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Groundwater Seep Investigation Report
1,1,1-Trichloroethane Detection
(RCRA 3008(h) Order Section 7.f.ii)

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(RCRA 3008(h) Order Section 7.f.ii)
West Valley Demonstration Project
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1.0 Executive Summary

Since early 1990 1,1,1-trichloroethane (1,1,1-TCA) has been detected at concentrations up to 41 μg/L in water from a groundwater seep at sample point WNGSEEP, which is located outside the northeastern perimeter of the West Valley Demonstration Project (WVDP). A Resource Conservation and Recovery Act (RCRA) 3008(h) Administrative Order on Consent requires the U.S. Department of Energy (DOE) to investigate and determine the source and lateral extent of the 1,1,1-TCA associated with the seep.

Groundwater seepage occurs at various places along the contact between a permeable sand and gravel unit and the underlying impermeable, clay-rich, Lavery till. Groundwater flow in the sand and gravel unit is to the northeast, from the interior of the WVDP towards the seeps.

Groundwater sampling and analysis for volatile organic chemicals indicates that 1,1,1,-TCA is present at only one portion of one seep, sample point WNGSEEP. The concentration of 1,1,1-TCA at WNGSEEP reached a maximum of 41 μg/L on June 6, 1990, and has since dropped to near the quantitation limit of 5 μg/L. An upgradient source of the 1,1,1-TCA has not been determined at this time because 1,1,1-TCA has not been detected in monitoring wells immediately upgradient of WNGSEEP. However, a review of all WVDP well records indicates that 1,1,1,-TCA has been regularly detected below the quantitation limit of 5 μg/L in only one well (86-09), which is farther upgadient of WNGSEEP. On only one occasion (October 18, 1990) was 1,1,1-TCA detected below the quantitation limit of 5 μg/L in well 86-12, which is crossgradient to WNGSEEP, and its presence at well 86-12 has not been confirmed in subsequent sampling rounds. Thus, 1,1,1-TCA presumably is confined to WNGSEEP and well 86-09 at the WVDP.

The concentration of 1,1,1-TCA at WNGSEEP is, and has been, well below the federal drinking water quality standards promulgated under the Safe Drinking Water Act. However, the New York State groundwater protection standard of 5 μg/L has been exceeded at WNGSEEP but not at 86-09 or 86-12. The levels of exposure to human populations is considered negligible to nonexistent, as groundwater associated with the seep is not used as a drinking water source on- or off-site.

2.0 Introduction

2.1 Facility Background

The only commercial nuclear fuel reprocessing plant to have operated in the United States was located at the Western New York Nuclear Service Center (WNYNSC) near West Valley, New York, approximately 50 km (30 mi.) south of Buffalo, New York (Fig. 1). The WNYNSC, which is owned by the New York State Energy Research and Development Authority (NYSERDA), comprises 3,300 acres of mostly undeveloped farmland. The former reprocessing plant and its associated buildings occupy 156 acres of the WNYNSC.

Nuclear Fuel Services (NFS) leased and operated the WNYNSC from 1966 to 1972. The reprocessing plant was designed to recover uranium and plutonium from spent nuclear fuel assemblies using a nitric acid/solvent extraction process. NFS reprocessed approximately 640 metric tons of spent nuclear fuel during this time, generating approximately 600,000 gallons of high-level radioactive waste, which was stored in two underground storage tanks at the site. NFS closed the plant in 1972 for modifications to expand operating capacity. Unable to meet more stringent Nuclear Regulatory Commission (NRC) operating requirements, NFS withdrew from the reprocessing business in 1976 without reopening the plant. The lease agreement between NFS and NYSERDA required New York State to assume all responsibility for the site after the NFS lease had expired.

The United States Congress passed the West Valley Demonstration Project (WVDP) Act in 1980, Public Law 96-368, which directed the U.S. Department of Energy (DOE) and New York State to demonstrate a viable method for solidifying the high-level radioactive liquid waste at the site for future disposal at a designated federal repository. The WVDP Act also required that all materials and structures associated with the WVDP be decommissioned and decontaminated.

The United States Department of Energy assumed control of the 156 acres comprising the reprocessing plant facilities on February 25, 1982. This security-fenced portion of the WNYNSC is referred to as the WVDP. West Valley Nuclear Services Co., a subsidiary of Westinghouse Electric, was selected by the DOE to be the primary operations contractor for the WVDP.

2.2 Summary of Site Geology and Hydrology

The WVDP is subdivided into the south plateau and north plateau areas by Erdman Brook (Fig. 2). Glacial and post-glacial sedimentary units are exposed within the WVDP: the Lavery till in the south plateau and a surficial alluvial sand and gravel unit that overlies the Lavery till in the north plateau.

2.2.1 North Plateau Glacial/Post-Glacial Sediments

Surficial Sand and Gravel Layer

Lithology - Light to medium brown silty sand and gravel ranges from 1 to 10 meters (3-30 ft) in thickness at the north plateau of the WVDP (Fig. 3). The average textural composition of this unit is 55% gravel, 20% sand, and 25% silt and clay. (WVNS Safety Analysis Report 1992). These sediments were deposited by runoff from adjacent hillsides and meltwater from the north after the retreat of the last glacier in the area. Alluvial fans were developed near valley walls, and fluvial processes deposited sand and gravel out into the valleys onto the exposed Lavery till. The surficial sand and gravel unit in the North Plateau is wholly contained within the WNYNSC.

Hydrology - The alluvial sand and gravel has an average hydraulic conductivity that ranges from 6×10^{-5}cm/sec to 6×10^{-4}cm/sec (0.17 ft/day to 1.7 ft/day) [Bergeron et al. 1987]. Groundwater flows northeastward towards Frank's Creek and east-northeastward towards Erdman Brook (Fig. 4). This unit is recharged by precipitation and by infiltration of groundwater from an adjoining fractured bedrock aquifer along the valley walls.

Lavery Till

Lithology - Olive-green, predominantly calcareous clay or silty till, which ranges from 5-30 meters (16-100 ft) in thickness at the WVDP. The upper 2-4 meters of the till is oxidized and weathered to a grayish brown color and contains numerous intersecting horizontal and vertical fractures. LaFleur (1979) identified the following three subfacies in the Lavery:

1) A pebble and cobble till with a calcareous clayey-silt matrix, composed of clay (55%), silt (25%), and sand and gravel (20%). This subfacies makes up 70% of the Lavery.

2) A calcareous clayey-silt containing <5% pebbles or cobbles.

3) Discontinuous, lenticular, stratified sand and gravel lenses located within the south plateau of the WVDP.

Hydrology - The hydraulic conductivity of the weathered Lavery till ranges from 7 x 10^{-7}cm/sec to 4 x 10^{-5}cm/sec (2 x 10^{-3} ft/day to 1.72 x 10^{-2} ft/day) (Prudic 1986). The hydraulic conductivity of the unweathered Lavery till ranges from about 2 x 10^{-8}cm/sec to 2 x 10^{-7}cm/sec (5.6 x 10^{-5} ft/day to 5.6 x 10^{-4} ft/day) (WVNS Safety Analysis Report 1992). Groundwater flow in the Lavery till is predominantly downward.

2.2.2 Bedrock

Glacial till at the WVDP is underlain by shales and sandstones of the Upper Devonian Canadaway Group. Groundwater flow in these units is controlled by a regional joint and fracture network. Prudic (1986) estimated a hydraulic conductivity of 10^{-5} cm/sec (2 .8 x 10^{-2} ft/day) for weathered/fractured bedrock and 10^{-7} cm/sec (2.8 x 10^{-4} ft/day) for unfractured bedrock. Bedrock flow is a recharge source to the surficial sand and gravel unit where the sand and gravel layer is in contact with bedrock.

A more detailed discussion of site geology and hydrology is contained in the RFI Work Plan (WVDP-113, Rev.0 Draft A) and other site documents. (See section 7.0, References.)

2.3 Detection of Volatile Organic Chemicals in Groundwater Seep (WNGSEEP)

The groundwater seep in question (WNGSEEP) is located on the north plateau, outside the security fence at the northeastern perimeter of the WVDP on the west bank of Frank's Creek (Fig. 2). Groundwater emerges in the area of WNGSEEP as it flows along the interface between the surficial alluvial sand and gravel unit and the underlying Lavery till. The groundwater emerging from WNGSEEP flows approximately 160 feet down slope into Frank's Creek.

During characterization work in 1989 on the construction and demolition debris landfill (CDDL), a volatile organic compound (1,1-dichloroethane) was detected in well 86-12, which is downgradient of the CDDL. Concentrations of 6.7 μg/L of 1,1-dichloroethane (DCA) were detected in monitoring well 86-12 on October 5, 1989. Well 86-12 is located approximately 225 meters northwest of WNGSEEP and is crossgradient to it (Fig. 4).

Although the WVDP has routinely collected groundwater samples for six years from sample point WNGSEEP, analysis did not include volatile organic compounds (VOCs). Sampling for VOCs at WNGSEEP began on October 23, 1989 as part of a study to determine the origin of the 1,1-DCA that had been detected in well 86-12. 1,1,1-trichloroethane (TCA), a chlorinated solvent with a density of 1.35 g/cc, was first detected below quantitation levels at WNGSEEP on February 21, 1990. (See Fig. 5 and Table 1). Measurable quantities of 1,1,1-TCA were first detected at WNGSEEP on April 24, 1990. Previously only tritium had been detected above background at this location. The concentration of 1,1,1-TCA reached a maximum of 41 μg/L on June 6, 1990 and has decreased since then to levels of approximately 5 to 7 μg/L (5 to 7 ppb) during the last two sampling rounds on October 9, 1991 and November 21, 1991.

2.4 Regulatory Background

The WVDP has been considered an "interim status" facility under Section 3005(e) of the Resource Conservation Recovery Act (RCRA) since June 4, 1990, when it submitted a RCRA Part A permit application for on-site treatment and storage of radioactive mixed waste (RMW).

Section 3008(h) of RCRA authorizes the administrator of the EPA to issue corrective action orders to interim status facilities to protect human health or the environment if a release of hazardous waste and/or hazardous constituents into the environment has been determined to have occurred.

This report is intended to fulfill the requirements of section VI.(f) of the RCRA 3008(h) Order on Consent, Interim Measures Related to Detection of 1,1,1-trichloroethane in Groundwater Seep.

2.5 3008(h) Scope of Work for the Groundwater Seep

Section VI.(f) of the 3008(h) order specifically requires that DOE complete the following tasks in its investigation of the seep:

1) Investigate the problem by:

   a) Continuing nonroutine groundwater monitoring from the seep and collecting additional samples in the immediate area of WNGSEEP in order to determine the lateral extent of 1,1,1-TCA in the area.

      The Environmental Monitoring Program Plan (EMPP) (WVNS 1992a) specifies routine sampling activities which are conducted by the WVDP. Routine sampling activities include both on-site and off-site monitoring of groundwater, surface water, air and liquid effluent, soil, sediment, and local biota. Nonroutine sampling activities are those done above and beyond those specified in the EMPP.

   b) Continuing to develop contour maps to help identify potential sources of 1,1,1-TCA.

2) Submit a "full investigation report" to EPA and the New York State Department of Environmental Conservation (NYSDEC) no later than ninety days following the effective date of the order. The report must include:

   - procedures employed to ensure data quality
   - all relevant analytical data
   - pertinent hydrogeologic information
   - maps depicting sample locations and topography of the area
   - other information relative to assessing health risks associated with the release

3.0 Seep Investigation Procedures

3.1 Potential Sources of Contamination

RCRA defines a solid waste management unit (SWMU) as "any discernible unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous wastes." SWMUs at the WVDP that are contiguous or so closely spaced as to make separate monitoring impossible have been grouped together into super solid waste management units (SSWMUs). A list of the solid waste management units (SWMUs) and super solid waste management units (SSWMUs) at the WVDP is contained in Tables 3-1 and 3-2 of the RFI Work Plan.

Based on NFS post-operational history and hydraulic relationship to WNGSEEP, three SSWMUs within the north plateau have been identified as possible sources of the 1,1,1-TCA detected at WNGSEEP:

- SSWMU #1, The low-level waste water treatment facility (LLWTF)
- SSWMU #5, The maintenance shop leach field (MSLF)
- SSWMU #8, The construction and demolition debris landfill (CDDL)

Recent water table mapping of the surficial alluvial aquifer (Fig.4) indicates that each of these SSWMUs is close to and either hydraulically crossgradient or upgradient from WNGSEEP. However, it is possible that the 1,1,1-TCA did not originate from a SWMU but from random plant operations or miscellaneous disposal.

o The low-level waste water treatment facility (LLWTF)

The LLWTF is composed of the LLWTF building, neutralization pits, and five surface impoundments (four active, one closed). The LLWTF building was built in 1971 to treat low-level radioactive waste water and nonhazardous waste water generated in the reprocessing plant. Treated waste water is discharged to Erdman Brook at a SPDES-regulated outfall.

o The maintenance shop leach field (MSLF)

The MSLF consists of a septic tank, distribution box, and a four-lateral leach field that had been used by NFS to process sanitary waste from the maintenance shop. NFS did not keep records of discharges to the MSLF, and so there is no record to confirm whether or not radiological or hazardous waste was discharged to the system.

Purchase orders and interviews with employees indicate that the maintenance shop did use degreasers such as trichloroethylene (TCE) in its operations.

- The construction and demolition debris landfill (CDDL)

  The CDDL was used from 1963 to 1985 for disposal of nonradioactive solid waste such as office waste, machine shop waste, and construction debris. The CDDL was closed in 1986 under an approved NYSDEC closure plan and was covered with compacted Lavery till.

  (For more detailed information concerning these SSWMUs, refer to the RFI Work Plan, Appendix B, Sections 1.7.1, 1.7.5, and 1.7.8. A RCRA facility investigation is planned for each of these SSWMUs, including a detailed records review to fully understand each SSWMU's operational history, including the types and quantity of wastes managed and any known releases of radioactive and/or hazardous materials, if available.)

3.2 Sampling and Monitoring Activities

The seep investigation required in the RCRA 3008(h) Administrative Order on Consent included the following:

1) Groundwater sampling data from wells directly upgradient of WNGSEEP were reviewed in an attempt to backtrack the 1,1,1-TCA at WNGSEEP to its upgradient source. Historical seep sampling data and SWMU waste management practices also were reviewed to determine the source of 1,1,1-TCA.

2) An expanded sampling network was installed along the groundwater seep both north and south of WNGSEEP to determine the lateral extent of 1,1,1-TCA in the immediate area.

3) The geology and hydrology of the north plateau were reviewed and data gathered to produce isopach, water table, and structure contour maps for the surficial sand and gravel layer and the top of the Lavery till. These maps were used to infer groundwater flow directions in the north plateau.

3.2.1 Groundwater Monitoring Wells Data Review

In 1990 ninety-six additional monitoring wells were installed at the WVDP to monitor potential releases of hazardous constituents from SWMUs at the site. Fifty-eight wells were installed in the north plateau. All wells are sampled every six weeks and are analyzed for a list of indicator parameters including volatile organics listed in 40 CFR Part 264, Appendix IX. A detailed description of the groundwater monitoring program, including monitoring well installation, development, sampling, and analytical protocols at the WVDP, is found in Appendix B of the RFI Work Plan.

Groundwater monitoring data from wells upgradient and downgradient of the low-level waste treatment facility (SSWMU #1), the maintenance shop leach field (SSWMU #5), and the construction and demolition debris landfill (SSWMU #8), were reviewed to determine if 1,1,1-TCA was detected. These wells are screened in the lower portion of the surficial sand and gravel layer and the upper foot of the Lavery till. The screened interval straddles the stratigraphic interval of the seeps in the north plateau of the WVDP. Well logs and construction diagrams for these wells are presented in Appendix B.

Groundwater analytical data generated during hydrogeologic investigations at the WVDP from 1991 to the present are stored on-site in the Environmental Monitoring Laboratory's Laboratory Information Management System (LIMS), and groundwater analytical data from 1986 to 1990 are stored in a d-base file.

Since the WVDP has analyzed groundwater for VOCs since October 1989, data from 1989 to the present from the seep and monitoring wells associated with SSWMUs #1, #5, and #8 were reviewed to determine whether volatile organics were detected during any sampling rounds.

The data bases were also searched for all sampling rounds at the WVDP in which 1,1,1-TCA concentrations exceeded 5 μg/L.

The RFI Work Plan provided information regarding SWMUs at the WVDP. Purchase orders from the early 1980s were reviewed and employees who worked at the WVDP since the late 1970s were interviewed to gain information regarding the use of 1,1,1-TCA on-site.

3.2.2 Seep Sampling

Groundwater seeps are present at several locations in the north plateau at the contact between the surficial sand and gravel layer and the Lavery till. The WVDP has conducted a number of investigations at these seeps as detailed below.

In 1989 a 36-inch long piece of 2-inch diameter perforated PVC pipe was installed in a horizontal attitude at the surficial sand and gravel layer/Lavery till contact at sample point WNGSEEP to collect groundwater seeping from the contact.

Although groundwater seeps are present at several locations along the surficial sand and gravel layer/till interface in the northeastern corner of the north plateau, all seeps are not capable of being sampled. However, two other seeps, sample points WNDSEEP-1 and WNDSEEP-2, located 150 feet and 250 feet north of WNGSEEP respectively, were each sampled once on June 28, 1990. (See Fig. 2.)

In order to determine 1,1,1-TCA loadings to Frank's Creek, the creek water was sampled on July 5, 1990 both up- and downstream of the point where WNGSEEP water enters the creek. A sample of WNGSEEP water was also collected from the bank of Frank's Creek, approximately 3 feet above the creek.

Three water samples were collected on July 9, 1990 from WNGSEEP, from a point 6 inches below WNGSEEP, and from a point approximately 10 feet downslope of WNGSEEP, to determine the effect that overland flow from WNGSEEP down to Frank's Creek has on 1,1,1-TCA concentrations in WNGSEEP water.

Five additional 2-inch diameter perforated PVC sampling tubes (T1-T5), similar to the PVC pipe installed at WNGSEEP in 1989, were installed in a horizontal attitude north and south of WNGSEEP on October 24, 1990 to determine the lateral extent of 1,1,1-TCA at WNGSEEP. Tubes T1, T2, and T3 are located approximately 3 feet, 2.5 feet, and 10 inches south of WNGSEEP, respectively. Tubes T4 and T5 are 6 feet and 14 feet north of WNGSEEP. This expanded sampling network was sampled on October 24, 1990.

3.2.3 Characterization of Groundwater Flow

A significant amount of lithologic and hydrogeologic data has been collected over the last ten years. WVDP staff have used this data to produce current and accurate isopach, water table, and structure contour maps to characterize groundwater flow conditions in the north plateau. (See Figs. 3 and 4.) Groundwater in the surficial sand and gravel unit flows northeastward across the North Plateau from the south-western margin of the sand and gravel unit towards Frank's Creek (Fig. 4). Groundwater flow in the sand and gravel is predominantly horizontal as leakage into the underlying Lavery Till is considered to be negligible (Yager 1987). The hydraulic gradient of the sand and gravel across the North Plateau is 0.027.

4.0 Seep Investigation Sampling Protocols

Groundwater sampling conducted during the seep investigation included obtaining groundwater samples directly from seeps in the north plateau and from groundwater monitoring wells upgradient of WNGSEEP associated with SSWMUs #1, #5, and #8. Sampling specific to WNGSEEP was performed in accordance with existing site procedures. Monitoring well sampling procedures and analytical methods implemented during field investigations by the WVDP are described in Appendix B of the RFI Work Plan. Chain of custody forms were filled out for all samples during sampling and up through the laboratory's receipt of the samples. Relevant chain of custody forms are included with the analytical results in Appendix A. Sampling and analysis procedures for the various activities associated with this seep investigation are summarized below.

4.1 Groundwater Monitoring-Well Sampling Methods

Refer to Appendix B of the RFI Work Plan for information detailing monitoring well sampling protocols, chain of custody, and specific analytical methods implemented at the WVDP.

4.2 Seep Sampling Methods

Groundwater samples from WNGSEEP were collected in 40 mL glass vials held at a low angle at the end of the sampling pipe so the groundwater would run gently down the side of the vial, minimizing the loss of 1,1,1-TCA through volatilization. Sample vials were completely filled to ensure that no head space remained, thus reducing potential loss of 1,1,1-TCA through volatilization. Once filled, the bottles were packed in an ice chest and transported to an off-site contract laboratory for volatile organic analysis using Method 8240 in SW-846, Test Methods for Evaluating Solid Waste.

4.3 Quality Assurance/Quality Control

Quality assurance/quality control (QA/QC) protocols, which ensure that valid, reproducible, and defensible data are collected and reported, are fundamental elements of any environmental data collection activity. Appendix B of the RFI Work Plan documents specific field and laboratory elements of the QA/QC program at the WVDP for the RCRA groundwater program, including well installation and sampling procedures, analytical methods, and quality checks. The QA/QC Plan is based on the NYSDEC RCRA Quality

Assurance Project Plan Guidance (March 1991), Quality Assurance Program Requirements for Nuclear Facilities (ASME NQA-1-1989), and the Environmental Quality Assurance Plan (WVDP-099).

All sampling on-site is conducted to correspond with standard site procedures developed in accordance with DOE requirements and site QA/QC protocols. Sample analysis is performed either by the WVDP Environmental Monitoring Laboratory or by off-site contract laboratories in accordance with DOE and WVDP QA/QC Protocols.

5.0 Summary of Analytical Results

5.1 Groundwater Monitoring Well Survey Results

Historical data from groundwater monitoring wells upgradient of WNGSEEP were reviewed to determine the source of 1,1,1-TCA at WNGSEEP. Wells 80-05 and 80-06 were installed by the U.S. Geological Survey in the early 1980s as part of several hydrogeological investigations (Prudic 1986; Bergeron and Bugliosi 1988). The 86-series wells were installed by WVNS in 1986 to provide expanded groundwater monitoring. The remaining wells were installed in 1990 to monitor potential releases of hazardous constituents from SWMUs #1, #5, and #8. 1,1,1-TCA was not detected in any of the wells reviewed for this investigation (Table 3).

A database search was conducted for all detections of 1,1,1-TCA in groundwater at the WVDP above 5 μg/L. The only detections reported were from WNGSEEP. 1,1,1-TCA has been detected on several occasions below method quantitation limits (5 μg/L) in well 86-09 and on one occasion (October 18, 1990) in well 86-12. Well 86-09 is located upgradient of SWMUs #1, #5, and #8 and is approximately 150 meters east of the high-level radioactive waste storage tanks (SSWMU #4). (See Fig. 4).

