2-15	---	---	---	---
CW3	2-9	2-10	2-20	2-13	2-16	2-14	2-16	2-14	2-15	---	---	---	---
MW-1	2-9	2-10	2-20	2-13	2-16	2-14	2-16	2-14	2-15	---	---	---	---
MW-2	2-9	2-10	2-20	2-13	2-16	2-14	2-16	2-14	2-15	---	---	---	---
T-SUMP	2-9	2-10	2-20	2-13	2-16	2-14	2-16	2-14	2-15	---	---	---	---
CS1-(1-3)	2-7	2-10	2-20	---	---	2-13	2-16	2-14	2-15	---	---	---	---
CS2-(1-3)	2-7	2-10	2-20	---	---	2-13	2-16	2-14	2-15	---	---	---	---
CS2-(1-3) DUP	2-7	2-10	2-20	---	---	2-13	2-16	2-14	2-15	---	---	---	---
CS3-(0-1.5)	2-8	2-10	2-20	---	---	2-13	2-16	2-14	2-15	---	---	---	---
CC1-1	2-7	2-10	---	---	---	2-13	2-20	---	---	2-14	2-15,16	---	---
CC1-2	2-7	2-10	---	---	---	2-13	2-20	---	---	2-14	2-15,16	---	---
CC1-3	2-7	2-10	---	---	---	2-13	2-20	---	---	2-14	2-15,16	---	---
CC2-1	2-7	2-10	---	---	---	2-13	2-20	---	---	2-14	2-15,16	---	---
CC2-2	2-7	2-10	---	---	---	2-13	2-20	---	---	2-14	2-15,16	---	---
CC2-3	2-7	2-10	---	---	---	2-13	2-20	---	---	2-14	2-15,16	---	---
CC3-1	2-8	2-10	---	---	---	2-13	2-20	---	---	2-14	2-15,16	---	---
CC3-2	2-8	2-10	---	---	---	2-13	2-20	---	---	2-14	2-15,16	---	---
CC3-3	2-8	2-10	---	---	---	2-13	2-20	---	---	2-14	2-15,16	---	---
TB(2-7)	2-7	2-10	2-20	---	---	---	---	---	---	---	---	---	---
TB(2-9)	2-9	2-10	2-20	---	---	---	---	---	---	---	---	---	---
FB-CS2-(1-3)	2-7	2-10	2-20	---	---	---	---	---	---	---	---	---	---
EB-CS2-(1-3)	2-7	2-10	2-20	---	---	2-14	2-16	2-14	2-15	---	---	---	---

See notes at end of table.

TABLE 5-7
HOLDING TIME VERIFICATION
INITIAL SAMPLING EVENT
BUILDING 360 CLOSURE INVESTIGATION
SENECA ARMY DEPOT
ROMULUS, NEW YORK

Sample I.D.	DATES (1995)												
	Sample Collection	Sample Receipt at Lab	VOC 8240	SVOC 8270		Pest/PCB's 8080		Metals 6010		TCLP Metals (1311)		Herbicides 8150	
			Analyzed	Extracted	Analyzed	Extracted	Analyzed	Extracted	Analyzed	Extracted	Analyzed	Extracted	Analyzed
TB9(2-9)	2-9	2-10	2-20	---[a]	---	---	---	---	---	---	---	---	---
TB111(2-9)	2-9	2-10	2-21	---	---	---	---	---	---	---	---	---	---
TB(11-30-94)	11-30-94	12-1-94	12-5-94	---	---	---	---	---	---	---	---	---	---
B-360-SUMP1	11-30-94	12-1-94	12-5-94	12-5-94	12-8-94	12-6-94	12-7-94	12-6,7-94	12-6,7-94	---	---	12-6-94	12-9-94

[a] "---" Indicates sample not analyzed for this parameter.