5.2 Seep Lateral Extent Survey Results

Groundwater seeps are present at several locations in the northeast corner of the north plateau at the contact between the surficial sand and gravel layer and the Lavery till. After 1,1,1-TCA was detected at WNGSEEP, the WVDP attempted to determine the lateral extent of 1,1,1-TCA at the sand and gravel layer/Lavery till contact in the north plateau.

WNDSEEP-1 and WNDSEEP-2, located 150 and 250 feet north of WNGSEEP, were sampled for VOCs on June 28, 1990. VOCs were not detected in this sampling round (Table 2).

Three water samples were collected on July 5, 1990 to determine loadings of 1,1,1-TCA to Frank's Creek. 1,1,1-TCA was not detected in Frank's Creek either upstream or downstream of where WNGSEEP enters the creek, nor was it detected in WNGSEEP water sampled 3 feet up the bank from Frank's Creek. Three samples were collected on July 9, 1990 to assess the fate of 1,1,1-TCA in WNGSEEP water as it flows down to Frank's Creek. The concentration of 1,1,1-TCA decreased from 28 ppb at WNGSEEP to nondetectable 10 feet downslope of WNGSEEP. (See Table 2.)

On October 24, 1990 five additional horizontal PVC sampling tubes, designated T1-T5, were installed north and south of the original WNGSEEP sampling tube to determine the lateral extent of VOCs in the immediate vicinity of WNGSEEP. Tubes T1, T2, and T3 were located 3 feet, 2.5 feet, and 10 inches south of WNGSEEP, and tubes T4 and T5 were located 6 feet and 14 feet north of WNGSEEP, respectively. Tubes T1-T5 were sampled on October 24, 1990. Tube T1 and T3 had 1,1,1-TCA concentrations of 29 μg/L and 37 μg/L, respectively. Tube T2 was not sampled due to a lack of water. Tubes T4 and T5 had 1,1,1-TCA concentrations of 13 μg/L and 6 μg/L, respectively (Table 2).

6.0 Discussion

Groundwater at WNGSEEP has been routinely monitored for volatile organic compounds since October 1989. Quantifiable levels of 1,1,1-TCA were first detected at WNGSEEP on April 24, 1990. Since that time the concentration of 1,1,1-TCA reached a maximum of 41 μg/L (41 ppb) on June 6, 1990 and has since dropped off to concentrations near the quantitation limit of 5 μg/L (5 ppb) (Fig. 5).

1,1,1-TCA is commonly used as a degreaser of metal and plastic. A review of available records indicates that chlorothene VG, a solvent containing a minimum of 93.5% 1,1,1-TCA, was used by the WVDP maintenance department as recently as 1983. Conversations with WVDP staff indicate that the instrument shop, which at one time was located near the maintenance shop, used 1,1,1-TCA to clean pens and recording instruments during the late 1970s. The maintenance shop also used degreasing solvents that had 1,1,1-TCA as a major component during the late 1970s and early 1980s. It is not certain if 1,1,1-TCA was used at the site before the late 1970s. Chlorinated solvents were not used in any of the nuclear fuel reprocessing operations, but the NFS maintenance department used trichloroethylene (TCE) as a degreaser from 1966 to 1972. The NFS maintenance department may also have used 1,1,1-TCA as a degreaser during this time.

At this time a specific source for the 1,1,1-TCA at WNGSEEP has not been identified. 1,1,1-TCA has not been detected in any of the RCRA monitoring wells immediately upgradient of WNGSEEP that monitor SSWMUs #1, #5, and #8. 1,1,1-TCA, however, has been detected on several occasions below method quantitation limits (5 μg/L) in well 86-09 and on only one occasion (October 18, 1990) in well 86-12. Since this latter sampling, 1,1,1-TCA has not been detected in well 86-12.

Well 86-09 is located upgradient of SSWMUs #1, #5, and #8 and is approximately 150 meters east of SSWMU #4, the high-level radioactive waste storage tanks. Well 86-12 is located approximately 225 meters northwest of WNGSEEP and is hydraulically crossgradient to WNGSEEP. WNGSEEP is the only location at which 1,1,1-TCA has been detected above 5 μg/L. 1,1,1-TCA has not been detected in wells immediately downgradient of well 86-09 or upgradient of 86-12. 1,1,1-TCA in groundwater, therefore, appears to be isolated to two separate areas of the WVDP site, well 86-09 and WNGSEEP, and does not appear to be a widespread problem.

1,1-dichloroethane (1,1-DCA) is the only other VOC to have been detected in monitoring wells on-site. Four wells near SSWMU #8 were sampled on October 5, 1989 as part of an investigation of the CDDL. Only one VOC, 1,1-DCA at a concentration of 6.7 μg/L, was detected in well 86-12 at that time. To determine the source of 1,1,-DCA at well 86-12, sampling for VOCs at WNGSEEP began on October 28, 1989. A review of the database indicated that 1,1-DCA was detected at one other location at the site, well 86-09 near the high-level waste tank farm. 1,1-DCA is known to be present in the state-licensed disposal area (SDA) trench leachate in the south plateau. However, it has never been detected in groundwater monitoring activities associated with the SDA. There does not appear to be any connection between the 1,1-DCA detected at these locations and the 1,1,1-TCA detected at WNGSEEP.

1,1,1-TCA appears to be confined to the immediate vicinity of WNGSEEP, as it was not detected in water sampled from seeps approximately 150 and 250 feet north of WNGSEEP on June 28, 1990. The expanded sampling network (see section 3.2.1) indicates that 1,1,1-TCA does extend a minimum of 3 feet south and 14 feet north of WNGSEEP.

6.1 Comparison of WNGSEEP Results to EPA Action Levels and New York State Groundwater Protection Standards

Appendix A, "Examples of Concentrations Meeting Criteria for Action Levels," of proposed 40 CFR Part 264 Subpart S, specifies action level concentrations for various hazardous constituents in air, water, and soil. Action levels represent the "concentration to which the human population could be exposed on a daily basis that is likely to be without appreciable risk of deleterious effects during a lifetime." According to proposed 40 CFR Part 264.520(a), the EPA may use action level criteria to "require a facility to conduct a Corrective Measures Study (CMS) whenever a hazardous constituent exceeds its respective action level or MCL." Appendix A specifies an action level of 3 mg/L (3,000 ppb) for 1,1,1-TCA in water. A maximum contaminant level (MCL) of 200 μg/L was promulgated under the Safe Drinking Water Act for 1,1,1-TCA. Although 1,1,1-TCA has been consistently detected in two areas of the WVDP -- 86-09 and WNGSEEP -- the concentrations of 1,1,1-TCA have been well below the federal levels.

The levels of 1,1,1-TCA observed at WNGSEEP during 1990-1991, however, did exceed the New York State Groundwater Protection Standard of 5 μg/L for 1,1,1-TCA as specified in 10 NYCRR Part 5. The levels of 1,1,1-TCA in well 86-09 have not exceeded New York State Groundwater Protection Standards.

6.2 Exposure Assessment/Exposure Pathways

1,1,1-TCA is classified as a human systemic toxicant, but not a human carcinogen, by the EPA. Potential exposure pathways to 1,1,1-TCA from WNGSEEP include the consumption of contaminated groundwater and the consumption of contaminated surface water.

The level of exposure to human populations from each of these exposure pathways is considered negligible to nonexistent for the following reasons:

1) Groundwater from the surficial sand and gravel aquifer is not a drinking water source either on-site or off-site. This aquifier is confined to the north plateau of the WVDP, where it is truncated by Quarry Creek to the north, Frank's Creek to the east, and Erdman Brook to the south. Quarry Creek, Frank's Creek, and Erdman Brook flow in deeply incised valleys developed in the Lavery Till. Relief between these streams and the base of the surficial sand and gravel which overlies the Lavery Till, ranges from 30 to 90 feet (Fig. 2). There is approximately 60 feet of relief between WNGSEEP and Frank's Creek. Groundwater emanating from WNGSEEP flows overland approximately 160 feet down the west wall of Frank's Creek valley into Frank's Creek. The 1,1,1-TCA in groundwater at WNGSEEP, therefore, cannot migrate farther downgradient in the surficial sand and gravel unit and threaten potential off-site domestic water supplies.

2) Frank's Creek, which is located within the WNYNSC, is not used as a source of drinking water either on or off the WNYNSC site. Although the seep flows into Frank's Creek, the July 5, 1990 and July 9, 1990 samplings suggest that the low concentration of 1,1,1-TCA in WNGSEEP is either diluted upon entering Frank's Creek or is lost by volatilization as it flows down the bank to Frank's Creek. 1,1,1-TCA has not been detected either immediately upstream or downstream from the point where the seep enters Frank's Creek. Also, 1,1,1-TCA was not detected in water samples collected 10 feet downslope of WNGSEEP or along the bank 3 feet above Frank's Creek, suggesting that the 1,1,1-TCA may volatilize from WNGSEEP water as it flows towards Frank's Creek.

7.0 Conclusions

A specific source for the 1,1,1-TCA at WNGSEEP can not be ascertained from our knowledge to date. A review of monitoring data from wells upgradient of WNGSEEP, which are screened across the sand and gravel layer/till interface, showed that only well 86-09, located east of the high-level radioactive waste storage tanks, and well 86-12, near the CDDL, contained 1,1,1-TCA at concentrations below method quantitation levels. As 1,1,1,-TCA was detected only once during sampling at well 86-12, it appears that 1,1,1-TCA is confined to two separate areas of the WVDP, well 86-09 and WNGSEEP. None of the wells downgradient of SSWMUs #1, #5, and #8 contained 1,1,1-TCA.

The maximum concentration of 1,1,1-TCA detected at WNGSEEP was 41 μg/L (41 ppb) on June 6, 1990. Since then the concentration has dropped to levels near the quantitation limit of 5 μg/L (Fig. 5). The maximum concentration of 1,1,1-TCA detected at WNGSEEP was well below its respective RCRA 40 CFR Part 264 Subpart S action level of 3,000 μg/L and the Clean Water Act drinking water maximum contaminant level of 200 μg/L. Concentrations of 1,1,1-TCA at WNGSEEP did, however, exceed New York State Groundwater Protection Standards for 1,1,1-TCA during 1990-1991. Since the proposed RCRA Subpart S regulations indicate that the EPA will base corrective action decisions on Subpart S action levels and maximum contaminant levels (July 29, 1990 Federal Register, Vol. 55, No. 145, p. 30814), the WVDP feels corrective actions are not warranted for the following reasons:

1) The concentration of 1,1,1-TCA is presently near the method quantitation detection level and has not exceeded or even approached its action level or maximum contaminant level in the past.

2) The health risks to nearby human populations from exposure to this groundwater is considered negligible to nonexistent. However, the WVDP intends to continue to investigate the source of 1,1,1-TCA at WNGSEEP in concert with the RCRA-facility investigations planned for SSWMUs #1, #5 and #8, and to monitor the seep and upgradient groundwater monitoring wells at the present six week sampling interval. If 1,1,1-TCA concentrations at WNGSEEP exceed the maximum contaminant level, the WVDP, in consultation with the USEPA and/or NYSDEC, will consider appropriate actions in the context of the corrective action program at the site.

8.0 References

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TABLE 1

Concentrations of 1,1,1-trichloroethane at WNGSEEP

Sampling Date	Concentration of 1,1,1-TCA (ppb)
23-Oct-89	<3.8
21-Feb-90	<5.0
24-Apr-90	29
06-Jun-90	41
14-Jun-90	31
28-Jun-90	27
05-Jul-90	26
09-Jul-90	28,23
24-Sep-90	20
24-Oct-90	28
08-Nov-90	32
15-Jan-91	13.5
25-Feb-91	8
15-Apr-91	6,7
15-May-91	5.5,5
10-Jul-91	6,6
21-Aug-91	6,5
09-Oct-91	<5
21-Nov-91	6,7

Two concentration values for a sampling date represent analytical results for duplicate samples.

TABLE 2

1,1,1-TCA Concentrations at WNDSEEP-1, WNDSEEP-2, and the Expanded Sampling Points Associated with WNGSEEP

Sample ID	Sampling Date	Concentration 1,1,1-TCA (ppb)
WNDSEEP-1 (90-02564)	28-Jun-90	ND*
WNDSEEP-2 (90-02565)	28-Jun-90	ND
90-02630.1	05-Jul-90	ND
90-02633	05-Jul-90	ND
90-02634	05-Jul-90	ND
90-02663.2	09-Jul-90	28
90-02664	09-Jul-90	24
90-02665	09-Jul-90	ND
T1	17-Oct-90	29
T2	17-Oct-90	No Sample
T3	17-Oct-90	37
T4	17-Oct-90	13
T5	17-Oct-90	6

- WNDSEEP 1 & 2 represents seep sampling points 150 and 250 feet north of WNGSEEP.

- 90-02630.1 and 90-02633 are water samples from Frank's Creek immediately upstream and downstream, respectively, from the point where WNGSEEP water enters Frank's Creek. Sample 90-02634 is a sample of WNGSEEP water collected 3 feet above Frank's Creek along the bank of the creek.

- Samples 90-02663.2, 90-02664, and 90-02665 were collected from WNGSEEP, 6 inches below WNGSEEP, and 10 feet below WNGSEEP respectively, on July 9, 1990.

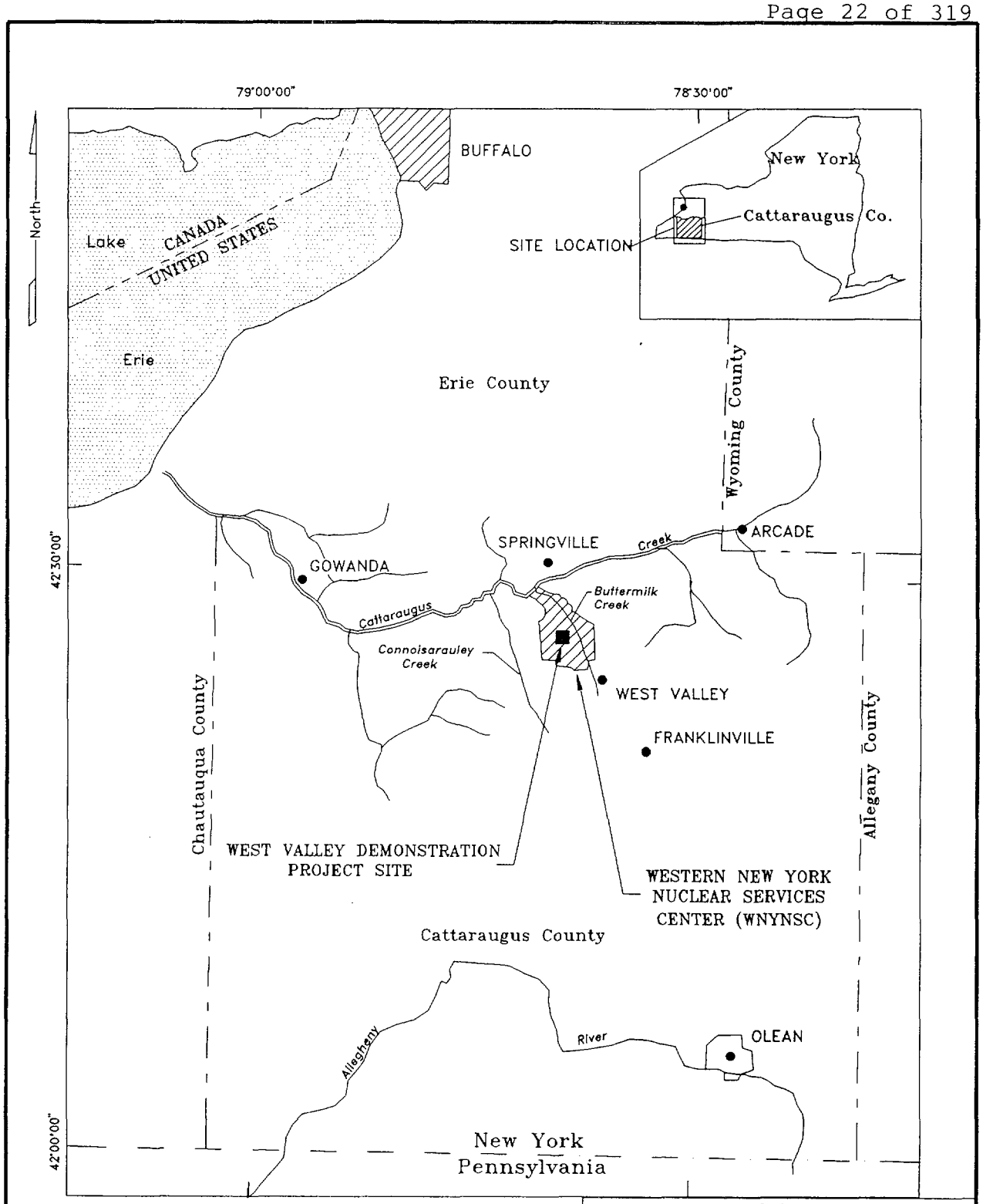
- Samples T1-T5 represent the expanded sampling network installed at WNGSEEP on October 24, 1990.

* ND- Not detected.

TABLE 3
1,1,1-TCA Concentrations in Monitoring Wells Sampled at SSWMUs #1, #5, and #8

Well #	Sampling Date								Result
103	1/16/91	2/25/91	4/15/91	5/15/91	7/8/91	8/19/91	10/21/91	12/11/91	ND*
104	1/16/91	2/18/91	4/15/91	5/15/91	7/8/91	8/21/91	10/7/91	12/11/91	ND
105	1/16/91	2/18/91	4/15/91	5/15/91	7/8/91	8/19/91	10/7/91	11/18/91	ND
106	1/23/91	2/28/91	4/18/91	5/16/91	7/10/91	8/20/91	10/9/91	11/20/91	ND
116	1/23/91	2/28/91	4/18/91	5/16/91	7/10/91	8/20/91	10/9/91	11/20/91	ND
501			4/24/91	6/5/91	8/5/91	9/16/91	10/21/91	12/11/91	ND
502			4/25/91	6/5/91	8/5/91	9/16/91	10/21/91	12/11/91	ND
801		2/21/91	4/15/91	5/15/91	7/10/91	8/19/91	10/7/91	11/18/91	ND
802	1/14/91	2/20/91	4/15/91	5/15/91	7/10/91	8/19/91	10/9/91	11/18/91	ND
803	1/14/91	2/20/91	4/16/91	5/15/91	7/10/91	8/19/91	10/9/91	11/18/91	ND
804		3/13/91	4/16/91	5/15/91	7/10/91	8/19/91	10/7/91	11/18/91	ND
B-86-3	1/14/91	2/18/91	4/15/91	5/15/91	7/8/91	8/21/91	10/7/91	11/18/91	ND
B-86-4	1/14/91	2/18/91	4/15/91	5/15/91	7/8/91	9/16/91	10/21/91	12/11/91	ND
B-86-12	1/14/91	2/20/91	4/17/91	5/15/91	7/9/91	8/19/91	10/7/91	11/21/91	ND
80-05	2/21/90	4/24/90	6/5/90	6/15/90	9/10/90	9/26/90	10/24/90	11/12/90	ND
80-06	2/20/90	4/23/90	6/5/90	6/14/90	9/10/90	9/27/90	10/24/90	11/7/90	ND

* ND - not detected



0 2.5 5 10
SCALE (miles)

FIGURE 1
Location of the Western New York Nuclear Services Center (WNYNSC) and the West Valley Demonstration Project in Western New York

FOR: WEST VALLEY DEMONSTRATION PROJECT
BY: Dames & Moore WEST VALLEY, NEW YORK

DATE: 2/10/92 DRAWING: 92-00010

DRAWN BY: R. M. Oberman CHECKED BY: Z. Z. Zodins FILENAME: J:\dwg\seep\fig1 SHEET 1 of 1