TABLE 5-8
SAMPLE IDENTIFICATION TABLE
MONTHLY MONITOR WELL SAMPLING
B-360 CLOSURE INVESTIGATION
SENECA ARMY DEPOT
ROMULUS, NEW YORK
(Page 1 of 1)

Field Sample I.D.	Laboratory Sample I.D.	Lab Code	Analytical Parameters	Matrix
MW1-1	C5C140053-002	Q	8240, 8270, 8080, Metals	WATER
MW2-1	C5C150014-002	Q	8240, 8270, 8080, Metals	WATER
T-SUMP 1-1	C5C250030-004	Q	8240, 8270, 8080, Metals	WATER
T-SUMP 1-1 DUP	C5C250030-005	Q	8240, 8270, 8080, Metals	WATER
MW1-2	C5D150006-002	Q	8240, 8270, 8080, Metals	WATER
MW1-2 DUP	C5D150006-003	Q	8240, 8270, 8080, Metals	WATER
MW2-2	C5D150006-005	Q	8240, 8270, 8080, Metals	WATER
T-SUMP 2	C5D150006-006	Q	8240, 8270, 8080, Metals	WATER
MW1-3	C5E190025-003	Q	8240, 8270, 8080, Metals	WATER
MW1-3 DUP	C5E190025-005	Q	8240, 8270, 8080, Metals	WATER
MW2-3	C5E190025-002	Q	8240, 8270, 8080, Metals	WATER
T-SUMP 3	C5E190025-004	Q	8240, 8270, 8080, Metals	WATER

Q - Quanterra

TABLE 5-9
SUMMARY OF QA/QC FOR VOLITILES (8240) ANALYSES
MONTHLY MONITOR WELL SAMPLING
BUILDING 360 CLOSURE INVESTIGATION
SENECA ARMY DEPOT
ROMULUS, NEW YORK
(Page 1 of 1)

Sample I.D.	Surrogate % Recovery	Corresponding Batch QA/QC Sample I.D.	Matrix Spike/Duplicate	
			Precision % RPD[a]	Accuracy % Recovery
	QC Limits[b] 76-115		QC Limits[b] 10-16	QC Limits[b] 69-133
MW1-1	99-103	5086001	0-12	95-115
MW2-1	95-100			
T-SUMP1-1	95-97	5100080	1-8	89-99
T-SUMP1-1 DUP	98-99			
MW1-2	102-110	5115059	0-9	86-103
MW1-2 DUP	103-108			
MW2-2	89-99			
T-SUMP 2	85-98			
MW2-3	104-111	5150088	8-20*	91-119
MW1-3	92-105			
T-SUMP 3	101-108			
MW1-3 DUP	96-107			

[a] "RPD" indicates relative percent difference.
[b] QC limits from "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," U.S. EPA SW-846, 3rd Revised Edition, November 1986.
* Indicates value outside QC limits.

TABLE 5-10
SUMMARY OF QA/QC FOR SEMIVOLATILES (8270) ANALYSES
MONTHLY MONITOR WELL SAMPLING
BUILDING 360 CLOSURE INVESTIGATION
SENECA ARMY DEPOT
ROMULUS, NEW YORK
(Page 1 of 1)

Sample I.D.	Surrogate % Recovery	Corresponding Batch QA/QC Sample I.D.	Matrix Spike/Duplicate	
			Precision % RPD[a]	Accuracy % Recovery
	QC Limits[b] 10-141		QC Limits[b] 24-76	QC Limits[b] 1-152
MW1-1	56-118	5076127	2-38*	54-199*
MW2-1	76-134*	5079121	0-20	58-122
T-SUMP1-1	51-150*	5089147	1-10	66-153*
T-SUMP1-1 DUP	78-112			
MW1-2	43-106	5110105	0-21	59-139
MW1-2 DUP	65-118			
MW2-2	42-121			
T-SUMP 2	50-103			
MW2-3	60-79	5153074	0-23	64-100
MW1-3	48-76			
T-SUMP 3	40-61			
MW1-3 DUP	31-58			

[a] "RPD" indicates relative percent difference.
[b] QC limits from "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," U.S. EPA SW-846, 3rd Revised Edition, November 1986.
* Indicates value outside QC limits.

TABLE 5-11
SUMMARY OF QA/QC FOR PCB's (8080) ANALYSES
MONTHLY MONITORING WELL SAMPLING
BUILDING 360 CLOSURE INVESTIGATION
SENECA ARMY DEPOT
ROMULUS, NEW YORK
(Page 1 of 1)

Sample I.D.	Surrogate % Recovery	Corresponding Batch QA/QC Sample I.D.	Matrix Spike/Duplicate	
			Precision % RPD[a]	Accuracy % Recovery
	QC Limits[b] 44-155		QC Limits[b] 0-29	QC Limits[b] 62-129
MW1-1	57-92	5075002	2	71-73
MW2-1	52*-93			
T-SUMP1-1	39*-92	5093064	8	79-86
T-SUMP1-1 DUP	59-96			
MW1-2	55*-79	5109097	13	71-81
MW1-2 DUP	47*-77			
MW2-2	64-85			
T-SUMP 2	72-85			
MW2-3	76-86	5145155	2	84-86
MW1-3	52*-81			
T-SUMP 3	46*-83			
MW1-3 DUP	56*-74			

[a] "RPD" indicates relative percent difference.
[b] QC limits from "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," U.S. EPA SW-846, 3rd Revised Edition, November 1986.
* Indicates value outside QC limits.

TABLE 5-12
SUMMARY OF QA/QC FOR INORGANICS (METALS) ANALYSES
MONTHLY MONITOR WELL SAMPLING
BUILDING 360 CLOSURE INVESTIGATION
SENECA ARMY DEPOT
ROMULUS, NEW YORK
(Page 1 of 1)

Sample I.D.	Corresponding Batch QA/QC Sample I.D.	Matrix Spike/Duplicate	
		Precision % RPD[a]	Accuracy % Recovery
		QC Limits[b] 0-20	QC Limits[b] 80-120
MW1-1	NR[c]	NR	NR
MW2-1	5082115	1-2	89-137*
T-SUMP1-1	5087085	1	97-103
T-SUMP1-1 DUP			
MW1-2	5115073	0	95-103
MW1-2 DUP			
MW2-2			
T-SUMP 2			
MW2-3	5146091	1	86-92
MW1-3			
T-SUMP 3			
MW1-3 DUP			

[a] "RPD" indicates relative percent difference.
[b] QC limits from "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," U.S. EPA SW-846, 3rd Revised Edition, November 1986.
[c] "NR" indicates not reported by laboratory.
* Indicates value outside QC limits.

TABLE 5-13
SUMMARY OF BLANK ANALYSES
MONTHLY MONITOR WELL SAMPLING
B-360 CLOSURE INVESTIGATION
SENECA ARMY DEPOT
ROMULUS, NEW YORK
(Page 1 of 2)

Blank I.D.	Parameters Detected				Corresponding Sample I.D.
	VOC's (ug/L)	SemiVOCs BNA (ug/L)	PCB's (ug/L)	Metals (ug/L)	
C5C270000-001	ND	---[a]	---	---	MW1-1, TB (3/12)
C5C170000-127	---	ND	---	---	MW1-1
C5C160000-002	---	---	ND	---	MW1-1
C5C140053	---	---	---	ND	MW1-1
C5C270000-001	ND	---	---	---	MW2-1, TB (3/13)
C5C200000-121	---	ND	---	---	MW2-1
C5C160000-002	---	---	ND	---	MW2-1
C5C150014	---	---	---	ND	MW2-1
C5D100000-080	ND	---	---	---	T-SUMP1-1, T-SUMP1-1 DUP, TB (3/23), FB-T-SUMP1-1
C5C300000-147	---	ND	---	---	T-SUMP1-1, T-SUMP1-1 DUP
C5D030000-064	---	---	ND	---	T-SUMP1-1, T-SUMP1-1 DUP
C5C250030	---	---	---	ND	T-SUMP1-1, T-SUMP1-1 DUP
C5D250000-059	ND	---	---	---	MW1-2, MW1-2 DUP, MW2-2, T-SUMP 2, TB (4/13), FB-MW1
C5D200000-105	---	ND	---	---	MW1-2, MW1-2 DUP, MW2-2, T-SUMP 2
C5D190000-097	---	---	ND	---	MW1-2, MW1-2 DUP, MW2-2, T-SUMP 2

See Notes at End of Table

TABLE 5-13
SUMMARY OF BLANK ANALYSES
MONTHLY MONITOR WELL SAMPLING
B-360 CLOSURE INVESTIGATION
SENECA ARMY DEPOT
ROMULUS, NEW YORK
(Page 2 of 2)