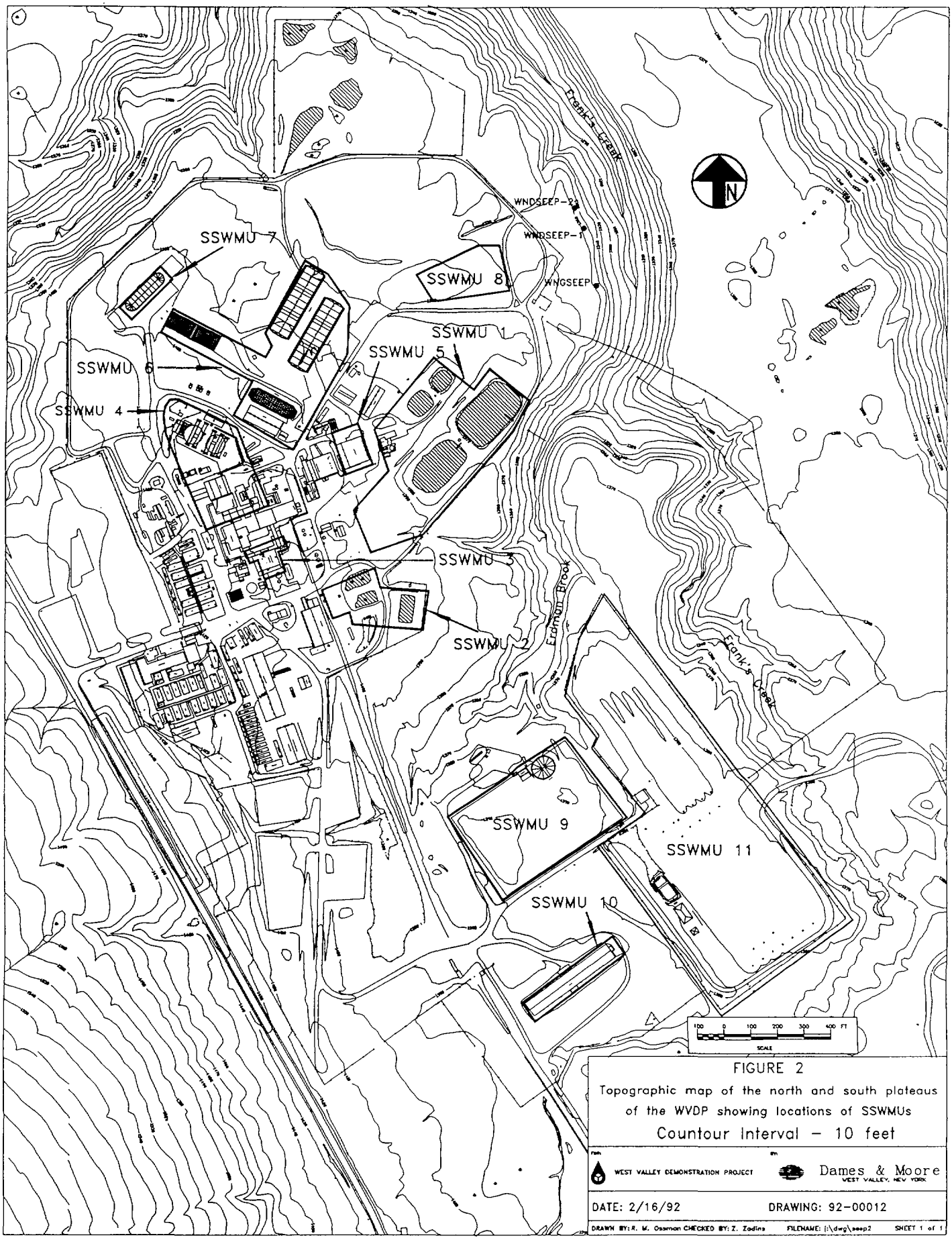


FIGURE 2
Topographic map of the north and south plateaus of the WVDP showing locations of SSWMUs
Countour Interval – 10 feet

for: WEST VALLEY DEMONSTRATION PROJECT
by: Dames & Moore, WEST VALLEY, NEW YORK

DATE: 2/16/92 DRAWING: 92-00012

DRAWN BY: R. M. Ossman CHECKED BY: Z. Zodins FILENAME: I:\dwg\seep2 SHEET 1 of 1

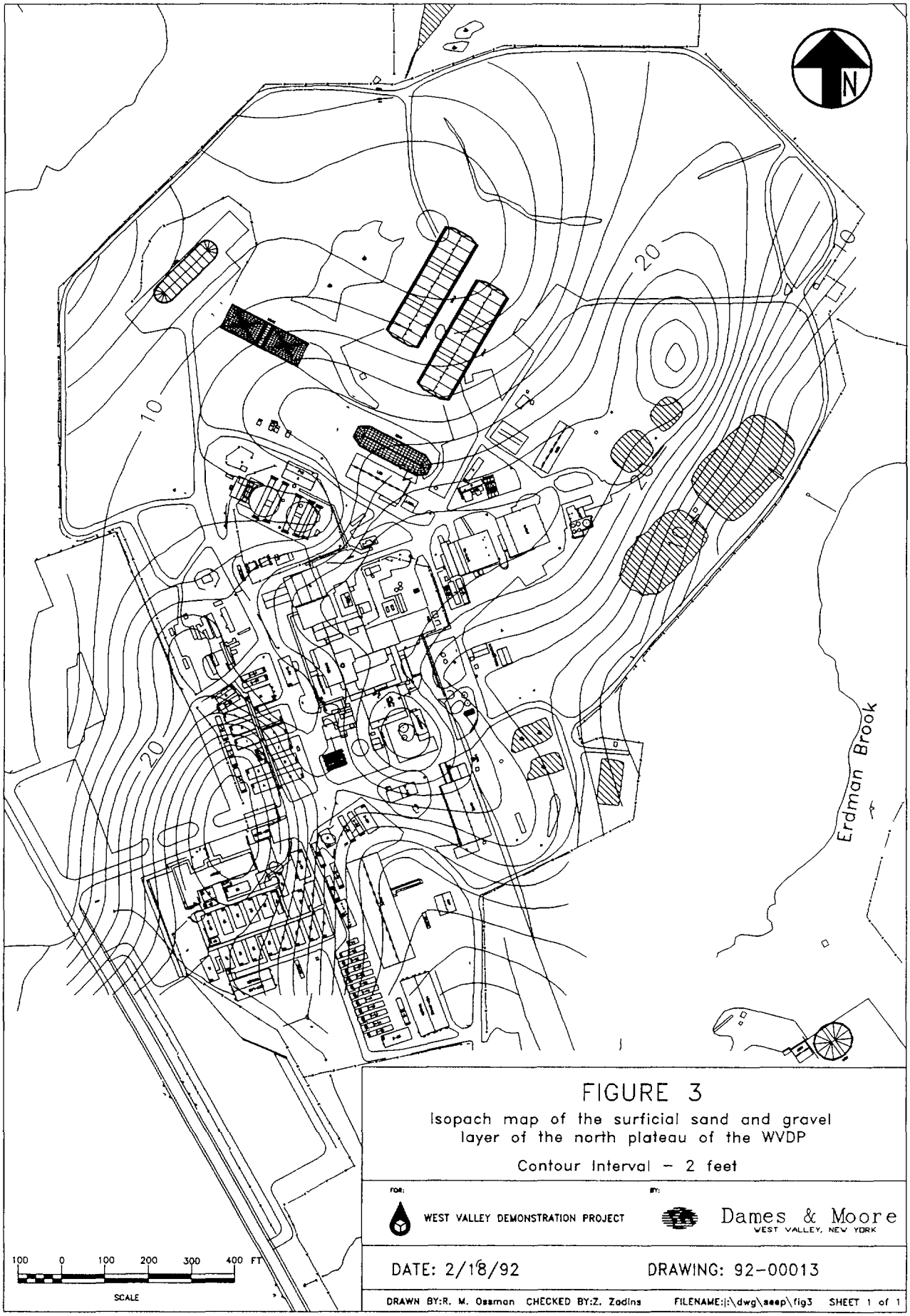


FIGURE 3

Isopach map of the surficial sand and gravel layer of the north plateau of the WVDP

Contour Interval - 2 feet

FOR: WEST VALLEY DEMONSTRATION PROJECT

BY: Dames & Moore WEST VALLEY, NEW YORK

DATE: 2/18/92 DRAWING: 92-00013

DRAWN BY:R. M. Ossman CHECKED BY:Z. Zadins FILENAME:j:\dwg\seep\fig3 SHEET 1 of 1

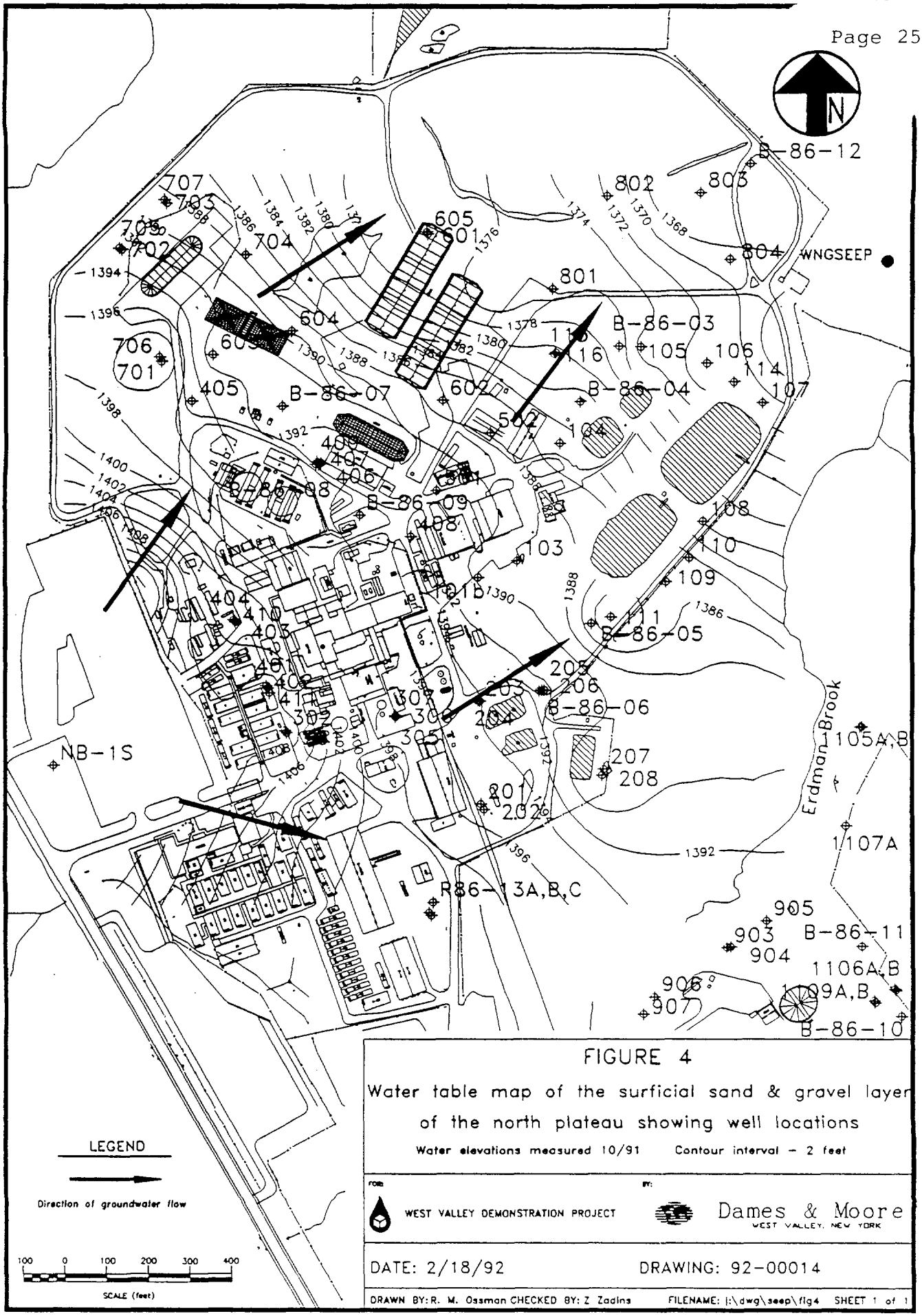


FIGURE 4

Water table map of the surficial sand & gravel layer of the north plateau showing well locations

Water elevations measured 10/91 Contour interval - 2 feet

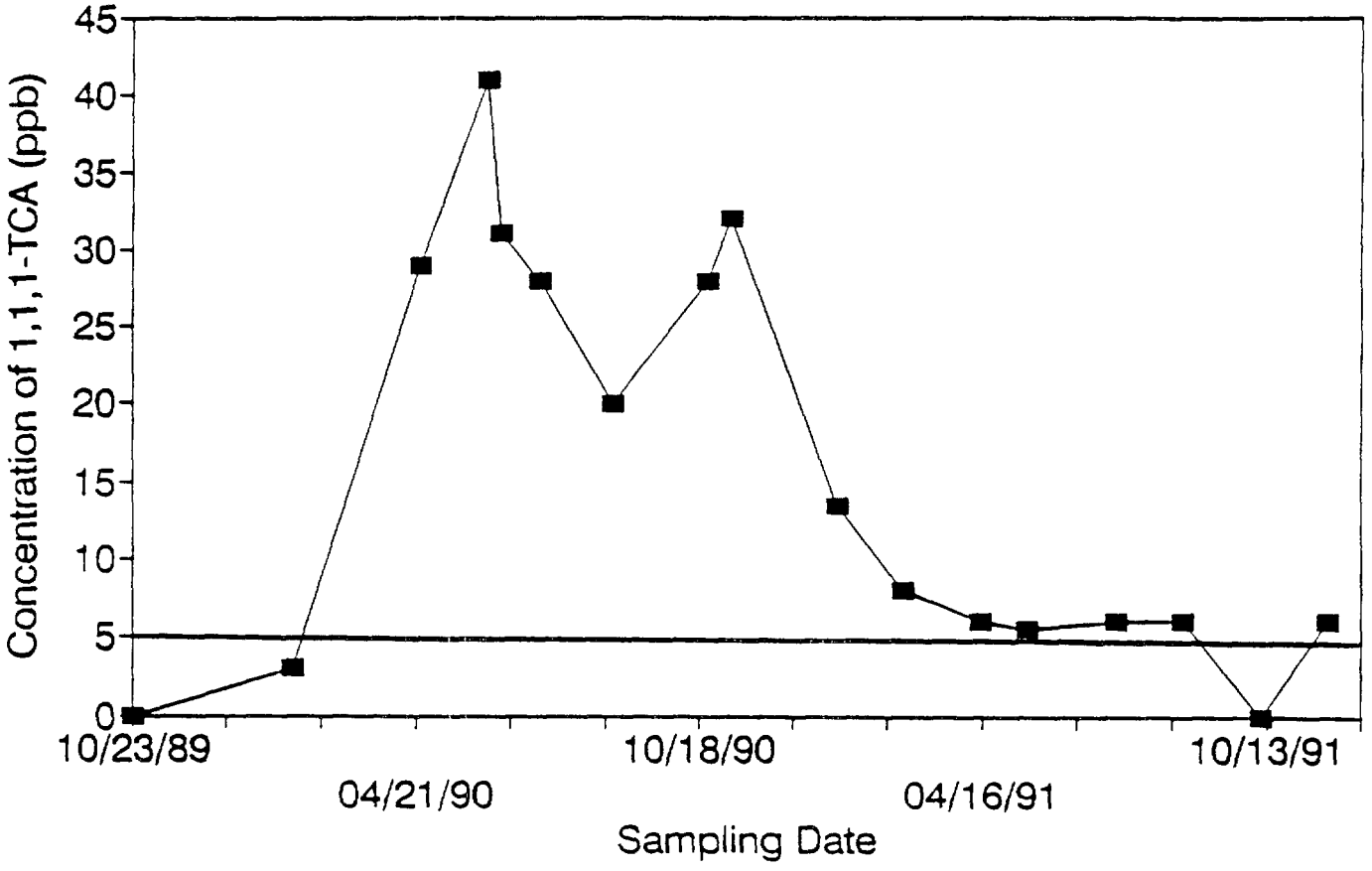
FOR: WEST VALLEY DEMONSTRATION PROJECT

BY: Dames & Moore WEST VALLEY, NEW YORK

DATE: 2/18/92 DRAWING: 92-00014

DRAWN BY: R. M. Ossman CHECKED BY: Z Zadins FILENAME: j:\dwg\seep\fig4 SHEET 1 of 1

Figure 5
Concentration of 1,1,1-TCA at WNGSEEP



* Horizontal line at 5 ppb represents method quantitation level for 1,1,1-trichloroethane.

Figure 6(a)
1991 Water Elevations

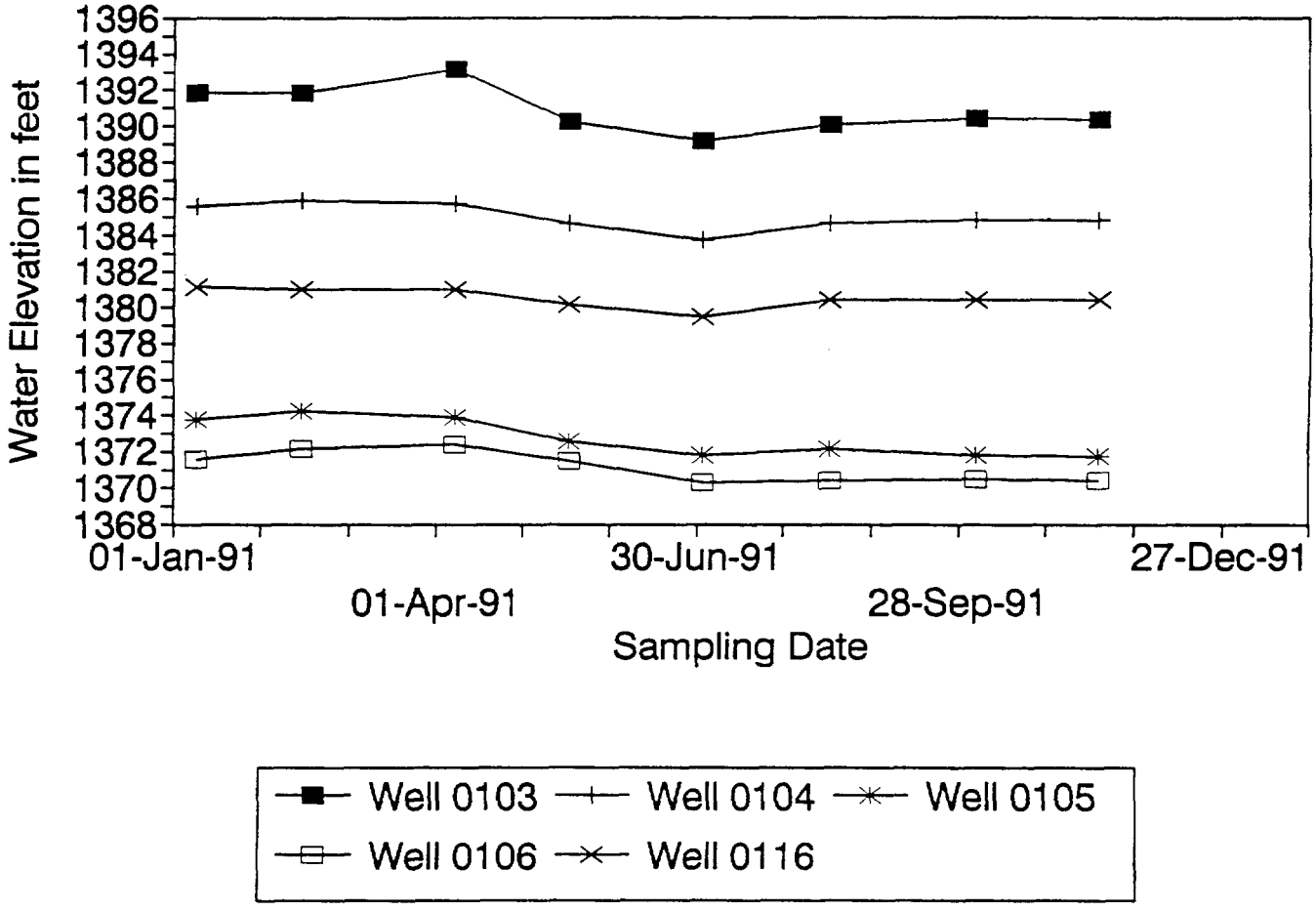


Figure 6(b)
1991 Water Elevations

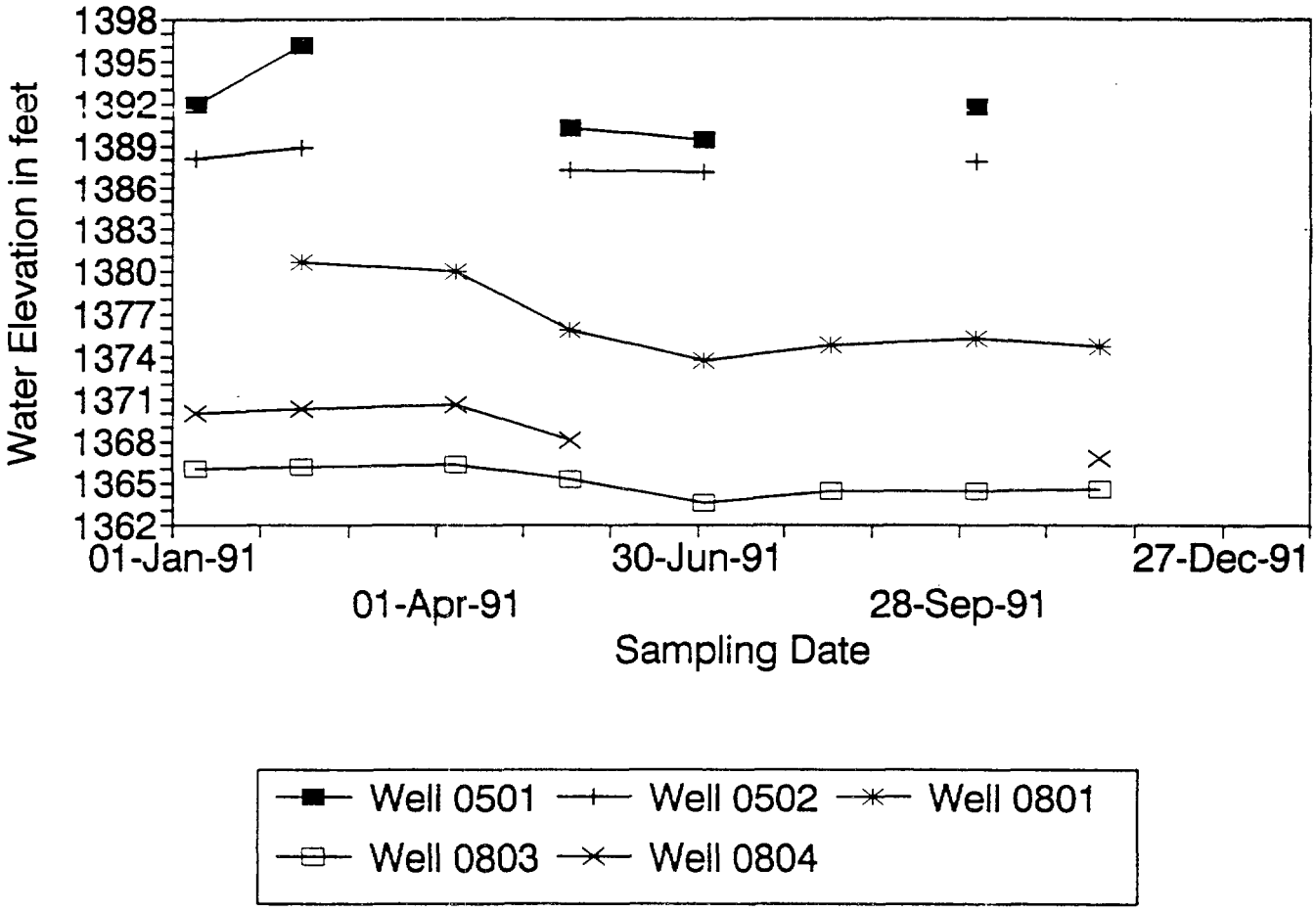
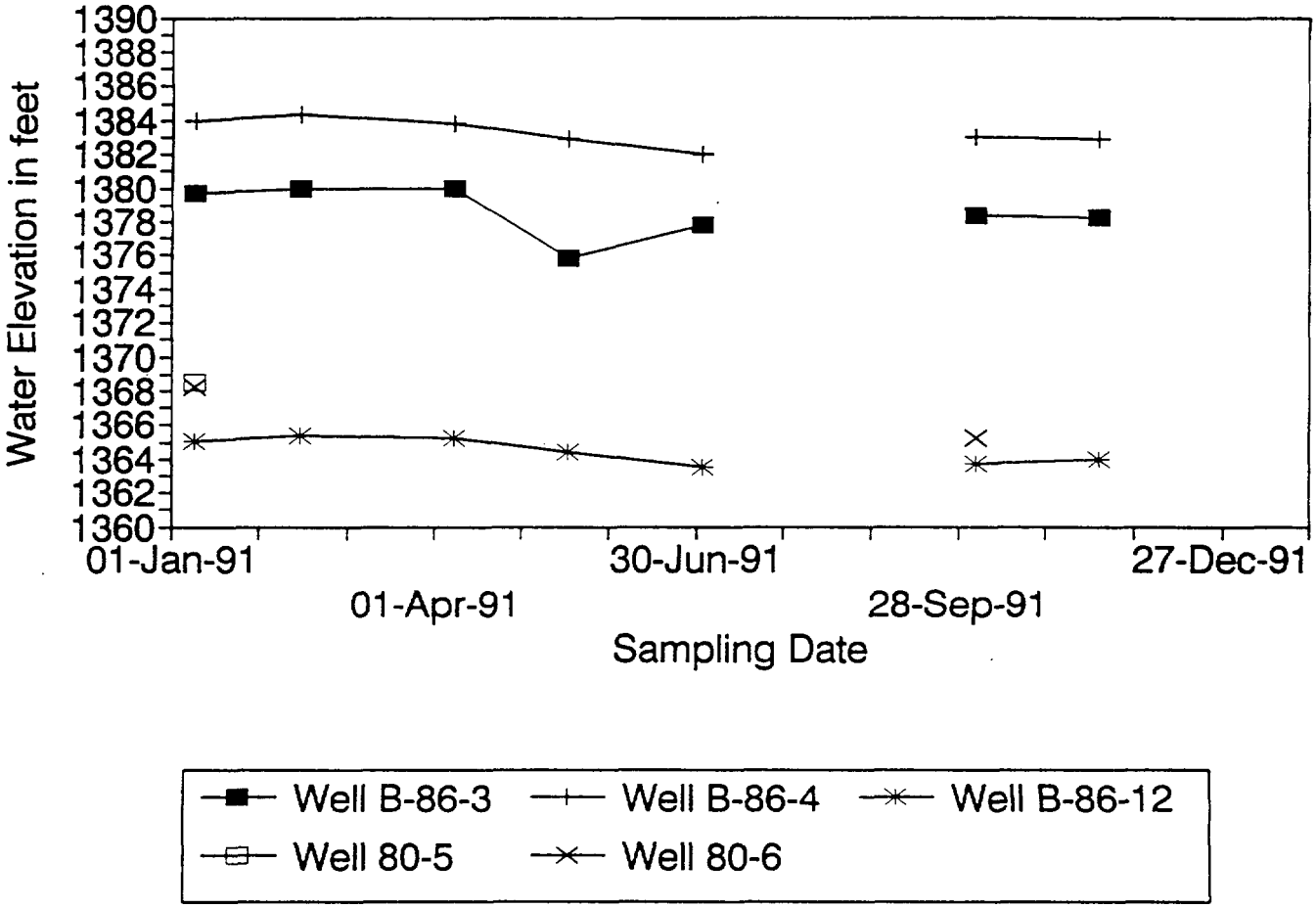


Figure 6(c)
1991 Water Elevations



Appendix A

WVNS changed its contract analytical laboratory from RECRA Environmental, Inc. to Ecology and Environment, Inc. (EE) during January 1991. Each lab reports its analytical results differently. If an analyte is not detected, RECRA reports it as a <, whereas EE reports it as ND. If an analyte is detected, but is below the quantitation level, RECRA reports it as a ≤, while EE reports it as Present <, with < signifying the analyte is present below stated detection limit.

The EE data sheets may have additional qualifiers associated with the analytical data. These qualifiers are designated either C, ND, J, B, or L and are defined at the bottom of each data sheet in the following manner:

Qualifiers: C = comment
J = Estimated Value
L = Present Below Stated Detection Limit
ND = Not Detected
B = Also Present in Blank

OCTOBER 23, 1989

AQUEOUS MATRIX
METHOD 8240 - HAZARDOUS SUBSTANCE LIST VOLATILE ORGANICS
Normal WNGSEEP Location - Duplicates.

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 2-WNGSEEP-A (10/23/89)	2-WNGSEEP-B (10/23/89)
Acetone	<10	<10
Benzene	<4.4	<4.4
Bromodichloromethane	<2.2	<2.2
Bromoform	<4.7	<4.7
Bromomethane	<10	<10
2-Butanone	<10	<10
Carbon disulfide	<5.0	<5.0
Carbon tetrachloride	<2.8	<2.8
Chlorobenzene	<6.0	<6.0
Chloroethane	<10	<10
2-Chloroethylvinyl ether	<10	<10
Chloroform	<1.6	<1.6
Chloromethane	<10	<10
Dibromochloromethane	<3.1	<3.1
1,1-Dichloroethane	<4.7	<4.7
1,2-Dichloroethane	<2.8	<2.8
1,1-Dichloroethylene	<2.8	<2.8
trans-1,2-Dichloroethylene	<1.6	<1.6
1,2-Dichloropropane	<6.0	<6.0
cis-1,3-Dichloropropene	<5.0	<5.0
trans-1,3-Dichloropropene	<5.0	<5.0
Ethylbenzene	<7.2	<7.2
2-Hexanone	<10	<10
Methylene chloride	<2.8	<2.8
4-Methyl-2-pentanone	<10	<10
Styrene	<5.0	<5.0
1,1,2,2-Tetrachloroethane	<6.9	<6.9
Tetrachloroethylene	<4.1	<4.1
Toluene	<6.0	<6.0
1,1,1-Trichloroethane	<3.8	<3.8
1,1,2-Trichloroethane	<5.0	<5.0
Trichloroethylene	<1.9	<1.9
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Total Xylenes	<5.0	<5.0

(continued)

AQUEOUS MATRIX
METHOD 8240 - HAZARDOUS SUBSTANCE LIST VOLATILE ORGANICS

ADDITIONAL SAMPLE INFORMATION	SAMPLE IDENTIFICATION (DATE)	
	2-WNGSEEP-A (10/23/89)	2-WNGSEEP-B (10/23/89)
Analysis Date	10/25/89	10/25/89
Internal Standards		
Level Added = 50 ug/l		
(% Recovery)		
Bromochloromethane	101	98
1,4-Difluorobenzene	85	83
Chlorobenzene D_5	87	87
Surrogates		
Level Added = 50 ug/l		
(% Recovery)		
4-Bromofluorobenzene	95	94
1,2-Dichloroethane-D_4	95	97
Toluene-D_8	102	99

AQUEOUS MATRIX
METHOD 8240 - HAZARDOUS SUBSTANCE LIST VOLATILE ORGANICS
Groundwater ~ 55 paces to N of normal
WNGSEEP- Duplicates.

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) WNGSEEPA-A (10/23/89)	WNGSEEPA-B (10/23/89)
Acetone	<10	<10
Benzene	<4.4	<4.4
Bromodichloromethane	<2.2	<2.2
Bromoform	<4.7	<4.7
Bromomethane	<10	<10
2-Butanone	<10	<10
Carbon disulfide	<5.0	<5.0
Carbon tetrachloride	<2.8	<2.8
Chlorobenzene	<6.0	<6.0
Chloroethane	<10	<10
2-Chloroethylvinyl ether	<10	<10
Chloroform	<1.6	<1.6
Chloromethane	<10	<10
Dibromochloromethane	<3.1	<3.1
1,1-Dichloroethane	<4.7	<4.7
1,2-Dichloroethane	<2.8	<2.8
1,1-Dichloroethylene	<2.8	<2.8
trans-1,2-Dichloroethylene	<1.6	<1.6
1,2-Dichloropropane	<6.0	<6.0
cis-1,3-Dichloropropene	<5.0	<5.0
trans-1,3-Dichloropropene	<5.0	<5.0
Ethylbenzene	<7.2	<7.2
2-Hexanone	<10	<10
Methylene chloride	<2.8	<2.8
4-Methyl-2-pentanone	<10	<10
Styrene	<5.0	<5.0
1,1,2,2-Tetrachloroethane	<6.9	<6.9
Tetrachloroethylene	<4.1	<4.1
Toluene	<6.0	<6.0
1,1,1-Trichloroethane	<3.8	<3.8
1,1,2-Trichloroethane	<5.0	<5.0
Trichloroethylene	<1.9	<1.9
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Total Xylenes	<5.0	<5.0

(continued)

AQUEOUS MATRIX
METHOD 8240 - HAZARDOUS SUBSTANCE LIST VOLATILE ORGANICS

ADDITIONAL SAMPLE INFORMATION	SAMPLE IDENTIFICATION (DATE)	
	WNGSEEPA-A (10/23/89)	WNGSEEPA-B (10/23/89)
Analysis Date	10/25/89	10/25/89
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	98	98
1,4-Difluorobenzene	81	81
Chlorobenzene D_5	84	85
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	95	93
1,2-Dichloroethane-D_4	98	95
Toluene-D_8	101	99

AQUEOUS MATRIX
METHOD 8240 - HAZARDOUS SUBSTANCE LIST VOLATILE ORGANICS
Non-routine Groundseep ~ 67 paces to N of normal WNGSEEP - duplicate.

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) WNGSEEPB-A (10/23/89)	WNGSEEPB-B (10/23/89)
Acetone	<10	<10
Benzene	<4.4	<4.4
Bromodichloromethane	<2.2	<2.2
Bromoform	<4.7	<4.7
Bromomethane	<10	<10
2-Butanone	<10	<10
Carbon disulfide	<5.0	<5.0
Carbon tetrachloride	<2.8	<2.8
Chlorobenzene	<6.0	<6.0
Chloroethane	<10	<10
2-Chloroethylvinyl ether	<10	<10
Chloroform	<1.6	<1.6
Chloromethane	<10	<10
Dibromochloromethane	<3.1	<3.1
1,1-Dichloroethane	<4.7	<4.7
1,2-Dichloroethane	<2.8	<2.8
1,1-Dichloroethylene	<2.8	<2.8
trans-1,2-Dichloroethylene	<1.6	<1.6
1,2-Dichloropropane	<6.0	<6.0
cis-1,3-Dichloropropene	<5.0	<5.0
trans-1,3-Dichloropropene	<5.0	<5.0
Ethylbenzene	<7.2	<7.2
2-Hexanone	<10	<10
Methylene chloride	<2.8	<2.8
4-Methyl-2-pentanone	<10	<10
Styrene	<5.0	<5.0
1,1,2,2-Tetrachloroethane	<6.9	<6.9
Tetrachloroethylene	<4.1	<4.1
Toluene	<6.0	<6.0
1,1,1-Trichloroethane	<3.8	<3.8
1,1,2-Trichloroethane	<5.0	<5.0
Trichloroethylene	<1.9	<1.9
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Total Xylenes	<5.0	<5.0

(continued)

AQUEOUS MATRIX
METHOD 8240 - HAZARDOUS SUBSTANCE LIST VOLATILE ORGANICS

ADDITIONAL SAMPLE INFORMATION	SAMPLE IDENTIFICATION (DATE)	
	WNGSEEPB-A (10/23/89)	WNGSEEPB-B (10/23/89)
Analysis Date	10/25/89	10/25/89
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	99	105
1,4-Difluorobenzene	83	89
Chlorobenzene D_5	85	90
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	95	95
1,2-Dichloroethane-D_4	95	87
Toluene-D_8	100	103

AQUEOUS MATRIX
METHOD 8240 - HAZARDOUS SUBSTANCE LIST VOLATILE ORGANICS

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 2-WNSP008-A (10/23/89)	2-WNSP008-B (10/23/89)
Acetone	<10	<10
Benzene	<4.4	<4.4
Bromodichloromethane	<2.2	<2.2
Bromoform	<4.7	<4.7
Bromomethane	<10	<10
2-Butanone	<10	<10
Carbon disulfide	<5.0	<5.0
Carbon tetrachloride	<2.8	<2.8
Chlorobenzene	<6.0	<6.0
Chloroethane	<10	<10
2-Chloroethylvinyl ether	<10	<10
Chloroform	<1.6	<1.6
Chloromethane	<10	<10
Dibromochloromethane	<3.1	<3.1
1,1-Dichloroethane	<4.7	<4.7
1,2-Dichloroethane	<2.8	<2.8
1,1-Dichloroethylene	<2.8	<2.8
trans-1,2-Dichloroethylene	<1.6	<1.6
1,2-Dichloropropane	<6.0	<6.0
cis-1,3-Dichloropropene	<5.0	<5.0
trans-1,3-Dichloropropene	<5.0	<5.0
Ethylbenzene	<7.2	<7.2
2-Hexanone	<10	<10
Methylene chloride	<2.8	<2.8
4-Methyl-2-pentanone	<10	<10
Styrene	<5.0	<5.0
1,1,2,2-Tetrachloroethane	<6.9	<6.9
Tetrachloroethylene	<4.1	<4.1
Toluene	<6.0	<6.0
1,1,1-Trichloroethane	<3.8	<3.8
1,1,2-Trichloroethane	<5.0	<5.0
Trichloroethylene	<1.9	<1.9
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Total Xylenes	<5.0	<5.0

(continued)

AQUEOUS MATRIX
METHOD 8240 - HAZARDOUS SUBSTANCE LIST VOLATILE ORGANICS

ADDITIONAL SAMPLE INFORMATION	SAMPLE IDENTIFICATION (DATE)	
	2-WNSP008-A (10/23/89)	2-WNSP008-B (10/23/89)
Analysis Date	10/25/89	10/25/89
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	107	112
1,4-Difluorobenzene	100	115
Chlorobenzene D_5	103	117
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	92	98
1,2-Dichloroethane-D_4	85	82
Toluene-D_8	98	97

AQUEOUS MATRIX
METHOD 8240 - HAZARDOUS SUBSTANCE LIST VOLATILE ORGANICS

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 1-WNW80-06-A (10/23/89)	1-WNW80-06-B (10/23/89)
Acetone	<10	<10
Benzene	<4.4	<4.4
Bromodichloromethane	<2.2	<2.2
Bromoform	<4.7	<4.7
Bromomethane	<10	<10
2-Butanone	<10	<10
Carbon disulfide	<5.0	<5.0
Carbon tetrachloride	<2.8	<2.8
Chlorobenzene	<6.0	<6.0
Chloroethane	<10	<10
2-Chloroethylvinyl ether	<10	<10
Chloroform	<1.6	<1.6
Chloromethane	<10	<10
Dibromochloromethane	<3.1	<3.1
1,1-Dichloroethane	<4.7	<4.7
1,2-Dichloroethane	<2.8	<2.8
1,1-Dichloroethylene	<2.8	<2.8
trans-1,2-Dichloroethylene	<1.6	<1.6
1,2-Dichloropropane	<6.0	<6.0
cis-1,3-Dichloropropene	<5.0	<5.0
trans-1,3-Dichloropropene	<5.0	<5.0
Ethylbenzene	<7.2	<7.2
2-Hexanone	<10	<10
Methylene chloride	<2.8	<2.8
4-Methyl-2-pentanone	<10	<10
Styrene	<5.0	<5.0
1,1,2,2-Tetrachloroethane	<6.9	<6.9
Tetrachloroethylene	<4.1	<4.1
Toluene	<6.0	<6.0
1,1,1-Trichloroethane	<3.8	<3.8
1,1,2-Trichloroethane	<5.0	<5.0
Trichloroethylene	<1.9	<1.9
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Total Xylenes	<5.0	<5.0

(continued)

AQUEOUS MATRIX
METHOD 8240 - HAZARDOUS SUBSTANCE LIST VOLATILE ORGANICS

ADDITIONAL SAMPLE INFORMATION	SAMPLE IDENTIFICATION (DATE)	
	1-WNW80-06-A (10/23/89)	1-WNW80-06-B (10/23/89)
Analysis Date	10/25/89	10/25/89
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	113	113
1,4-Difluorobenzene	108	115
Chlorobenzene D_5	113	118
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	94	98
1,2-Dichloroethane-D_4	84	81
Toluene-D_8	96	93

AQUEOUS MATRIX
METHOD 8240 - HAZARDOUS SUBSTANCE LIST VOLATILE ORGANICS

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 2-WNW80-02-A (10/23/89)	2-WNW80-02-B (10/23/89)
Acetone	<10	<10
Benzene	<4.4	<4.4
Bromodichloromethane	<2.2	<2.2
Bromoform	<4.7	<4.7
Bromomethane	<10	<10
2-Butanone	<10	<10
Carbon disulfide	<5.0	<5.0
Carbon tetrachloride	<2.8	<2.8
Chlorobenzene	<6.0	<6.0
Chloroethane	<10	<10
2-Chloroethylvinyl ether	<10	<10
Chloroform	<1.6	<1.6
Chloromethane	<10	<10
Dibromochloromethane	<3.1	<3.1
1,1-Dichloroethane	<4.7	<4.7
1,2-Dichloroethane	<2.8	<2.8
1,1-Dichloroethylene	<2.8	<2.8
trans-1,2-Dichloroethylene	<1.6	<1.6
1,2-Dichloropropane	<6.0	<6.0
cis-1,3-Dichloropropene	<5.0	<5.0
trans-1,3-Dichloropropene	<5.0	<5.0
Ethylbenzene	<7.2	<7.2
2-Hexanone	<10	<10
Methylene chloride	<2.8	<2.8
4-Methyl-2-pentanone	<10	<10
Styrene	<5.0	<5.0
1,1,2,2-Tetrachloroethane	<6.9	<6.9
Tetrachloroethylene	<4.1	<4.1
Toluene	<6.0	<6.0
1,1,1-Trichloroethane	<3.8	<3.8
1,1,2-Trichloroethane	<5.0	<5.0
Trichloroethylene	<1.9	<1.9
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Total Xylenes	<5.0	<5.0

(continued)

AQUEOUS MATRIX
METHOD 8240 - HAZARDOUS SUBSTANCE LIST VOLATILE ORGANICS

ADDITIONAL SAMPLE INFORMATION	SAMPLE IDENTIFICATION (DATE)	
	2-WNW80-02-A (10/23/89)	2-WNW80-02-B (10/23/89)
Analysis Date	10/25/89	10/25/89
Internal Standards		
Level Added = 50 ug/l		
(% Recovery)		
Bromochloromethane	113	115
1,4-Difluorobenzene	111	109
Chlorobenzene D_5	112	113
Surrogates		
Level Added = 50 ug/l		
(% Recovery)		
4-Bromofluorobenzene	95	94
1,2-Dichloroethane-D_4	82	78
Toluene-D_8	98	96

AQUEOUS MATRIX
METHOD 8240 - HAZARDOUS SUBSTANCE LIST VOLATILE ORGANICS

Trip Blank

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) Trip-1-A (10/23/89)	Trip-1-B (10/23/89)
Acetone	<10	<10
Benzene	<4.4	<4.4
Bromodichloromethane	<2.2	<2.2
Bromoform	<4.7	<4.7
Bromomethane	<10	<10
2-Butanone	<10	<10
Carbon disulfide	<5.0	<5.0
Carbon tetrachloride	<2.8	<2.8
Chlorobenzene	<6.0	<6.0
Chloroethane	<10	<10
2-Chloroethylvinyl ether	<10	<10
Chloroform	<1.6	<1.6
Chloromethane	<10	<10
Dibromochloromethane	<3.1	<3.1
1,1-Dichloroethane	<4.7	<4.7
1,2-Dichloroethane	<2.8	<2.8
1,1-Dichloroethylene	<2.8	<2.8
trans-1,2-Dichloroethylene	<1.6	<1.6
1,2-Dichloropropane	<6.0	<6.0
cis-1,3-Dichloropropene	<5.0	<5.0
trans-1,3-Dichloropropene	<5.0	<5.0
Ethylbenzene	<7.2	<7.2
2-Hexanone	<10	<10
Methylene chloride	<2.8	<2.8
4-Methyl-2-pentanone	<10	<10
Styrene	<5.0	<5.0
1,1,2,2-Tetrachloroethane	<6.9	<6.9
Tetrachloroethylene	<4.1	<4.1
Toluene	<6.0	<6.0
1,1,1-Trichloroethane	<3.8	<3.8
1,1,2-Trichloroethane	<5.0	<5.0
Trichloroethylene	<1.9	<1.9
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Total Xylenes	<5.0	<5.0

(continued)

AQUEOUS MATRIX
METHOD 8240 - HAZARDOUS SUBSTANCE LIST VOLATILE ORGANICS

ADDITIONAL SAMPLE INFORMATION	SAMPLE IDENTIFICATION (DATE)	
	Trip-1-A (10/23/89)	Trip-1-B (10/23/89)
Analysis Date	10/25/89	10/25/89
Internal Standards		
Level Added = 50 ug/l		
(% Recovery)		
Bromochloromethane	95	102
1,4-Difluorobenzene	97	101
Chlorobenzene D_5	100	104
Surrogates		
Level Added = 50 ug/l		
(% Recovery)		
4-Bromofluorobenzene	102	102
1,2-Dichloroethane-D_4	98	94
Toluene-D_8	99	97

AQUEOUS MATRIX
METHOD 8240 - HAZARDOUS SUBSTANCE LIST VOLATILE ORGANICS

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION
	Method Blank
Acetone	<10
Benzene	<4.4
Bromodichloromethane	<2.2
Bromoform	<4.7
Bromomethane	<10
2-Butanone	<10
Carbon disulfide	<5.0
Carbon tetrachloride	<2.8
Chlorobenzene	<6.0
Chloroethane	<10
2-Chloroethylvinyl ether	<10
Chloroform	<1.6
Chloromethane	<10
Dibromochloromethane	<3.1
1,1-Dichloroethane	<4.7
1,2-Dichloroethane	<2.8
1,1-Dichloroethylene	<2.8
trans-1,2-Dichloroethylene	<1.6
1,2-Dichloropropane	<6.0
cis-1,3-Dichloropropene	<5.0
trans-1,3-Dichloropropene	<5.0
Ethylbenzene	<7.2
2-Hexanone	<10
Methylene chloride	<2.8
4-Methyl-2-pentanone	<10
Styrene	<5.0
1,1,2,2-Tetrachloroethane	<6.9
Tetrachloroethylene	<4.1
Toluene	<6.0
1,1,1-Trichloroethane	<3.8
1,1,2-Trichloroethane	<5.0
Trichloroethylene	<1.9
Vinyl acetate	<10
Vinyl chloride	<10
Total Xylenes	<5.0

(continued)

AQUEOUS MATRIX
METHOD 8240 - HAZARDOUS SUBSTANCE LIST VOLATILE ORGANICS

ADDITIONAL SAMPLE INFORMATION	SAMPLE IDENTIFICATION
	Method Blank
Analysis Date	10/25/89
Internal Standards	
Level Added = 50 ug/l	
(% Recovery)	
Bromochloromethane	97
1,4-Difluorobenzene	98
Chlorobenzene-D_5	99
Surrogates	
Level Added = 50 ug/l	
(% Recovery)	
4-Bromofluorobenzene	101
1,2-Dichloroethane-D_4	98
Toluene-D_8	100