Blank I.D.	Parameters Detected				Corresponding Sample I.D.
	VOC's (ug/L)	SemiVOCs BNA (ug/L)	PCB's (ug/L)	Metals (ug/L)	
C5D150006	---	---	---	ND	MW1-2, MW1-2 DUP, MW2-2, T-SUMP 2
C5E300000-088	ND	---	---	---	MW2-3, MW1-3, T-SUMP 3, MW1-3 DUP, TB (5/17), FB-MW2
C5E250000-155	---[a]	---	ND	---	MW2-3, MW1-3, T-SUMP 3, MW1-3 DUP
C5F020000-074	---	1	---	---	MW2-3, MW1-3, T-SUMP 3, MW1-3 DUP
C5E190025	---	---	---	ND	MW2-3, MW1-3, T-SUMP 3, MW1-3 DUP
TB (3/23)	ND	---	---	---	FB-T-SUMP 1-1, T-SUMP 1, T-SUMP 1-1 DUP
FB-T-SUMP 1-1	ND	---	---	---	T-SUMP 1-1, T-SUMP 1-1 DUP
TB (3/13)	ND	---	---	---	MW2-1
TB (3/12)	ND	---	---	---	MW1-1
TB (4/13)	ND	---	---	---	MW1-2, MW1-2 DUP, FB-MW1-2, MW2-2, T-SUMP 2
FB-MW1-2	ND	---	---	---	MW1-2, MW1-2 DUP, MW2-2, T-SUMP 2
TB (5/17)	ND	---	---	---	MW2-3, MW1-3, T-SUMP 3, MW1-3 DUP, FB-MW2-3
FB-MW2-3	ND	---	---	---	MW2-3, MW1-3, T-SUMP 3, MW1-3 DUP

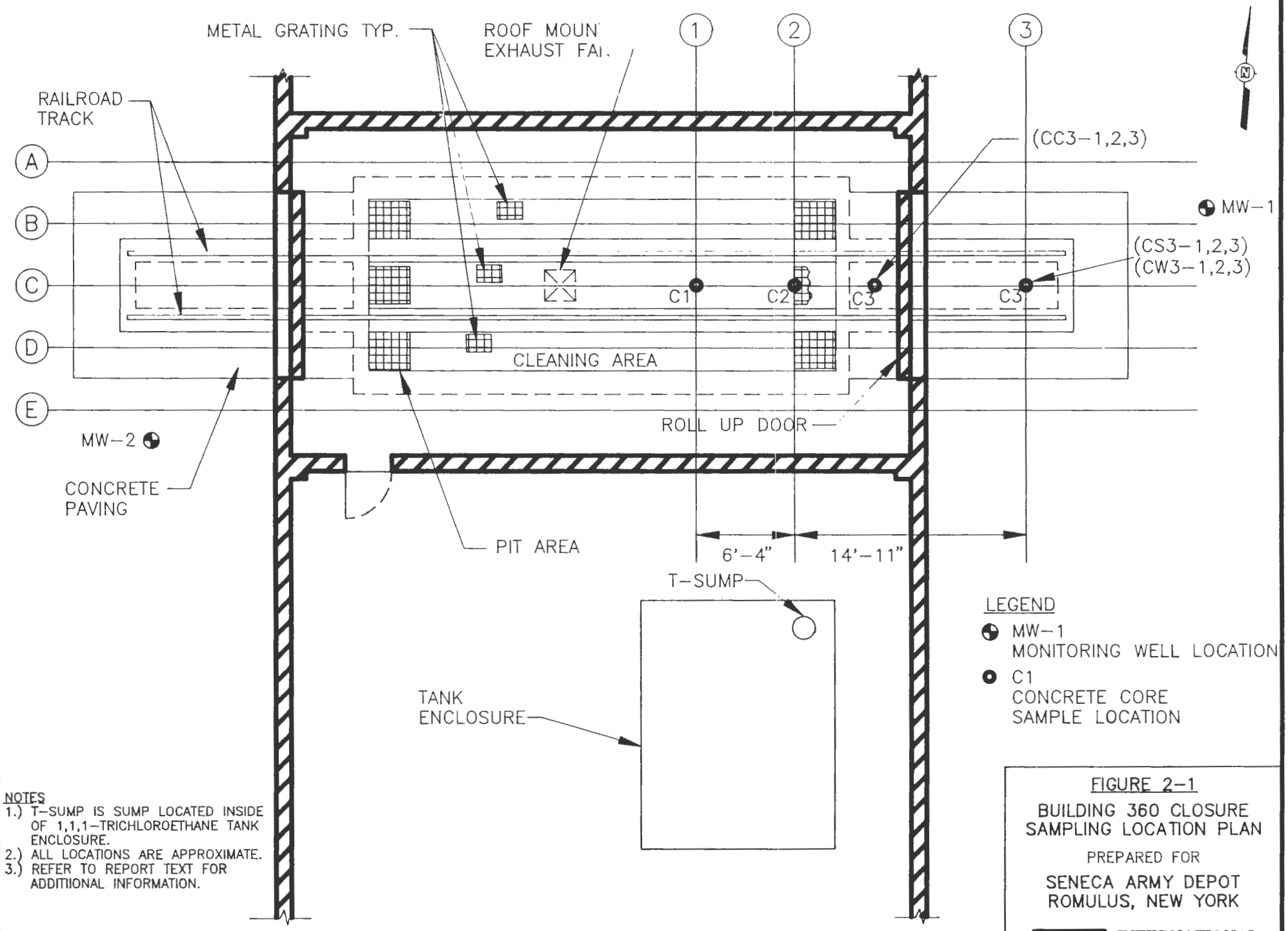
1- bis(2-ethylhexyl)phthalate 0.0014J ug/L
di-n-butylphthalate 0.0014J ug/L
3-methylphenol & 4-methylphenol 0.0014J mg/L