FEBRUARY1 21, 1990

AQUOEUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-00717.2 (2/21/90)	90-00719.2 (2/21/90)	90-00720.1 (2/21/90)
Acetone	<10	<10	<10
Allyl chloride	<20	<20	<20
Benzene	<5	<5	<5
Bromomethane	<10	<10	<10
Bromodichloromethane	<5	<5	<5
Bromoform	<5	<5	<5
Carbon disulfide	<5	<5	<5
Carbon tetrachloride	<5	<5	<5
Chlorobenzene	<5	<5	<5
Chloroethane	<10	<10	<10
Chloroform	<5	<5	<5
Chloromethane	<10	<10	<10
Chloroprene	<20	<20	<20
Dibromochloromethane	<5	<5	<5
1,2-Dibromo-3-chloropropane	<40	<40	<40
1,2-Dibromoethane	<20	<20	<20
Dibromomethane	<20	<20	<20
Trans-1,4-dichloro-2-butene	<40	<40	<40
Dichlorodifluoromethane	<40	<40	<40
1,1-Dichloroethane	<5	<5	<5
1,2-Dichloroethane	<5	<5	<5
1,1-Dichloroethylene	<5	<5	<5
Trans-1,2-dichloroethylene	<5	<5	<5
1,2-Dichloropropane	<5	<5	<5
Cis-1,3-dichloropropene	<5	<5	<5
Trans-1,3-dichloropropene	<5	<5	<5
Ethyl benzene	<5	<5	<5
Ethyl methacrylate	<20	<20	<20
2-Hexanone	<10	<10	<10
Methylene chloride	<5	<5	<5
Methyl ethyl ketone	<10	<10	<10
Methyl iodide	<10	<10	<10

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-00717.2 (2/21/90)	90-00719.2 (2/21/90)	90-00720.1 (2/21/90)
Methyl isobutyl ketone	<10	<10	<10
Pentachloroethane	<40	<40	<40
Styrene	<5	<5	<5
1,1,1,2-Tetrachloroethane	<20	<20	<20
1,1,2,2-Tetrachloroethane	<5	<5	<5
Tetrachloroethylene	<5	<5	<5
Toluene	<5	<5	<5
1,1,1-Trichloroethane	<5	<5	<5
1,1,2-Trichloroethane	<5	<5	<5
Trichloroethylene	<5	<5	<5
Trichlorofluoromethane	<5	<5	<5
1,2,3-Trichloropropane	<20	<20	<20
Vinyl acetate	<10	<10	<10
Vinyl chloride	<10	<10	<10
Xylene(total)	<5	<5	<5
Analysis Date	2/22/90	2/22/90	2/22/90
Internal Standards			
Level Added = 50 ug/l (% Recovery)			
Bromochloromethane	100	99	99
1,4-Difluorobenzene	92	99	98
Chlorobenzene-D_5	91	99	97
Surrogates			
Level Added = 50 ug/l (% Recovery)			
4-Bromofluorobenzene	102	109	103
1,2-Dichloroethane-D_4	87	92	88
Toluene-D_8	105	101	102

AQUOEUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-00721.2 (2/21/90)	90-00722.2 (2/21/90)
Acetone	<10	<10
Allyl chloride	<20	<20
Benzene	<5	<5
Bromomethane	<10	<10
Bromodichloromethane	<5	<5
Bromoform	<5	<5
Carbon disulfide	<5	<5
Carbon tetrachloride	<5	<5
Chlorobenzene	<5	<5
Chloroethane	<10	<10
Chloroform	<5	<5
Chloromethane	<10	<10
Chloroprene	<20	<20
Dibromochloromethane	<5	<5
1,2-Dibromo-3-chloropropane	<40	<40
1,2-Dibromoethane	<20	<20
Dibromomethane	<20	<20
Trans-1,4-dichloro-2-butene	<40	<40
Dichlorodifluoromethane	<40	<40
1,1-Dichloroethane	<5	<5
1,2-Dichloroethane	<5	<5
1,1-Dichloroethylene	<5	<5
Trans-1,2-dichloroethylene	<5	<5
1,2-Dichloropropane	<5	<5
Cis-1,3-dichloropropene	<5	<5
Trans-1,3-dichloropropene	<5	<5
Ethyl benzene	<5	<5
Ethyl methacrylate	<20	<20
2-Hexanone	<10	<10
Methylene chloride	<5	<5
Methyl ethyl ketone	<10	<10
Methyl iodide	<10	<10

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-00721.2 (2/21/90)	90-00722.2 (2/21/90)
Methyl isobutyl ketone	<10	<10
Pentachloroethane	<40	<40
Styrene	<5	<5
1,1,1,2-Tetrachloroethane	<20	<20
1,1,2,2-Tetrachloroethane	<5	<5
Tetrachloroethylene	<5	<5
Toluene	<5	<5
1,1,1-Trichloroethane	<5	<5
1,1,2-Trichloroethane	<5	<5
Trichloroethylene	<5	<5
Trichlorofluoromethane	<5	<5
1,2,3-Trichloropropane	<20	<20
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Xylene(total)	<5	<5
Analysis Date	2/22/90	2/22/90
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	101	100
1,4-Difluorobenzene	99	100
Chlorobenzene-D_5	101	100
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	109	109
1,2-Dichloroethane-D_4	93	85
Toluene-D_8	103	101

West Valley Nuclear Services, Inc. P.O. Box 191, West Valley, NY 14171
attn: Environmental Laboratory

CHAIN OF CUSTODY RECORD

WEST VALLEY NUCLEAR SERVICES

PROJECT NAME West Valley Demonstration Project

PURCHASE ORDER

SAMPLER SIGNATURE(S) Thomas X. Giamo Jr.

X=ANALYSIS REQUEST

STATION ID	DATE	TIME	STATION LOCATION	NO. OF CONT.	VOA (x2)	TOH	TOC/Phenols	Anions (SO4, NO3, F, Cl)	Total Metals	Soluble Metals			REMARKS
90-00722.2	2-21-90	1600	WNGJEEP	2	X								(*) VOA's are in duplicate; analyze only ONE
90-00722.3				1		X							
90-00722.4				1			X						
90-00722.5				1				X					(*) Metals: As, Ba, Cd, Cr, Fe, Pb, Mn, Hg, Se, Ag, Na
90-00722.6				1					X				
90-00722.7				1						X			
90-00721.2	2-21-90	1600	WNSP008	2	X								(*) See above
90-00721.3				1		X							
90-00721.4				1			X						
90-00721.5				1				X					(*) See above
90-00721.6				1					X				
90-00721.7				1						X			

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY	COMMENTS
T. X. Giamo	Darryl R. Hartman			
2/21/90 1826	2/21/90 6:08 PM			
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME	

WV 1155 REV 1

WVDP:0001106.RM

West Valley Nuclear Services, Inc. P.O. Box 191, West Valley, NY 14171
Attn: Environmental Laboratory

CHAIN OF CUSTODY RECORD

WEST VALLEY NUCLEAR SERVICES

PROJECT NAME W.V.D.P

PURCHASE ORDER

SAMPLER SIGNATURE(S) Nevella A. McNeil / T.X. Grame

X=ANALYSIS REQUEST

STATION ID	DATE	TIME	STATION LOCATION	NO. OF CONT.	VOAs X2	TOH	TOC/Phenols	Anions (SO4 NO3 F, Cl)	Soluble Metals	Total Metals			REMARKS
90-00719.2	2/21/90	1500	86-03	2	X								VOAs are in duplicate;
90-00719.3						X							ANALYZE ONE only
90-00719.4							X						
90-00719.5								X					
90-00719.6										X			Metals: As, Ba,
90-00719.7									X				Cd, Cr, Fe, Pb, MN, Hg, Se, Ag, Na
90-00720.1	2/21/90	1520	87-04	2	X								
90-00720.2						X							
90-00720.3							X						
90-00720.4								X					
90-00720.5										X			
90-00720.6									X				

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY	COMMENTS
T.X. Grame	Darryl R. Hartman			
2/21/90 1826	2/21/90 6:28 PM			
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME	

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West Valley Nuclear Services, Inc. P.O. Box 191, West Valley, NY 14171
attn: Environmental Laboratory

CHAIN OF CUSTODY RECORD

WVDP:0001106.RM

WEST VALLEY NUCLEAR SERVICES

PROJECT NAME W.V.D.P

PURCHASE ORDER

SAMPLER SIGNATURE(S) Thomas X. Grano

X=ANALYSIS REQUEST

STATION ID	DATE	TIME	STATION LOCATION	NO. OF CONT.	VOA (x2)	TOH	TOC/Phenols	Anions (F, Cl, SO4, NO3)	Total Metals	Soluble Metals			REMARKS
90-00717.2	2/21/90	1140	80-05	2	X								VOAs are duplicate ANALYZE ONE ONLY.
90-00717.3				1		X							
90-00717.4				1			X						
90-00717.5				1				X					
90-00717.6				1					X				Metals: As, Ba,
90-00717.7				1						X			Cd, Cr, Fe, Pb, Mn, Hg, Se, Ag, Na

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY
T. X. Grano	Daryl R. Hartman		
2/21/90 1826	2/21/90 6:35 PM		
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME

COMMENTS:

WV-1155, Rev. 1

APRIL 24, 1990

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-01702.2 (4/24/90)	90-01703.2 (4/24/90)
Acetone	<10	<10
Allyl chloride	<20	<20
Benzene	<5	<5
Bromomethane	<10	<10
Bromodichloromethane	<5	<5
Bromoform	<5	<5
Carbon disulfide	<5	<5
Carbon tetrachloride	<5	<5
Chlorobenzene	<5	<5
Chloroethane	<10	<10
Chloroform	<5	<5
Chloromethane	<10	<10
Chloroprene	<20	<20
Dibromochloromethane	<5	<5
1,2-Dibromo-3-chloropropane	<40	<40
1,2-Dibromoethane	<20	<20
Dibromomethane	<20	<20
Trans-1,4-dichloro-2-butene	<40	<40
Dichlorodifluoromethane	<40	<40
1,1-Dichloroethane	<5	<5
1,2-Dichloroethane	<5	<5
1,1-Dichloroethylene	<5	<5
Trans-1,2-dichloroethylene	<5	<5
1,2-Dichloropropane	<5	<5
Cis-1,3-dichloropropene	<5	<5
Trans-1,3-dichloropropene	<5	<5
Ethyl benzene	<5	<5
Ethyl methacrylate	<20	<20
2-Hexanone	<10	<10
Methylene chloride	<5	<5
Methyl ethyl ketone	<10	<10
Methyl iodide	<10	<10

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-01702.2 (4/24/90)	90-01703.2 (4/24/90)
Methyl isobutyl ketone	<10	<10
Pentachloroethane	<40	<40
Styrene	<5	<5
1,1,1,2-Tetrachloroethane	<20	<20
1,1,2,2-Tetrachloroethane	<5	<5
Tetrachloroethylene	<5	<5
Toluene	<5	<5
1,1,1-Trichloroethane	29	<5
1,1,2-Trichloroethane	<5	<5
Trichloroethylene	<5	<5
Trichlorofluoromethane	<5	<5
1,2,3-Trichloropropane	<20	<20
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Xylene(total)	<5	<5
Analysis Date	4/25/90	4/25/90
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	95	93
1,4-Difluorobenzene	92	91
Chlorobenzene-D_5	93	90
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	99	102
1,2-Dichloroethane-D_4	95	98
Toluene-D_8	99	103

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE)	
	90-01713.2 (4/24/90)	90-01714 (4/24/90)
Acetone	<10	<10
Allyl chloride	<20	<20
Benzene	<5	<5
Bromomethane	<10	<10
Bromodichloromethane	<5	<5
Bromoform	<5	<5
Carbon disulfide	<5	<5
Carbon tetrachloride	<5	<5
Chlorobenzene	<5	<5
Chloroethane	<10	<10
Chloroform	<5	<5
Chloromethane	<10	<10
Chloroprene	<20	<20
Dibromochloromethane	<5	<5
1,2-Dibromo-3-chloropropane	<40	<40
1,2-Dibromoethane	<20	<20
Dibromomethane	<20	<20
Trans-1,4-dichloro-2-butene	<40	<40
Dichlorodifluoromethane	<40	<40
1,1-Dichloroethane	<5	<5
1,2-Dichloroethane	<5	<5
1,1-Dichloroethylene	<5	<5
Trans-1,2-dichloroethylene	<5	<5
1,2-Dichloropropane	<5	<5
Cis-1,3-dichloropropene	<5	<5
Trans-1,3-dichloropropene	<5	<5
Ethyl benzene	<5	<5
Ethyl methacrylate	<20	<20
2-Hexanone	<10	<10
Methylene chloride	<5	<5
Methyl ethyl ketone	<10	<10
Methyl iodide	<10	<10

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-01713.2 (4/24/90)	90-01714 (4/24/90)
Methyl isobutyl ketone	<10	<10
Pentachloroethane	<40	<40
Styrene	<5	<5
1,1,1,2-Tetrachloroethane	<20	<20
1,1,2,2-Tetrachloroethane	<5	<5
Tetrachloroethylene	<5	<5
Toluene	<5	<5
1,1,1-Trichloroethane	<5	<5
1,1,2-Trichloroethane	<5	<5
Trichloroethylene	<5	<5
Trichlorofluoromethane	<5	<5
1,2,3-Trichloropropane	<20	<20
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Xylene(total)	<5	<5
Analysis Date	4/25/90	4/25/90
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	95	93
1,4-Difluorobenzene	94	91
Chlorobenzene-D_5	92	90
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	102	103
1,2-Dichloroethane-D_4	97	98
Toluene-D_8	102	101

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-01715 (4/24/90)
Acetone	<10
Allyl chloride	<20
Benzene	<5
Bromomethane	<10
Bromodichloromethane	<5
Bromoform	<5
Carbon disulfide	<5
Carbon tetrachloride	<5
Chlorobenzene	<5
Chloroethane	<10
Chloroform	<5
Chloromethane	<10
Chloroprene	<20
Dibromochloromethane	<5
1,2-Dibromo-3-chloropropane	<40
1,2-Dibromoethane	<20
Dibromomethane	<20
Trans-1,4-dichloro-2-butene	<40
Dichlorodifluoromethane	<40
1,1-Dichloroethane	<5
1,2-Dichloroethane	<5
1,1-Dichloroethylene	<5
Trans-1,2-dichloroethylene	<5
1,2-Dichloropropane	<5
Cis-1,3-dichloropropene	<5
Trans-1,3-dichloropropene	<5
Ethyl benzene	<5
Ethyl methacrylate	<20
2-Hexanone	<10
Methylene chloride	<5
Methyl ethyl ketone	<10
Methyl iodide	<10

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-01715 (4/24/90)
Methyl isobutyl ketone	<10
Pentachloroethane	<40
Styrene	<5
1,1,1,2-Tetrachloroethane	<20
1,1,2,2-Tetrachloroethane	<5
Tetrachloroethylene	<5
Toluene	<5
1,1,1-Trichloroethane	<5
1,1,2-Trichloroethane	<5
Trichloroethylene	<5
Trichlorofluoromethane	<5
1,2,3-Trichloropropane	<20
Vinyl acetate	<10
Vinyl chloride	<10
Xylene(total)	<5
Analysis Date	4/25/90
Internal Standards	
Level Added = 50 ug/l	
(% Recovery)	
Bromochloromethane	95
1,4-Difluorobenzene	94
Chlorobenzene-D_5	91
Surrogates	
Level Added = 50 ug/l	
(% Recovery)	
4-Bromofluorobenzene	99
1,2-Dichloroethane-D_4	97
Toluene-D_8	105

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...tn: Environmental Laboratory ... Box 191, West Valley, NY 14171

...AIN OF CUSTODY RECORD

WVDP:0001106.RM

...T VALLEY NUCLEAR SERVICES

...JECT NAME

PURCHASE ORDER

...PLER SIGNATURE(S) TX Gramo

CONTAINER TYPE

X=ANALYSIS REQUEST

STATION ID	DATE	TIME	STATION LOCATION	NO. OF CONT.		VOA (APP IX)	TOH	TOC/Phenols	Anions (SO4 NO3 F, Cl)	Total Metals	Soluble Metals			REMARKS
90-01703.2	4/24/90	1000	2-WNS8008	✓	2	X								VOAs are in duplicate, analyze one only
0-01703.3				✓	1		X							
0-01703.4				✓	1			X						
0-01704.5	*			✓	1				X					Metals: AS, Ba, Cd,
0-01704.6	*			✓	1					X				Cr, Fe, Pb, Mn, Hg,
0-01704.7	*			✓	1						X			Se, Ag, Na
0-01702.2	4/24/90	1400	seep	✓	2	X								
0-01702.3				✓	1		X							
0-01702.4				✓	1			X						
0-01702.5				✓	1				X					
0-01702.6				✓	1					X				
0-01702.7				✓	1						X			

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY	COMMENTS
TX Gramo	R J Reynolds			
4/24/90 1750	4/24/9. 1753			
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME	

...-1155, Rev.

MPP → 52 NW 2 ... 6/18/90

* Samples received ... labeled 90-01703.5; 90-0170... + 90-01703.5

TDP 4/25/90

WVDP:0001106.RM

MAIN OF CUSTODY RECORD

WEST VALLEY NUCLEAR SERVICES

PROJECT NAME

PURCHASE ORDER

SAMPLER SIGNATURE(S) TX Grano

CONTAINER TYPE

X=ANALYSIS REQUEST

STATION ID	DATE	TIME	STATION LOCATION	NO. OF CONT.	VOA (APP IX)	TOH	TOC/Phenol	Anions (SO4, NO3, F, Cl)	Total Metals	Soluble Metals			REMARKS
90-01713.2	4/24/90	1515	WNW80-05 Sat Fox 4-5-90	✓ 2	X								(F) VOAs are duplicate
90-01713.3	↓	↓		✓ 1		X							Analyze 1 only
90-01713.4				✓ 1			X						
90-01713.5				✓ 1				X					(F) Metals: As, Ba
90-01713.6				✓ 1					X				Cd, Cr, Fe, Pb, Mn, Hg, Se, Ag, Na
90-01713.7	↓	↓		✓ 1						X			
90-01714	4/24/90	1515	Field Blank	✓ 2	X								
90-01715	↓	1000	Trip Blank	* LACK OF HEADSPACE IN ONE 40 ml VIAL. (1/2 ml) DSB 2	X								

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY	COMMENTS
TX Grano	R. J. Reynolds			
4/24/90 1750	4/24/90 1753			
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME	

V-1155, Rev. 1

MPP

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JUNE 6, 1990

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE)	
	~~90-02237.2~~ (6/7/90)	~~90-02238.2~~ (6/7/90)
Acetone	<10	<10
Allyl chloride	<20	<20
Benzene	<5	<5
Bromomethane	<10	<10
Bromodichloromethane	<5	<5
Bromoform	<5	<5
Carbon disulfide	<5	<5
Carbon tetrachloride	<5	<5
Chlorobenzene	<5	<5
Chloroethane	<10	<10
Chloroform	<5	<5
Chloromethane	<10	<10
Chloroprene	<20	<20
Dibromochloromethane	<5	<5
1,2-Dibromo-3-chloropropane	<40	<40
1,2-Dibromoethane	<20	<20
Dibromomethane	<20	<20
Trans-1,4-dichloro-2-butene	<40	<40
Dichlorodifluoromethane	<40	<40
1,1-Dichloroethane	<5	<5
1,2-Dichloroethane	<5	<5
1,1-Dichloroethylene	<5	<5
Trans-1,2-dichloroethylene	<5	<5
1,2-Dichloropropane	<5	<5
Cis-1,3-dichloropropene	<5	<5
Trans-1,3-dichloropropene	<5	<5
Ethyl benzene	<5	<5
Ethyl methacrylate	<20	<20
2-Hexanone	<10	<10
Methylene chloride	<5	<5
Methyl ethyl ketone	<10	<10
Methyl iodide	<10	<10

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) ~~90-02237.2~~ (6/7/90)	~~90-02238.2~~ (6/7/90)
Methyl isobutyl ketone	<10	<10
Pentachloroethane	<40	<40
Styrene	<5	<5
1,1,1,2-Tetrachloroethane	<20	<20
1,1,2,2-Tetrachloroethane	<5	<5
Tetrachloroethylene	<5	<5
Toluene	<5	<5
1,1,1-Trichloroethane	<5	<5
1,1,2-Trichloroethane	<5	<5
Trichloroethylene	<5	<5
Trichlorofluoromethane	<5	<5
1,2,3-Trichloropropane	<20	<20
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Xylene(total)	<5	<5
Analysis Date	6/11/90	6/8/90
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	103	89
1,4-Difluorobenzene	99	87
Chlorobenzene-D_5	102	107
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	101	118 *
1,2-Dichloroethane-D_4	93	~~110~~
Toluene-D_8	100	88

* Elevated surrogate recovery due to sample matrix interference.

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE)	
	90-02269.2 (6/6/90)	90-02270.2 (6/6/90)
Acetone	<10	<10
Allyl chloride	<20	<20
Benzene	<5	<5
Bromomethane	<10	<10
Bromodichloromethane	<5	<5
Bromoform	<5	<5
Carbon disulfide	<5	<5
Carbon tetrachloride	<5	<5
Chlorobenzene	<5	<5
Chloroethane	<10	<10
Chloroform	<5	<5
Chloromethane	<10	<10
Chloroprene	<20	<20
Dibromochloromethane	<5	<5
1,2-Dibromo-3-chloropropane	<40	<40
1,2-Dibromoethane	<20	<20
Dibromomethane	<20	<20
Trans-1,4-dichloro-2-butene	<40	<40
Dichlorodifluoromethane	<40	<40
1,1-Dichloroethane	<5	<5
1,2-Dichloroethane	<5	<5
1,1-Dichloroethylene	<5	<5
Trans-1,2-dichloroethylene	<5	<5
1,2-Dichloropropane	<5	<5
Cis-1,3-dichloropropene	<5	<5
Trans-1,3-dichloropropene	<5	<5
Ethyl benzene	<5	<5
Ethyl methacrylate	<20	<20
2-Hexanone	<10	<10
Methylene chloride	<5	<5
Methyl ethyl ketone	<10	<10
Methyl iodide	<10	<10

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-02269.2 (6/6/90)	90-02270.2 (6/6/90)
Methyl isobutyl ketone	<10	<10
Pentachloroethane	<40	<40
Styrene	<5	<5
1,1,1,2-Tetrachloroethane	<20	<20
1,1,2,2-Tetrachloroethane	<5	<5
Tetrachloroethylene	<5	<5
Toluene	<5	<5
1,1,1-Trichloroethane	<5	41
1,1,2-Trichloroethane	<5	<5
Trichloroethylene	<5	<5
Trichlorofluoromethane	<5	<5
1,2,3-Trichloropropane	<20	<20
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Xylene(total)	<5	<5
Analysis Date	6/8/90	6/8/90
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	89	90
1,4-Difluorobenzene	87	90
Chlorobenzene-D_5	106	110
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	124 *	113
1,2-Dichloroethane-D_4	107	110
Toluene-D_8	91	93

* Elevated surrogate recovery due to sample matrix interference.

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-02271 (6/6/90)	90-02272 (6/6/90)
Acetone	<10	<10
Allyl chloride	<20	<20
Benzene	<5	<5
Bromomethane	<10	<10
Bromodichloromethane	<5	<5
Bromoform	<5	<5
Carbon disulfide	<5	<5
Carbon tetrachloride	<5	<5
Chlorobenzene	<5	<5
Chloroethane	<10	<10
Chloroform	<5	<5
Chloromethane	<10	<10
Chloroprene	<20	<20
Dibromochloromethane	<5	<5
1,2-Dibromo-3-chloropropane	<40	<40
1,2-Dibromoethane	<20	<20
Dibromomethane	<20	<20
Trans-1,4-dichloro-2-butene	<40	<40
Dichlorodifluoromethane	<40	<40
1,1-Dichloroethane	<5	<5
1,2-Dichloroethane	<5	<5
1,1-Dichloroethylene	<5	<5
Trans-1,2-dichloroethylene	<5	<5
1,2-Dichloropropane	<5	<5
Cis-1,3-dichloropropene	<5	<5
Trans-1,3-dichloropropene	<5	<5
Ethyl benzene	<5	<5
Ethyl methacrylate	<20	<20
2-Hexanone	<10	<10
Methylene chloride	<5	<5
Methyl ethyl ketone	<10	<10
Methyl iodide	<10	<10

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-02271 (6/6/90)	90-02272 (6/6/90)
Methyl isobutyl ketone	<10	<10
Pentachloroethane	<40	<40
Styrene	<5	<5
1,1,1,2-Tetrachloroethane	<20	<20
1,1,2,2-Tetrachloroethane	<5	<5
Tetrachloroethylene	<5	<5
Toluene	<5	<5
1,1,1-Trichloroethane	<5	<5
1,1,2-Trichloroethane	<5	<5
Trichloroethylene	<5	<5
Trichlorofluoromethane	<5	<5
1,2,3-Trichloropropane	<20	<20
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Xylene(total)	<5	<5
Analysis Date	6/8/90	6/8/90
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	106	112
1,4-Difluorobenzene	104	108
Chlorobenzene-D_5	126	128
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	110	107
1,2-Dichloroethane-D_4	102	101
Toluene-D_8	90	90

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st Valley Nuclear Services, Inc. P.O. Box 191, West Valley, NY 14171
n: Environmental Laboratory

CHAIN OF CUSTODY RECORD

EST VALLEY NUCLEAR SERVICES

ROJECT NAME

PURCHASE ORDER

SAMPLER SIGNATURE(S) TX [signature]

X=ANALYSIS REQUEST

STATION ID	DATE	TIME	STATION LOCATION	NO. OF CONT.	VOA (APP IX)	TOH	TOC/Phenol	ANIONS SO_4, NO_3, F,Cl	Total Metals	Soluble Metals			REMARKS
90-02269.2	6/6/90	1500	groundwater	1	X								(*) - VOAs are in duplicate, only analyze one.
90-02269.3				✓ 1		X							
90-02269.4				1			X						
90-02269.5				1				X					(*) - Metals: As, Ba, Cd, Cr, Fe, Pb, Mn, Hg, Se, Ag, Na
90-02269.6				1					X				
90-02269.7				1						X			
90-02270.2	6/6/90	1430	groundwater	2	X								
90-02270.3				✓ 1		X							
90-02270.4				1			X						
90-02270.5				1				X					
90-02270.6				1					X				
90-02270.7				1						X			

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY	COMMENTS
TX [signature]	Kelly M Howarth			
6/7/90 2117	6/7/90 2117			
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME	

WV-1155, Re

WVDP:0001106.RM

st Valley Nuclear Services, Inc. P.O. Box 191, West Valley, NY 14171
n: Environmental Laboratory

CHAIN OF CUSTODY RECORD

EST VALLEY NUCLEAR SERVICES

ROJECT NAME

PURCHASE ORDER

SAMPLER SIGNATURE(S) T X Grano

CONTAINER TYPE

X=ANALYSIS REQUEST

STATION ID	DATE	TIME	STATION LOCATION	NO. OF CONT.	VOA (APP IX)	TOH	TOC/Phenol	ANIONS SO_4, NO_3, F.Cl	Total Metals	Soluble Metals			REMARKS
90-01977.5	6/7/90	1500	groundwater	1				X					(*) - VOAs are in duplicate, only analyze one.
90-01977.6	↓	↓	↓	1					X				
90-02238.2	6/7/90	1510	groundwater	90-02281.5 2	X								
90-02238.3	↓	↓	These #'s changed for correction purposes	90-02281.3 1		X							(*) - Metals: As, Ba, Cd, Cr, Fe, Pb, Mn, Hg, Se, Ag, Na
90-02238.5	↓	↓		90-02281.5 1				X					
90-02237.2	6/7/90	1430	groundwater	90-02280.2 2	X								
90-02237.3	↓	↓	These #'s changed for correction purposes.	90-02280.3 1		X							
90-02237.4	↓	↓		90-02280.4 1			X						* C.O.C. requests
90-02237.5	↓	↓		90-02280.5 1				X					T METALS while
90-02237.6	↓	↓		90-02280.6 1					X				aliquot label
90-02237.7	↓	↓		90-02280.7 1					X		*		requests S METALS.

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY
T X Grano	Kelly M Howard		
6/7/90 2117	6/7/90 2117		
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME

COMMENTS

WV-1155, Rev. 1

* 90-02271 was RECEIVED (TRIP Blanks - 2 40ml's)
90-02272 " " (field Blanks) DSB 6/8/90

JUNE 14, 1990

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-02386.2 (6/14/90)	90-02387.2 (6/14/90)
Acetone	<10	<10
Allyl chloride	<20	<20
Benzene	<5	<5
Bromomethane	<10	<10
Bromodichloromethane	<5	<5
Bromoform	<5	<5
Carbon disulfide	<5	<5
Carbon tetrachloride	<5	<5
Chlorobenzene	<5	<5
Chloroethane	<10	<10
Chloroform	<5	<5
Chloromethane	<10	<10
Chloroprene	<20	<20
Dibromochloromethane	<5	<5
1,2-Dibromo-3-chloropropane	<40	<40
1,2-Dibromoethane	<20	<20
Dibromomethane	<20	<20
Trans-1,4-dichloro-2-butene	<40	<40
Dichlorodifluoromethane	<40	<40
1,1-Dichloroethane	<5	<5
1,2-Dichloroethane	<5	<5
1,1-Dichloroethylene	<5	<5
Trans-1,2-dichloroethylene	<5	<5
1,2-Dichloropropane	<5	<5
Cis-1,3-dichloropropene	<5	<5
Trans-1,3-dichloropropene	<5	<5
Ethyl benzene	<5	<5
Ethyl methacrylate	<20	<20
2-Hexanone	<10	<10
Methylene chloride	<5	<5
Methyl ethyl ketone	<10	<10
Methyl iodide	<10	<10

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-02386.2 (6/14/90)	90-02387.2 (6/14/90)
Methyl isobutyl ketone	<10	<10
Pentachloroethane	<40	<40
Styrene	<5	<5
1,1,1,2-Tetrachloroethane	<20	<20
1,1,2,2-Tetrachloroethane	<5	<5
Tetrachloroethylene	<5	<5
Toluene	<5	<5
1,1,1-Trichloroethane	31	<5
1,1,2-Trichloroethane	<5	<5
Trichloroethylene	<5	<5
Trichlorofluoromethane	<5	<5
1,2,3-Trichloropropane	<20	<20
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Xylene(total)	<5	<5
Analysis Date	6/18/90	6/18/90
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	95	95
1,4-Difluorobenzene	94	94
Chlorobenzene-D_5	92	92
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	104	104
1,2-Dichloroethane-D_4	99	103
Toluene-D_8	103	104

I.D. #90-1139
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t Valley Nuclear Services, Inc. P.O. Box 191, West Valley, NY 1..71
n: Environmental Laboratory

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CHAIN OF CUSTODY RECORD

EST VALLEY NUCLEAR SERVICES

ROJECT NAME

PURCHASE ORDER 34408

AMPLER SIGNATURE(S) William N. Kerr

X=ANALYSIS REQUEST

STATION ID	DATE	TIME	STATION LOCATION	NO. OF CONT.	VOA (APP IX)	TOH	TOC/Phenol	ANIONS SO_4, NO_3, F, Cl	Total Metals	Soluble Metals			REMARKS
90-02387.2	6/14/90	1100	008	2	X								(*) - VOAs are in duplicate, only analyze one.
90-02387.3				1		X							
90-02387.4				1			X						
90-02387.5				1				X					(*) - Metals: As, Ba, Cd, Cr, Fe, Pb, Mn, Hg, Se, Ag, Na
90-02387.6				1					X				
90-02387.7				1						X			
90-02386.2	6/14/90	1030	SEEP	2	X								
90-02386.3				1		X							
90-02386.4				1			X						
90-02386.5				1				X					
90-02386.6				1					X				
90-02386.7				1						X			

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY
William N. Kerr	TX Grand	TX Grand	Joan N Bentel
6/14/90 1500	6/14/90 1500	6/14/90 1755	6/14/90 1800
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME

COMMENTS

IV-1155, Rev

JUNE 28, 1990

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-02563.2 (6/28/90)	90-02564 (6/28/90)
Methyl isobutyl ketone	<10	<10
Pentachloroethane	<40	<40
Styrene	<5	<5
1,1,1,2-Tetrachloroethane	<20	<20
1,1,2,2-Tetrachloroethane	<5	<5
Tetrachloroethylene	<5	<5
Toluene	<5	<5
1,1,1-Trichloroethane	<5	<5
1,1,2-Trichloroethane	<5	<5
Trichloroethylene	<5	<5
Trichlorofluoromethane	<5	<5
1,2,3-Trichloropropane	<20	<20
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Xylene(total)	<5	<5
Analysis Date	6/29/90	6/29/90
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	95	92
1,4-Difluorobenzene	97	92
Chlorobenzene-D_5	96	89
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	102	103
1,2-Dichloroethane-D_4	95	95
Toluene-D_8	101	103

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE)	
	90-02563.2 (6/28/90)	90-02564 (6/28/90)
Acetone	<10	<10
Allyl chloride	<20	<20
Benzene	<5	<5
Bromomethane	<10	<10
Bromodichloromethane	<5	<5
Bromoform	<5	<5
Carbon disulfide	<5	<5
Carbon tetrachloride	<5	<5
Chlorobenzene	<5	<5
Chloroethane	<10	<10
Chloroform	<5	<5
Chloromethane	<10	<10
Chloroprene	<20	<20
Dibromochloromethane	<5	<5
1,2-Dibromo-3-chloropropane	<40	<40
1,2-Dibromoethane	<20	<20
Dibromomethane	<20	<20
Trans-1,4-dichloro-2-butene	<40	<40
Dichlorodifluoromethane	<40	<40
1,1-Dichloroethane	<5	<5
1,2-Dichloroethane	<5	<5
1,1-Dichloroethylene	<5	<5
Trans-1,2-dichloroethylene	<5	<5
1,2-Dichloropropane	<5	<5
Cis-1,3-dichloropropene	<5	<5
Trans-1,3-dichloropropene	<5	<5
Ethyl benzene	<5	<5
Ethyl methacrylate	<20	<20
2-Hexanone	<10	<10
Methylene chloride	<5	<5
Methyl ethyl ketone	<10	<10
Methyl iodide	<10	<10

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-02565 (6/28/90)	90-02566.2 (6/28/90)
Acetone	<10	<10
Allyl chloride	<20	<20
Benzene	<5	<5
Bromomethane	<10	<10
Bromodichloromethane	<5	<5
Bromoform	<5	<5
Carbon disulfide	<5	<5
Carbon tetrachloride	<5	<5
Chlorobenzene	<5	<5
Chloroethane	<10	<10
Chloroform	<5	<5
Chloromethane	<10	<10
Chloroprene	<20	<20
Dibromochloromethane	<5	<5
1,2-Dibromo-3-chloropropane	<40	<40
1,2-Dibromoethane	<20	<20
Dibromomethane	<20	<20
Trans-1,4-dichloro-2-butene	<40	<40
Dichlorodifluoromethane	<40	<40
1,1-Dichloroethane	<5	<5
1,2-Dichloroethane	<5	<5
1,1-Dichloroethylene	<5	<5
Trans-1,2-dichloroethylene	<5	<5
1,2-Dichloropropane	<5	<5
Cis-1,3-dichloropropene	<5	<5
Trans-1,3-dichloropropene	<5	<5
Ethyl benzene	<5	<5
Ethyl methacrylate	<20	<20
2-Hexanone	<10	<10
Methylene chloride	<5	<5
Methyl ethyl ketone	<10	<10
Methyl iodide	<10	<10

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-02565 (6/28/90)	90-02566.2 (6/28/90)
Methyl isobutyl ketone	<10	<10
Pentachloroethane	<40	<40
Styrene	<5	<5
1,1,1,2-Tetrachloroethane	<20	<20
1,1,2,2-Tetrachloroethane	<5	<5
Tetrachloroethylene	<5	<5
Toluene	<5	<5
1,1,1-Trichloroethane	<5	27
1,1,2-Trichloroethane	<5	<5
Trichloroethylene	<5	<5
Trichlorofluoromethane	<5	<5
1,2,3-Trichloropropane	<20	<20
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Xylene(total)	<5	<5
Analysis Date	6/29/90	6/29/90
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	96	95
1,4-Difluorobenzene	87	97
Chlorobenzene-D_5	87	97
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	93	100
1,2-Dichloroethane-D_4	95	96
Toluene-D_8	104	102

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-02567 (6/28/90)	90-02568.2 (6/28/90)
Acetone	<10	56
Allyl chloride	<20	<20
Benzene	<5	<5
Bromomethane	<10	<10
Bromodichloromethane	<5	<5
Bromoform	<5	<5
Carbon disulfide	<5	<5
Carbon tetrachloride	<5	<5
Chlorobenzene	<5	<5
Chloroethane	<10	<10
Chloroform	<5	<5
Chloromethane	<10	<10
Chloroprene	<20	<20
Dibromochloromethane	<5	<5
1,2-Dibromo-3-chloropropane	<40	<40
1,2-Dibromoethane	<20	<20
Dibromomethane	<20	<20
Trans-1,4-dichloro-2-butene	<40	<40
Dichlorodifluoromethane	<40	<40
1,1-Dichloroethane	<5	<5
1,2-Dichloroethane	<5	<5
1,1-Dichloroethylene	<5	<5
Trans-1,2-dichloroethylene	<5	<5
1,2-Dichloropropane	<5	<5
Cis-1,3-dichloropropene	<5	<5
Trans-1,3-dichloropropene	<5	<5
Ethyl benzene	<5	<5
Ethyl methacrylate	<20	<20
2-Hexanone	<10	<10
Methylene chloride	<5	<5
Methyl ethyl ketone	<10	<10
Methyl iodide	<10	<10

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-02567 (6/28/90)	90-02586.2 (6/28/90)
Methyl isobutyl ketone	<10	<10
Pentachloroethane	<40	<40
Styrene	<5	<5
1,1,1,2-Tetrachloroethane	<20	<20
1,1,2,2-Tetrachloroethane	<5	<5
Tetrachloroethylene	<5	<5
Toluene	<5	<5
1,1,1-Trichloroethane	28	<5
1,1,2-Trichloroethane	<5	<5
Trichloroethylene	<5	<5
Trichlorofluoromethane	<5	<5
1,2,3-Trichloropropane	<20	<20
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Xylene(total)	<5	<5
Analysis Date	6/29/90	6/29/90
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	98	98
1,4-Difluorobenzene	97	98
Chlorobenzene-D_5	97	98
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	102	106
1,2-Dichloroethane-D_4	95	105
Toluene-D_8	101	105

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t Valley Nuclear Services, Inc. P.O. Box 191, West Valley, NY 14171
n: Environmental Laboratory

CHAIN OF CUSTODY RECORD

EST VALLEY NUCLEAR SERVICES

ROJECT NAME

PURCHASE ORDER

AMPLER SIGNATURE(S) William N Kee

CONTAINER TYPE

X=ANALYSIS REQUEST

STATION ID	DATE	TIME	STATION LOCATION	NO. OF CONT.	VOA (APP IX)	TOH	TOC/Phenol	ANIONS SO_4, NO_3, F,Cl	Total Metals	Soluble Metals			REMARKS
90-02563.2	6/28/90	1130	4-WNW 86-10 groundwater	2	X								(*) - VOAs are in duplicate, only analyze one.
90-02563.3				1		X							(*)
90-02563.4				1			X						
90-02563.5				1				X					(*) - Metals: As, Ba, Cd, Cr, Fe, Pb, Mn, Hg, Se, Ag, Na
90-02563.6				1					X				
90-02563.7				1						X			
90-02564	6/28/90	1315	WNDSEEP-1 groundwater	2	X								✓ VOA [illegible]
90-02565		1330	WNDSEEP-2	2	X								DUPLICATE [illegible] SHOULD [illegible]
90-02566.2		1225	WNGSEEP	2	X								BY GC/MS [illegible]
90-02567	6/28/90		WNGSEEP-U	2	X								ME OTHER [illegible] WOULD BE ANALYZED [illegible] GC
90-02568.2		1335	WNBSEEP (Blank)	2	X								NOTE: SEE [illegible] re: 1 week turnaround

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY
William N. Kee	Kim M. Alessandro	Kim M. Alessandro	Dawn A Parada
6/28/90 1435	6/28/90 1435	6/28/90 1735	6/28/90 18:00
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME

COMMENTS

WV-1155, Re

JULY 5, 1990

AQEUOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-02630.1 (7/5/90)	90-02631.1 (7/5/90)
Acetone	<10	<10
Allyl chloride	<20	<20
Benzene	<5	<5
Bromomethane	<10	<10
Bromodichloromethane	<5	<5
Bromoform	<5	<5
Carbon disulfide	<5	<5
Carbon tetrachloride	<5	<5
Chlorobenzene	<5	<5
Chloroethane	<10	<10
Chloroform	<5	<5
Chloromethane	<10	<10
Chloroprene	<20	<20
Dibromochloromethane	<5	<5
1,2-Dibromo-3-chloropropane	<40	<40
1,2-Dibromoethane	<20	<20
Dibromomethane	<20	<20
Trans-1,4-dichloro-2-butene	<40	<40
Dichlorodifluoromethane	<40	<40
1,1-Dichloroethane	<5	<5
1,2-Dichloroethane	<5	<5
1,1-Dichloroethylene	<5	<5
Trans-1,2-dichloroethylene	<5	<5
1,2-Dichloropropane	<5	<5
Cis-1,3-dichloropropene	<5	<5
Trans-1,3-dichloropropene	<5	<5
Ethyl benzene	<5	<5
Ethyl methacrylate	<20	<20
2-Hexanone	<10	<10
Methylene chloride	<5	<5
Methyl ethyl ketone	<10	<10
Methyl iodide	<10	<10

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-02630.1 (7/5/90)	90-02631.1 (7/5/90)
Methyl isobutyl ketone	<10	<10
Pentachloroethane	<40	<40
Styrene	<5	<5
1,1,1,2-Tetrachloroethane	<20	<20
1,1,2,2-Tetrachloroethane	<5	<5
Tetrachloroethylene	<5	<5
Toluene	<5	<5
1,1,1-Trichloroethane	<5	26
1,1,2-Trichloroethane	<5	<5
Trichloroethylene	<5	<5
Trichlorofluoromethane	<5	<5
1,2,3-Trichloropropane	<20	<20
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Xylene(total)	<5	<5
Analysis Date	7/7/90	7/7/90
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	102	101
1,4-Difluorobenzene	99	100
Chlorobenzene-D_5	100	100
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	106	104
1,2-Dichloroethane-D_4	89	89
Toluene-D_8	100	99

AQEUOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-02632 (7/5/90)	90-02633 (7/5/90)
Acetone	<10	<10
Allyl chloride	<20	<20
Benzene	<5	<5
Bromomethane	<10	<10
Bromodichloromethane	<5	<5
Bromoform	<5	<5
Carbon disulfide	<5	<5
Carbon tetrachloride	<5	<5
Chlorobenzene	<5	<5
Chloroethane	<10	<10
Chloroform	<5	<5
Chloromethane	<10	<10
Chloroprene	<20	<20
Dibromochloromethane	<5	<5
1,2-Dibromo-3-chloropropane	<40	<40
1,2-Dibromoethane	<20	<20
Dibromomethane	<20	<20
Trans-1,4-dichloro-2-butene	<40	<40
Dichlorodifluoromethane	<40	<40
1,1-Dichloroethane	<5	<5
1,2-Dichloroethane	<5	<5
1,1-Dichloroethylene	<5	<5
Trans-1,2-dichloroethylene	<5	<5
1,2-Dichloropropane	<5	<5
Cis-1,3-dichloropropene	<5	<5
Trans-1,3-dichloropropene	<5	<5
Ethyl benzene	<5	<5
Ethyl methacrylate	<20	<20
2-Hexanone	<10	<10
Methylene chloride	<5	<5
Methyl ethyl ketone	<10	<10
Methyl iodide	<10	<10

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

UNFRCDN

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-02632 (7/5/90)	90-02633 (7/5/90)
Methyl isobutyl ketone	<10	<10
Pentachloroethane	<40	<40
Styrene	<5	<5
1,1,1,2-Tetrachloroethane	<20	<20
1,1,2,2-Tetrachloroethane	<5	<5
Tetrachloroethylene	<5	<5
Toluene	<5	<5
1,1,1-Trichloroethane	<5	<5
1,1,2-Trichloroethane	<5	<5
Trichloroethylene	<5	<5
Trichlorofluoromethane	<5	<5
1,2,3-Trichloropropane	<20	<20
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Xylene(total)	<5	<5
Analysis Date	7/6/90	7/7/90
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	102	102
1,4-Difluorobenzene	101	101
Chlorobenzene-D_5	100	101
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	105	104
1,2-Dichloroethane-D_4	88	88
Toluene-D_8	100	98

AQEUOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-02634 (7/5/90)	90-02635 (7/5/90)
Acetone	<10	<10
Allyl chloride	<20	<20
Benzene	<5	<5
Bromomethane	<10	<10
Bromodichloromethane	<5	<5
Bromoform	<5	<5
Carbon disulfide	<5	<5
Carbon tetrachloride	<5	<5
Chlorobenzene	<5	<5
Chloroethane	<10	<10
Chloroform	<5	<5
Chloromethane	<10	<10
Chloroprene	<20	<20
Dibromochloromethane	<5	<5
1,2-Dibromo-3-chloropropane	<40	<40
1,2-Dibromoethane	<20	<20
Dibromomethane	<20	<20
Trans-1,4-dichloro-2-butene	<40	<40
Dichlorodifluoromethane	<40	<40
1,1-Dichloroethane	<5	<5
1,2-Dichloroethane	<5	<5
1,1-Dichloroethylene	<5	<5
Trans-1,2-dichloroethylene	<5	<5
1,2-Dichloropropane	<5	<5
Cis-1,3-dichloropropene	<5	<5
Trans-1,3-dichloropropene	<5	<5
Ethyl benzene	<5	<5
Ethyl methacrylate	<20	<20
2-Hexanone	<10	<10
Methylene chloride	<5	<5
Methyl ethyl ketone	<10	<10
Methyl iodide	<10	<10

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

90-Series
WWW-804

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-02634 (7/5/90)	90-02635 (7/5/90)
Methyl isobutyl ketone	<10	<10
Pentachloroethane	<40	<40
Styrene	<5	<5
1,1,1,2-Tetrachloroethane	<20	<20
1,1,2,2-Tetrachloroethane	<5	<5
Tetrachloroethylene	<5	<5
Toluene	<5	<5
1,1,1-Trichloroethane	<5	<5
1,1,2-Trichloroethane	<5	<5
Trichloroethylene	<5	<5
Trichlorofluoromethane	<5	<5
1,2,3-Trichloropropane	<20	<20
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Xylene(total)	<5	<5
Analysis Date	7/7/90	7/7/90
Internal Standards		
Level Added = 50 ug/l		
(% Recovery)		
Bromochloromethane	102	102
1,4-Difluorobenzene	100	100
Chlorobenzene-D_5	100	100
Surrogates		
Level Added = 50 ug/l		
(% Recovery)		
4-Bromofluorobenzene	103	104
1,2-Dichloroethane-D_4	89	89
Toluene-D_8	100	100

AQUEOUS MATRIX
METHOD 601 - PURGEABLE HALOCARBONS

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-02630.1 (7/5/90)	90-02631.1 (7/5/90)	90-02632 (7/5/90)
Bromodichloromethane	<0.2	<0.2	<0.2
Bromoform	<1	<1	<1
Bromomethane	<2	<2	<2
Carbon tetrachloride	<0.2	<0.2	<0.2
Chlorobenzene	<1	<1	<1
Chloroethane	<2	<2	<2
2-Chloroethylvinyl ether	<2	<2	<2
Chloroform	<0.2	<0.2	<0.2
Chloromethane	<2	<2	<2
Dibromochloromethane	<0.2	<0.2	<0.2
1,2-Dichlorobenzene	<0.2	<0.2	<0.2
1,3-Dichlorobenzene	<0.2	<0.2	<0.2
1,4-Dichlorobenzene	<0.2	<0.2	<0.2
1,1-Dichloroethane	<0.2	<0.2	<0.2
1,2-Dichloroethane	<0.2	<0.2	<0.2
1,1-Dichloroethene	<0.2	<0.2	<0.2
trans-1,2-Dichloroethene	<0.2	<0.2	<0.2
1,2-Dichloropropane	<0.2	0.5	<0.2
cis-1,3-Dichloropropene	<0.4	<0.4	<0.4
trans-1,3-Dichloropropene	<0.2	<0.2	<0.2
Methylene chloride	<0.2	<0.2	3.3
1,1,2,2-Tetrachloroethane	<0.2	<0.2	<0.2
Tetrachloroethene	<0.2	<0.2	<0.2
1,1,1-Trichloroethane	<0.2	23	<0.2
1,1,2-Trichloroethane	<0.2	<0.2	<0.2
Trichloroethene	<0.2	<0.2	<0.2
Vinyl chloride	<2	<2	<2
Analysis Date	7/9/90	7/9/90	7/9/90
Surrogate Compound Level Added = 15 ug/l (% Recovery) Bromochloromethane	94	85	111

AQUEOUS MATRIX
METHOD 601 - PURGEABLE HALOCARBONS

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-02633 (7/5/90)	90-02635 (7/5/90)	90-02636 (7/5/90)
Bromodichloromethane	<0.2	<0.2	<0.2
Bromoform	<1	<1	<1
Bromomethane	<2	<2	30 **
Carbon tetrachloride	<0.2	<0.2	<0.2
Chlorobenzene	<1	<1	<1
Chloroethane	<2	<2	<2
2-Chloroethylvinyl ether	<2	<2	<2
Chloroform	<0.2	<0.2	<0.2
Chloromethane	<2	<2	23 *
Dibromochloromethane	<0.2	<0.2	<0.2
1,2-Dichlorobenzene	<0.2	<0.2	<0.2
1,3-Dichlorobenzene	<0.2	<0.2	<0.2
1,4-Dichlorobenzene	<0.2	<0.2	<0.2
1,1-Dichloroethane	<0.2	<0.2	<0.2
1,2-Dichloroethane	<0.2	<0.2	0.65
1,1-Dichloroethene	<0.2	<0.2	<0.2
trans-1,2-Dichloroethene	<0.2	<0.2	<0.2
1,2-Dichloropropane	<0.2	<0.2	<0.2
cis-1,3-Dichloropropene	<0.4	<0.4	<0.4
trans-1,3-Dichloropropene	<0.2	<0.2	<0.2
Methylene chloride	<0.2	<0.2	1.3
1,1,2,2-Tetrachloroethane	<0.2	<0.2	<0.2
Tetrachloroethene	<0.2	<0.2	<0.2
1,1,1-Trichloroethane	<0.2	<0.2	<0.2
1,1,2-Trichloroethane	<0.2	<0.2	<0.2
Trichloroethene	<0.2	<0.2	<0.2
Vinyl chloride	<2	<2	<2
Analysis Date	7/9/90	7/9/90	7/9/90
Surrogate Compound Level Added = 15 ug/l (% Recovery)			
Bromochloromethane	98	102	112

* Chromatographically, Chloromethane and Vinyl Chloride coelute. Therefore, the reported value is an "and/or" value.

** Chromatographically, Chloroethane and Bromomethane coelute. Therefore, the reported value is an "and/or" value.

AQUEOUS MATRIX
METHOD 601 - PURGEABLE HALOCARBONS

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-02637 (7/5/90)	90-02638 (7/5/90)	90-02639 (7/5/90)
Bromodichloromethane	<0.2	<0.2	<0.2
Bromoform	<1	<1	<1
Bromomethane	3.2 **	<2	<2
Carbon tetrachloride	<0.2	<0.2	<0.2
Chlorobenzene	<1	<1	<1
Chloroethane	<2	<2	<2
2-Chloroethylvinyl ether	<2	<2	<2
Chloroform	<0.2	<0.2	<0.2
Chloromethane	4.6 **	<2	<2
Dibromochloromethane	<0.2	<0.2	<0.2
1,2-Dichlorobenzene	<0.2	<0.2	<0.2
1,3-Dichlorobenzene	<0.2	<0.2	<0.2
1,4-Dichlorobenzene	<0.2	<0.2	<0.2
1,1-Dichloroethane	<0.2	<0.2	<0.2
1,2-Dichloroethane	0.62	<0.2	0.56
1,1-Dichloroethene	<0.2	<0.2	<0.2
trans-1,2-Dichloroethene	<0.2	0.24	<0.2
1,2-Dichloropropane	0.49	<0.2	0.44
cis-1,3-Dichloropropene	<0.4	<0.4	<0.4
trans-1,3-Dichloropropene	<0.2	<0.2	<0.2
Methylene chloride	<0.2	<0.2	1.4
1,1,2,2-Tetrachloroethane	<0.2	<0.2	<0.2
Tetrachloroethene	<0.2	<0.2	<0.2
1,1,1-Trichloroethane	<0.2	<0.2	<0.2
1,1,2-Trichloroethane	<0.2	<0.2	<0.2
Trichloroethene	<0.2	<0.2	<0.2
Vinyl chloride	<2	<2	<2
Analysis Date	7/10/90	7/10/90	7/10/90
Surrogate Compound Level Added = 15 ug/l (% Recovery)			
Bromochloromethane	114	103	105

* Chromatographically, Chloromethane and Vinyl Chloride coelute. Therefore, the reported value is an "and/or" value.

** Chromatographically, Chloroethane and Bromomethane coelute. Therefore, the reported value is an "and/or" value.

AQUEOUS MATRIX
METHOD 601 - PURGEABLE HALOCARBONS

Field Blk

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE)		
	90-02640 (7/5/90)	Method Blank	Method Blank
Bromodichloromethane	<0.2	<0.2	<0.2
Bromoform	<1	<1	<1
Bromomethane	<2	<2	<2
Carbon tetrachloride	<0.2	<0.2	<0.2
Chlorobenzene	<1	<1	<1
Chloroethane	<2	<2	<2
2-Chloroethylvinyl ether	<2	<2	<2
Chloroform	<0.2	<0.2	<0.2
Chloromethane	<2	<2	<2
Dibromochloromethane	<0.2	<0.2	<0.2
1,2-Dichlorobenzene	<0.2	<0.2	<0.2
1,3-Dichlorobenzene	<0.2	<0.2	<0.2
1,4-Dichlorobenzene	<0.2	<0.2	<0.2
1,1-Dichloroethane	<0.2	<0.2	<0.2
1,2-Dichloroethane	<0.2	<0.2	<0.2
1,1-Dichloroethene	<0.2	<0.2	<0.2
trans-1,2-Dichloroethene	<0.2	<0.2	<0.2
1,2-Dichloropropane	0.51	<0.2	<0.2
cis-1,3-Dichloropropene	<0.4	<0.4	<0.4
trans-1,3-Dichloropropene	<0.2	<0.2	<0.2
Methylene chloride	3.1	<0.2	<0.2
1,1,2,2-Tetrachloroethane	<0.2	<0.2	<0.2
Tetrachloroethene	<0.2	<0.2	<0.2
1,1,1-Trichloroethane	<0.2	<0.2	<0.2
1,1,2-Trichloroethane	<0.2	<0.2	<0.2
Trichloroethene	<0.2	<0.2	<0.2
Vinyl chloride	<2	<2	<2
Analysis Date	7/10/90	7/9/90	7/10/90
Surrogate Compound Level Added = 15 ug/l (% Recovery) Bromochloromethane	104	100	100

QUALITY CONTROL INFORMATION - ACCURACY
AQUEOUS MATRIX
METHOD 8240 - VOLATILES

SAMPLE IDENTIFICATION 90-02636 Matrix Spike

COMPOUND	NANOGRAMS OF SPIKE	PERCENT RECOVERY
Benzene	250	93
Chlorobenzene	250	100
1,1-Dichloroethylene	250	77
Toluene	250	95
Trichloroethylene	250	83
Analysis Date	7/7/90	
Internal Standards		
Level Added = 50 ug/l		
(% Recovery)		
Bromochloromethane	101	
1,4-Difluorobenzene	101	
Chlorobenzene-D_5	101	
Surrogates		
Level Added = 50 ug/l		
(% Recovery)		
4-Bromofluorobenzene	101	
1,2-Dichloroethane-D_4	89	
Toluene-D_8	99	

QUALITY CONTROL INFORMATION - PRECISION
AQUEOUS MATRIX
SOLUBLE METALS

COMPOUND (Units of Measure = mg/l)	METHOD NUMBER	SAMPLE IDENTIFICATION	VALUE 1	VALUE 2	MEAN	STANDARD DEVIATION
Soluble Arsenic	206.2	*	<0.005	<0.005	<0.005	-
Soluble Barium	200.7		<0.05	<0.05	<0.05	-
Soluble Cadmium	200.7		<0.005	<0.005	<0.005	-
Soluble Chromium	200.7		<0.01	<0.01	<0.01	-
Soluble Iron	200.7		<0.05	<0.05	<0.05	-
Soluble Lead	239.2		0.006	0.009	0.008	0.0021
Soluble Manganese	200.7		<0.005	<0.005	<0.005	-
Soluble Mercury	245.1		<0.0004	<0.0004	<0.0004	-
Soluble Selenium	270.2		<0.005	<0.005	<0.005	-
Soluble Silver	200.7		<0.01	<0.01	<0.01	-
Soluble Sodium	200.7		366	311	339	38.9

QUALITY CONTROL INFORMATION - ACCURACY
AQUEOUS MATRIX
SOLUBLE METALS

COMPOUND	METHOD NUMBER	SAMPLE IDENTIFICATION	MICROGRAMS OF SPIKE	PERCENT RECOVERY
Soluble Arsenic	206.2	*	50	82
Soluble Barium	200.7		5,000	96
Soluble Cadmium	200.7		500	84
Soluble Chromium	200.7		500	88
Soluble Iron	200.7		500	87
Soluble Lead	239.2		500	94
Soluble Manganese	200.7		500	86
Soluble Mercury	245.1		0.40	92
Soluble Selenium	270.2		50	84
Soluble Silver	200.7		500	84
Soluble Sodium	200.7		5,000	95

* Quality control results were generated from a sample of similar matrix at the time of analysis.

I.D. #90-1273

JULY 9, 1990

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-02663.2 (7/9/90)	90-02664 (7/9/90)
Acetone	<10	<10
Allyl chloride	<20	<20
Benzene	<5	<5
Bromomethane	<10	<10
Bromodichloromethane	<5	<5
Bromoform	<5	<5
Carbon disulfide	<5	<5
Carbon tetrachloride	<5	<5
Chlorobenzene	<5	<5
Chloroethane	<10	<10
Chloroform	<5	<5
Chloromethane	<10	<10
Chloroprene	<20	<20
Dibromochloromethane	<5	<5
1,2-Dibromo-3-chloropropane	<40	<40
1,2-Dibromoethane	<20	<20
Dibromomethane	<20	<20
Trans-1,4-dichloro-2-butene	<40	<40
Dichlorodifluoromethane	<40	<40
1,1-Dichloroethane	<5	<5
1,2-Dichloroethane	<5	<5
1,1-Dichloroethylene	<5	<5
Trans-1,2-dichloroethylene	<5	<5
1,2-Dichloropropane	<5	<5
Cis-1,3-dichloropropene	<5	<5
Trans-1,3-dichloropropene	<5	<5
Ethyl benzene	<5	<5
Ethyl methacrylate	<20	<20
2-Hexanone	<10	<10
Methylene chloride	<5	<5
Methyl ethyl ketone	<10	<10
Metnyl iodide	<10	<10

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-02663.2 (7/9/90)	90-02664 (7/9/90)
Methyl isobutyl ketone	<10	<10
Pentachloroethane	<40	<40
Styrene	<5	<5
1,1,1,2-Tetrachloroethane	<20	<20
1,1,2,2-Tetrachloroethane	<5	<5
Tetrachloroethylene	<5	<5
Toluene	<5	<5
1,1,1-Trichloroethane	28	24
1,1,2-Trichloroethane	<5	<5
Trichloroethylene	<5	<5
Trichlorofluoromethane	<5	<5
1,2,3-Trichloropropane	<20	<20
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Xylene(total)	<5	<5
Analysis Date	7/11/90	7/11/90
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	96	100
1,4-Difluorobenzene	93	95
Chlorobenzene-D_5	92	95
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	100	99
1,2-Dichloroethane-D_4	98	94
Toluene-D_8	102	102

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-02665 (7/9/90)	90-02666.2 (7/9/90)
Acetone	<10	<10
Allyl chloride	<20	<20
Benzene	<5	<5
Bromomethane	<10	<10
Bromodichloromethane	<5	<5
Bromoform	<5	<5
Carbon disulfide	<5	<5
Carbon tetrachloride	<5	<5
Chlorobenzene	<5	<5
Chloroethane	<10	<10
Chloroform	<5	<5
Chloromethane	<10	<10
Chloroprene	<20	<20
Dibromochloromethane	<5	<5
1,2-Dibromo-3-chloropropane	<40	<40
1,2-Dibromoethane	<20	<20
Dibromomethane	<20	<20
Trans-1,4-dichloro-2-butene	<40	<40
Dichlorodifluoromethane	<40	<40
1,1-Dichloroethane	<5	<5
1,2-Dichloroethane	<5	<5
1,1-Dichloroethylene	<5	<5
Trans-1,2-dichloroethylene	<5	<5
1,2-Dichloropropane	<5	<5
Cis-1,3-dichloropropene	<5	<5
Trans-1,3-dichloropropene	<5	<5
Ethyl benzene	<5	<5
Ethyl methacrylate	<20	<20
2-Hexanone	<10	<10
Methylene chloride	<5	<5
Methyl ethyl ketone	<10	<10
Methyl iodide	<10	<10

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-02665 (7/9/90)	90-02666.2 (7/9/90)
Methyl isobutyl ketone	<10	<10
Pentachloroethane	<40	<40
Styrene	<5	<5
1,1,1,2-Tetrachloroethane	<20	<20
1,1,2,2-Tetrachloroethane	<5	<5
Tetrachloroethylene	<5	<5
Toluene	<5	<5
1,1,1-Trichloroethane	28	24
1,1,2-Trichloroethane	<5	<5
Trichloroethylene	<5	<5
Trichlorofluoromethane	<5	<5
1,2,3-Trichloropropane	<20	<20
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Xylene(total)	<5	<5
Analysis Date	7/11/90	7/11/90
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	97	97
1,4-Difluorobenzene	92	93
Chlorobenzene-D_5	94	92
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	100	99
1,2-Dichloroethane-D_4	101	97
Toluene-D_8	101	103

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-02667 (7/9/90)	90-02668 (7/9/90)
Acetone	11	<10
Allyl chloride	<20	<20
Benzene	<5	<5
Bromomethane	<10	<10
Bromodichloromethane	<5	<5
Bromoform	<5	<5
Carbon disulfide	<5	<5
Carbon tetrachloride	<5	<5
Chlorobenzene	<5	<5
Chloroethane	<10	<10
Chloroform	<5	<5
Chloromethane	<10	<10
Chloroprene	<20	<20
Dibromochloromethane	<5	<5
1,2-Dibromo-3-chloropropane	<40	<40
1,2-Dibromoethane	<20	<20
Dibromomethane	<20	<20
Trans-1,4-dichloro-2-butene	<40	<40
Dichlorodifluoromethane	<40	<40
1,1-Dichloroethane	<5	<5
1,2-Dichloroethane	<5	<5
1,1-Dichloroethylene	<5	<5
Trans-1,2-dichloroethylene	<5	<5
1,2-Dichloropropane	<5	<5
Cis-1,3-dichloropropene	<5	<5
Trans-1,3-dichloropropene	<5	<5
Ethyl benzene	<5	<5
Ethyl methacrylate	<20	<20
2-Hexanone	<10	<10
Methylene chloride	<5	<5
Methyl ethyl ketone	<10	<10
Methyl iodide	<10	<10

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-02667 (7/9/90)	90-02668 (7/9/90)
Methyl isobutyl ketone	<10	<10
Pentachloroethane	<40	<40
Styrene	<5	<5
1,1,1,2-Tetrachloroethane	<20	<20
1,1,2,2-Tetrachloroethane	<5	<5
Tetrachloroethylene	<5	<5
Toluene	<5	<5
1,1,1-Trichloroethane	<5	<5
1,1,2-Trichloroethane	<5	<5
Trichloroethylene	<5	<5
Trichlorofluoromethane	<5	<5
1,2,3-Trichloropropane	<20	<20
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Xylene(total)	<5	<5
Analysis Date	7/11/90	7/11/90
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	113	104
1,4-Difluorobenzene	104	99
Chlorobenzene-D_5	103	100
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	93	96
1,2-Dichloroethane-D_4	83	89
Toluene-D_8	100	102

AQUEOUS MATRIX
SELECTED METHOD 8010- PURGEABLE HALOCARBONS

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-02667 (7/9/90)	Method Blank
Bromodichloromethane	<0.2	<0.2
Bromoform	<0.2	<0.2
Bromomethane	<1	<1
Carbon tetrachloride	<0.2	<0.2
Chlorobenzene	<0.4	<0.4
Chloroethane	<0.2	<0.2
2-Chloroethylvinyl ether	<1	<1
Chloroform	<0.2	<0.2
Chloromethane	<0.4	<0.4
Dibromochloromethane	<0.2	<0.2
1,2-Dichlorobenzene	<1	<1
1,3-Dichlorobenzene	<1	<1
1,4-Dichlorobenzene	<1	<1
1,1-Dichloroethane	<0.2	<0.2
1,2-Dichloroethane	<0.2	<0.2
1,1-Dichloroethene	<0.2	<0.2
trans-1,2-Dichloroethene	<0.2	<0.2
1,2-Dichloropropane	<0.2	<0.2
cis-1,3-Dichloropropene	<0.2	<0.2
trans-1,3-Dichloropropene	<0.2	<0.2
Methylene chloride	<0.2	<0.2
1,1,2,2-Tetrachloroethane	<0.2	<0.2
Tetrachloroethene	<0.2	<0.2
1,1,1-Trichloroethane	<0.2	<0.2
1,1,2-Trichloroethane	<0.2	<0.2
Trichloroethene	<0.2	<0.2
Vinyl chloride	<1	<1
Analysis Date	7/17/90	7/18/90
Surrogate Compound Level Added = 15 ug/l (% Recovery)		
Bromochloromethane	123	100

AQUEOUS MATRIX
METHOD 8020 - PURGEABLE AROMATICS AND ADDITIONAL COMPOUNDS

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE)	
	90-02667 (7/9/90)	Method Blank
Benzene	<1	<1
Chlorobenzene	<1	<1
1,2-Dichlorobenzene	<1	<1
1,3-Dichlorobenzene	<1	<1
1,4-Dichlorobenzene	<1	<1
Ethylbenzene	<1	<1
Toluene	<1	<1
Additional Compounds		
m-Xylene	<1	<1
o-Xylene	<1	<1
p-Xylene	<1	<1
Analysis Date	7/17/90	7/17/90
Surrogate Compound Level Added = 30 ug/l (% Recovery)		
a,a,a-Trifluorotoluene	114	100

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Valley Nuclear Services, Inc. P.O. Box 191, West Valley, NY 14171
Environmental Laboratory

CHAIN OF CUSTODY RECORD

ST VALLEY NUCLEAR SERVICES

OJECT NAME

PURCHASE ORDER

SAMPLER SIGNATURE(S) TX Grasso

CONTAINER TYPE

X=ANALYSIS REQUEST

STATION ID	DATE	TIME	STATION LOCATION	NO. OF CONT.	VOA (APP IX)	TOH	TOC/Phenol	ANIONS SO_4, NO_3, F.Cl	Total Metals	Soluble Metals			REMARKS
90-02663.2	7/9/90	1300	1-WNOSESP groundwater	2	X								
90-02663.3	↓	↓	↓	1		X							
90-02663.4	↓	↓	↓	1			X						
90-02663.5	↓	↓	↓	1				X					(*) - Metals: As, Ba, Cd, Cr, Fe, Pb, Mn, Hg, Se, Ag, Na
90-02663.6	↓	↓	↓	1					X				
90-02663.7	↓	↓	↓	1						X			
90-02664	7/9/90	1530	VOA SEP101 groundwater	2	X								*VOA's IN DUPLICATE, ANALYZE ONE BY
90-02665	↓	1300	↓ SEP102	2	X								GC/MS AND IF
													A DETECTION IS MADE, ANALYZE
													FOLLOWING ONE BY GC.
													SEE C. JONES FOR QUESTIONS
													GC (8020)

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY
TX Grasso	Donald S Brean		
7/11/90 10:05	7-11-90 10:05		
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME

COMMENTS

Info On ...