[a] "---" indicates sample not analyzed for this parameter

TABLE 5-14
HOLDING TIME VERIFICATION
MONTHLY MONITOR WELL SAMPLING
BUILDING 360 CLOSURE INVESTIGATION
SENECA ARMY DEPOT
ROMULUS, NEW YORK
(Page 1 of 1)

Sample I.D.	DATES (1995)								
	Sample Collection	Sample Receipt at Lab	VOC 8240	SVOC 8270		PCB's 8080		Metals 6010	
			Analyzed	Extracted	Analyzed	Extracted	Analyzed	Extracted	Analyzed
MW1-1	3/12	3/14	3/23	3/15	3/28	3/15	3/17	3/23	3/26
MW2-1	3/13	3/15	3/23	3/16	3/27	3/15	3/17	3/23	3/26
T-SUMP 1-1	3/23	3/25	4/4	3/28	4/7	3/29	4/3	3/28	3/30
T-SUMP 1-1 DUP	3/23	3/25	4/4	3/28	4/10	3/29	4/3	3/28	3/30
MW1-2	4/13	4/15	4/25	4/18	4/25	4/19	4/21	4/25	4/27
MW1-2 DUP	4/13	4/15	4/25	4/18	4/25	4/19	4/21	4/25	4/27
MW2-2	4/13	4/15	4/24	4/18	4/26	4/19	4/21	4/25	4/27
T-SUMP 2	4/13	4/15	4/24	4/18	4/26	4/19	4/21	4/25	4/27
MW1-3	5/17	5/19	5/30	5/24	6/6	5/24	5/30	5/26	6/1
MW1-3 DUP	5/17	5/19	5/30	5/24	6/6	5/24	5/30	5/26	6/1
MW2-3	5/17	5/19	5/29	5/24	6/7	5/24	5/30	5/26	6/1
T-SUMP 3	5/17	5/19	5/29	5/24	6/6	5/24	5/30	5/26	6/1
TB (3/23)	3/23	3/25	4/4	---*	---	---	---	---	---
FB-T-SUMP 1-1	3/23	3/25	4/4	---	---	---	---	---	---
TB (3/13)	3/13	3/15	3/23	---	---	---	---	---	---
TB (3/12)	3/13	3/14	3/22	---	---	---	---	---	---
TB (4/13)	4/13	4/15	4/24	---	---	---	---	---	---
FB-MW1-2	4/13	4/15	4/24	---	---	---	---	---	---
TB (5/17)	5/17	5/19	5/29	---	---	---	---	---	---
FB-MW2-3	5/17	5/19	5/29	---	---	---	---	---	---

* "---" indicates sample not analyzed for this parameter



LEGEND

- MW-1 MONITORING WELL LOCATION
- C1 CONCRETE CORE SAMPLE LOCATION

NOTES

1.) T-SUMP IS SUMP LOCATED INSIDE OF 1,1,1-TRICHLOROETHANE TANK ENCLOSURE.
2.) ALL LOCATIONS ARE APPROXIMATE.
3.) REFER TO REPORT TEXT FOR ADDITIONAL INFORMATION.

SCALE: 1/8"=1'-0"

FIGURE 2-1

BUILDING 360 CLOSURE SAMPLING LOCATION PLAN

PREPARED FOR

SENECA ARMY DEPOT
ROMULUS, NEW YORK

INTERNATIONAL TECHNOLOGY CORPORATION

DRAWING NUMBER 519204-A1

DRAWN BY EGW 4-21-95

CHECKED BY

APPROVED BY

132298