WV-1155, Rev. 1

WVDP:0001106.RM

Vall[illegible] Nuclear Services, Inc. P.O. [illegible]x 191, We[illegible] Valley, NY 14[illegible]
Environmental Laboratory

CHAIN OF CUSTODY RECORD

EST VALLEY NUCLEAR SERVICES

ROJECT NAME

PURCHASE ORDER

SAMPLER SIGNATURE(S) TX Grasso

X=ANALYSIS REQUEST

STATION ID	DATE	TIME	STATION LOCATION	NO. OF CONT.	VOA (APP IX)	TOH	TOC/Phenol	ANIONS SO_4, NO_3, F.Cl	Total Metals	Soluble Metals			REMARKS
90-02666.2	7/9/90	1300	1-W-W86-03 groundwater	2	X								
90-02666.3						X							
90-02666.4							X						
90-02666.5								X					(*) - Metals: As, Ba, Cd, Cr, Fe, Pb, Mn, Hg, Se, Ag, Na
90-02666.6									X				
90-02666.7										X			
90-02667 ~~02666~~ mm	7/9/90	1300	Field Blank groundwater	2	X								* VOA'S IN DUPLICATE, ANALYZE FIRST
90-02668	7/9/90	1300	↓ T-V Blank	2	X								ONE BY GC/MS AND IF A
													DETECTION IS MADE, ANALYZE FOLLOWING
													ONE BY GC.
													SEE C. JONES FOR QUESTIONS

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY	COMMENTS
TX Grasso	Donald S Bean		[illegible]	
7/11/90 10:05	7-11-90 10:05		[illegible]	
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME	

WV-1155, Rev. 1

SEPTEMBER 24, 1990

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-04085.2 (9/24/90)	90-04094.2 (9/24/90)
Acetone	<10	<10
Allyl chloride	<20	<20
Benzene	<5	<5
Bromomethane	<10	<10
Bromodichloromethane	<5	<5
Bromoform	<5	<5
Carbon disulfide	<5	<5
Carbon tetrachloride	<5	<5
Chlorobenzene	<5	<5
Chloroethane	<10	<10
Chloroform	<5	<5
Chloromethane	<10	<10
Chloroprene	<20	<20
Dibromochloromethane	<5	<5
1,2-Dibromo-3-chloropropane	<40	<40
1,2-Dibromoethane	<20	<20
Dibromomethane	<20	<20
Trans-1,4-dichloro-2-butene	<40	<40
Dichlorodifluoromethane	<40	<40
1,1-Dichloroethane	<5	<5
1,2-Dichloroethane	<5	<5
1,1-Dichloroethylene	<5	<5
Trans-1,2-dichloroethylene	<5	<5
1,2-Dichloropropane	<5	<5
Cis-1,3-dichloropropene	<5	<5
Trans-1,3-dichloropropene	<5	<5
Ethyl benzene	<5	<5
Ethyl methacrylate	<20	<20
2-Hexanone	<10	<10
Methylene chloride	<5	<5
Methyl ethyl ketone	<10	<10
Methyl iodide	<10	<10

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-04085.2 (9/24/90)	90-04094.2 (9/24/90)
Methyl isobutyl ketone	<10	<10
Pentachloroethane	<40	<40
Styrene	<5	<5
1,1,1,2-Tetrachloroethane	<20	<20
1,1,2,2-Tetrachloroethane	<5	<5
Tetrachloroethylene	<5	<5
Toluene	<5	<5
1,1,1-Trichloroethane	20	<5
1,1,2-Trichloroethane	<5	<5
Trichloroethylene	<5	<5
Trichlorofluoromethane	<5	<5
1,2,3-Trichloropropane	<20	<20
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Xylene(total)	<5	<5
Analysis Date	9/26/90	9/26/90
Internal Standards		
Level Added = 50 ug/l		
(% Recovery)		
Bromochloromethane	80	82
1,4-Difluorobenzene	82	82
Chlorobenzene-D_5	77	77
Surrogates		
Level Added = 50 ug/l		
(% Recovery)		
4-Bromofluorobenzene	101	100
1,2-Dichloroethane-D_4	93	92
Toluene-D_8	103	109

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-04095 (9/24/90)	90-04096 (9/24/90)
Acetone	15	15
Allyl chloride	<20	<20
Benzene	<5	<5
Bromomethane	<10	<10
Bromodichloromethane	<5	<5
Bromoform	<5	<5
Carbon disulfide	<5	<5
Carbon tetrachloride	<5	<5
Chlorobenzene	<5	<5
Chloroethane	<10	<10
Chloroform	<5	<5
Chloromethane	<10	<10
Chloroprene	<20	<20
Dibromochloromethane	<5	<5
1,2-Dibromo-3-chloropropane	<40	<40
1,2-Dibromoethane	<20	<20
Dibromomethane	<20	<20
Trans-1,4-dichloro-2-butene	<40	<40
Dichlorodifluoromethane	<40	<40
1,1-Dichloroethane	<5	<5
1,2-Dichloroethane	<5	<5
1,1-Dichloroethylene	<5	<5
Trans-1,2-dichloroethylene	<5	<5
1,2-Dichloropropane	<5	<5
Cis-1,3-dichloropropene	<5	<5
Trans-1,3-dichloropropene	<5	<5
Ethyl benzene	<5	<5
Ethyl methacrylate	<20	<20
2-Hexanone	<10	<10
Methylene chloride	<5	<5
Methyl ethyl ketone	<10	<10
Methyl iodide	<10	<10

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-04095 (9/24/90)	90-04096 (9/24/90)
Methyl isobutyl ketone	<10	<10
Pentachloroethane	<40	<40
Styrene	<5	<5
1,1,1,2-Tetrachloroethane	<20	<20
1,1,2,2-Tetrachloroethane	<5	<5
Tetrachloroethylene	<5	<5
Toluene	<5	<5
1,1,1-Trichloroethane	<5	<5
1,1,2-Trichloroethane	<5	<5
Trichloroethylene	<5	<5
Trichlorofluoromethane	<5	<5
1,2,3-Trichloropropane	<20	<20
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Xylene(total)	<5	<5
Analysis Date	9/26/90	9/25/90
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	85	87
1,4-Difluorobenzene	89	90
Chlorobenzene-D_5	84	86
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	103	101
1,2-Dichloroethane-D_4	91	89
Toluene-D_8	103	102

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-04079.2 (9/24/90)	90-04085.2 (9/24/90)
Acetone	<10	<10
Allyl chloride	<20	<20
Benzene	<5	<5
Bromomethane	<10	<10
Bromodichloromethane	<5	<5
Bromoform	<5	<5
Carbon disulfide	<5	<5
Carbon tetrachloride	<5	<5
Chlorobenzene	<5	<5
Chloroethane	<10	<10
Chloroform	<5	<5
Chloromethane	<10	<10
Chloroprene	<20	<20
Dibromochloromethane	<5	<5
1,2-Dibromo-3-chloropropane	<40	<40
1,2-Dibromoethane	<20	<20
Dibromomethane	<20	<20
Trans-1,4-dichloro-2-butene	<40	<40
Dichlorodifluoromethane	<40	<40
1,1-Dichloroethane	<5	<5
1,2-Dichloroethane	<5	<5
1,1-Dichloroethylene	<5	<5
Trans-1,2-dichloroethylene	<5	<5
1,2-Dichloropropane	<5	<5
Cis-1,3-dichloropropene	<5	<5
Trans-1,3-dichloropropene	<5	<5
Ethyl benzene	<5	<5
Ethyl methacrylate	<20	<20
2-Hexanone	<10	<10
Methylene chloride	<5	<5
Methyl ethyl ketone	<10	<10
Methyl iodide	<10	<10

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-04079.2 (9/24/90)	90-04085.2 (9/24/90)
Methyl isobutyl ketone	<10	<10
Pentachloroethane	<40	<40
Styrene	<5	<5
1,1,1,2-Tetrachloroethane	<20	<20
1,1,2,2-Tetrachloroethane	<5	<5
Tetrachloroethylene	<5	<5
Toluene	<5	<5
1,1,1-Trichloroethane	<5	20
1,1,2-Trichloroethane	<5	<5
Trichloroethylene	<5	<5
Trichlorofluoromethane	<5	<5
1,2,3-Trichloropropane	<20	<20
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Xylene(total)	<5	<5
Analysis Date	9/27/90	9/27/90
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	73	73
1,4-Difluorobenzene	75	77
Chlorobenzene-D_5	74	73
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	98	101
1,2-Dichloroethane-D_4	89	88
Toluene-D_8	99	101

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-04095 (9/24/90)	90-04096 (9/24/90)
Acetone	12	12
Allyl chloride	<20	<20
Benzene	<5	<5
Bromomethane	<10	<10
Bromodichloromethane	<5	<5
Bromoform	<5	<5
Carbon disulfide	<5	<5
Carbon tetrachloride	<5	<5
Chlorobenzene	<5	<5
Chloroethane	<10	<10
Chloroform	<5	<5
Chloromethane	<10	<10
Chloroprene	<20	<20
Dibromochloromethane	<5	<5
1,2-Dibromo-3-chloropropane	<40	<40
1,2-Dibromoethane	<20	<20
Dibromomethane	<20	<20
Trans-1,4-dichloro-2-butene	<40	<40
Dichlorodifluoromethane	<40	<40
1,1-Dichloroethane	<5	<5
1,2-Dichloroethane	<5	<5
1,1-Dichloroethylene	<5	<5
Trans-1,2-dichloroethylene	<5	<5
1,2-Dichloropropane	<5	<5
Cis-1,3-dichloropropene	<5	<5
Trans-1,3-dichloropropene	<5	<5
Ethyl benzene	<5	<5
Ethyl methacrylate	<20	<20
2-Hexanone	<10	<10
Methylene chloride	<5	<5
Methyl ethyl ketone	<10	<10
Methyl iodide	<10	<10

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-04095 (9/24/90)	90-04096 (9/24/90)
Methyl isobutyl ketone	<10	<10
Pentachloroethane	<40	<40
Styrene	<5	<5
1,1,1,2-Tetrachloroethane	<20	<20
1,1,2,2-Tetrachloroethane	<5	<5
Tetrachloroethylene	<5	<5
Toluene	<5	<5
1,1,1-Trichloroethane	<5	<5
1,1,2-Trichloroethane	<5	<5
Trichloroethylene	<5	<5
Trichlorofluoromethane	<5	<5
1,2,3-Trichloropropane	<20	<20
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Xylene(total)	<5	<5
Analysis Date	9/27/90	9/27/90
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	73	73
1,4-Difluorobenzene	75	76
Chlorobenzene-D_5	72	74
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	101	96
1,2-Dichloroethane-D_4	90	87
Toluene-D_8	96	97

West Valley Nuclear Services, Inc. P.O. Box 191, West Valley, NY 14171
Attn: Environmental Laboratory

WVDP:0001106.RM

CHAIN OF CUSTODY RECORD

WEST VALLEY NUCLEAR SERVICES

PROJECT NAME

PURCHASE ORDER

SAMPLER SIGNATURE(S) William Trembath Charles T Roesch
Will N. Ker

X=ANALYSIS REQUES

STATION ID	DATE	TIME	STATION LOCATION	NO. OF CONT.	VOA (APP IX)	TOH	TOC/Phenol	ANIONS SO_4, NO_3, F, Cl	Total Metals	Soluble Metals			REMARKS
90-04085.2	9/24/90	1430	2-Seep groundwater	2	X								(*) - VOAs are in duplicate, IF A
90-04085.3				1		X							POSITIVE DETECTION IS MADE ON ONE SAMPLE
90-04085.4				1			X						ANALYZE THE SECOND. (ANALYZE BY GC/MS ONLY
90-04085.5				1				X					(*) - Metals: As, Ba, Cd, Cr, Fe
90-04085.6				1					X				Pb, Mn, Hg, Se Ag, Na
90-04085.7				1						X			
90-04094.2	9/24/90	1515	2-83-1D groundwater	2	X								
90-04095	9/24/90	0915	Trip Blk	2	X								
90-04096	9/24/90	1410	Field Blank	2	X								

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY
Will Ker	[illegible]	C.M. Wistrand	Dave A. Parada
9/24/90 1625	9/24/90 1637	9/24/90 6:08 pm	9/24/90 1808
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME

COMMENTS

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OCTOBER 24, 1990

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-04705.2 (10/24/90)
Acetone	<10
Allyl chloride	<20
Benzene	<5
Bromomethane	<10
Bromodichloromethane	<5
Bromoform	<5
Carbon disulfide	<5
Carbon tetrachloride	<5
Chlorobenzene	<5
Chloroethane	<10
Chloroform	<5
Chloromethane	<10
Chloroprene	<20
Dibromochloromethane	<5
1,2-Dibromo-3-chloropropane	<40
1,2-Dibromoethane	<20
Dibromomethane	<20
Trans-1,4-dichloro-2-butene	<40
1,1-Dichloroethane	<5
1,2-Dichloroethane	<5
1,1-Dichloroethylene	<5
Trans-1,2-dichloroethylene	<5
1,2-Dichloropropane	<5
Cis-1,3-dichloropropene	<5
Trans-1,3-dichloropropene	<5
Ethyl benzene	<5
Ethyl methacrylate	<20
2-Hexanone	<10
Methylene chloride	<5
Methyl ethyl ketone	<10
Methyl iodide	<10

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-04705.2 (10/24/90)
Methyl isobutyl ketone	<10
Pentachloroethane	<40
Styrene	<5
1,1,1,2-Tetrachloroethane	<20
1,1,2,2-Tetrachloroethane	<5
Tetrachloroethylene	<5
Toluene	<5
1,1,1-Trichloroethane	28
1,1,2-Trichloroethane	<5
Trichloroethylene	<5
Trichlorofluoromethane	<5
1,2,3-Trichloropropane	<20
Vinyl acetate	<10
Vinyl chloride	<10
Xylene(total)	<5
Analysis Date	10/25/90
Internal Standards	
Level Added = 50 ug/l	
(% Recovery)	
Bromochloromethane	123
1,4-Difluorobenzene	128
Chlorobenzene-D_5	131
Surrogates	
Level Added = 50 ug/l	
(% Recovery)	
4-Bromofluorobenzene	99
1,2-Dichloroethane-D_4	82
Toluene-D_8	99

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-04705.2RE (10/24/90)
Acetone	<10
Allyl chloride	<20
Benzene	<5
Bromomethane	<10
Bromodichloromethane	<5
Bromoform	<5
Carbon disulfide	<5
Carbon tetrachloride	<5
Chlorobenzene	<5
Chloroethane	<10
Chloroform	<5
Chloromethane	<10
Chloroprene	<20
Dibromochloromethane	<5
1,2-Dibromo-3-chloropropane	<40
1,2-Dibromoethane	<20
Dibromomethane	<20
Trans-1,4-dichloro-2-butene	<40
1,1-Dichloroethane	<5
1,2-Dichloroethane	<5
1,1-Dichloroethylene	<5
Trans-1,2-dichloroethylene	<5
1,2-Dichloropropane	<5
Cis-1,3-dichloropropene	<5
Trans-1,3-dichloropropene	<5
Ethyl benzene	<5
Ethyl methacrylate	<20
2-Hexanone	<10
Methylene chloride	<5
Methyl ethyl ketone	<10
Methyl iodide	<10

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-04705.2RE (10/24/90)
Methyl isobutyl ketone	<10
Pentachloroethane	<40
Styrene	<5
1,1,1,2-Tetrachloroethane	<20
1,1,2,2-Tetrachloroethane	<5
Tetrachloroethylene	<5
Toluene	<5
1,1,1-Trichloroethane	23
1,1,2-Trichloroethane	<5
Trichloroethylene	<5
Trichlorofluoromethane	<5
1,2,3-Trichloropropane	<20
Vinyl acetate	<10
Vinyl chloride	<10
Xylene(total)	<5
Analysis Date	10/26/90
Internal Standards	
Level Added = 50 ug/l	
(% Recovery)	
Bromochloromethane	96
1,4-Difluorobenzene	95
Chlorobenzene-D_5	94
Surrogates	
Level Added = 50 ug/l	
(% Recovery)	
4-Bromofluorobenzene	106
1,2-Dichloroethane-D_4	94
Toluene-D_8	103

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-04707 (10/24/90)
Acetone	<10
Allyl chloride	<20
Benzene	<5
Bromomethane	<10
Bromodichloromethane	<5
Bromoform	<5
Carbon disulfide	<5
Carbon tetrachloride	<5
Chlorobenzene	<5
Chloroethane	<10
Chloroform	<5
Chloromethane	<10
Chloroprene	<20
Dibromochloromethane	<5
1,2-Dibromo-3-chloropropane	<40
1,2-Dibromoethane	<20
Dibromomethane	<20
Trans-1,4-dichloro-2-butene	<40
1,1-Dichloroethane	0.93
1,2-Dichloroethane	<5
1,1-Dichloroethylene	<5
Trans-1,2-dichloroethylene	<5
1,2-Dichloropropane	<5
Cis-1,3-dichloropropene	<5
Trans-1,3-dichloropropene	<5
Ethyl benzene	<5
Ethyl methacrylate	<20
2-Hexanone	<10
Methylene chloride	<5
Methyl ethyl ketone	<10
Methyl iodide	<10

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-04707 (10/24/90)
Methyl isobutyl ketone	<10
Pentachloroethane	<40
Styrene	<5
1,1,1,2-Tetrachloroethane	<20
1,1,2,2-Tetrachloroethane	<5
Tetrachloroethylene	<5
Toluene	<5
1,1,1-Trichloroethane	<5
1,1,2-Trichloroethane	<5
Trichloroethylene	<5
Trichlorofluoromethane	<5
1,2,3-Trichloropropane	<20
Vinyl acetate	<10
Vinyl chloride	<10
Xylene(total)	<5
Analysis Date	10/25/90
Internal Standards	
Level Added = 50 ug/l	
(% Recovery)	
Bromochloromethane	125
1,4-Difluorobenzene	128
Chlorobenzene-D_5	131
Surrogates	
Level Added = 50 ug/l	
(% Recovery)	
4-Bromofluorobenzene	100
1,2-Dichloroethane-D_4	89
Toluene-D_8	99

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-04707RE (10/24/90)
Acetone	<10
Allyl chloride	<20
Benzene	<5
Bromomethane	<10
Bromodichloromethane	<5
Bromoform	<5
Carbon disulfide	<5
Carbon tetrachloride	<5
Chlorobenzene	<5
Chloroethane	<10
Chloroform	<5
Chloromethane	<10
Chloroprene	<20
Dibromochloromethane	<5
1,2-Dibromo-3-chloropropane	<40
1,2-Dibromoethane	<20
Dibromomethane	<20
Trans-1,4-dichloro-2-butene	<40
1,1-Dichloroethane	<5
1,2-Dichloroethane	<5
1,1-Dichloroethylene	<5
Trans-1,2-dichloroethylene	<5
1,2-Dichloropropane	<5
Cis-1,3-dichloropropene	<5
Trans-1,3-dichloropropene	<5
Ethyl benzene	<5
Ethyl methacrylate	<20
2-Hexanone	<10
Methylene chloride	<5
Methyl ethyl ketone	<10
Methyl iodide	<10

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-04707RE (10/24/90)
Methyl isobutyl ketone	<10
Pentachloroethane	<40
Styrene	<5
1,1,1,2-Tetrachloroethane	<20
1,1,2,2-Tetrachloroethane	<5
Tetrachloroethylene	<5
Toluene	<5
1,1,1-Trichloroethane	<5
1,1,2-Trichloroethane	<5
Trichloroethylene	<5
Trichlorofluoromethane	<5
1,2,3-Trichloropropane	<20
Vinyl acetate	<10
Vinyl chloride	<10
Xylene(total)	<5
Analysis Date	10/26/90
Internal Standards	
Level Added = 50 ug/l	
(% Recovery)	
Bromochloromethane	177
1,4-Difluorobenzene	178
Chlorobenzene-D_5	178
Surrogates	
Level Added = 50 ug/l	
(% Recovery)	
4-Bromofluorobenzene	97
1,2-Dichloroethane-D_4	91
Toluene-D_8	99

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-04708 (10/24/90)
Acetone	<10
Allyl chloride	<20
Benzene	<5
Bromomethane	<10
Bromodichloromethane	<5
Bromoform	<5
Carbon disulfide	<5
Carbon tetrachloride	<5
Chlorobenzene	<5
Chloroethane	<10
Chloroform	<5
Chloromethane	<10
Chloroprene	<20
Dibromochloromethane	<5
1,2-Dibromo-3-chloropropane	<40
1,2-Dibromoethane	<20
Dibromomethane	<20
Trans-1,4-dichloro-2-butene	<40
1,1-Dichloroethane	<5
1,2-Dichloroethane	<5
1,1-Dichloroethylene	<5
Trans-1,2-dichloroethylene	<5
1,2-Dichloropropane	<5
Cis-1,3-dichloropropene	<5
Trans-1,3-dichloropropene	<5
Ethyl benzene	<5
Ethyl methacrylate	<20
2-Hexanone	<10
Methylene chloride	<5
Methyl ethyl ketone	<10
Methyl iodide	<10

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-04708 (10/24/90)
Methyl isobutyl ketone	<10
Pentachloroethane	<40
Styrene	<5
1,1,1,2-Tetrachloroethane	<20
1,1,2,2-Tetrachloroethane	<5
Tetrachloroethylene	<5
Toluene	<5
1,1,1-Trichloroethane	<5
1,1,2-Trichloroethane	<5
Trichloroethylene	<5
Trichlorofluoromethane	<5
1,2,3-Trichloropropane	<20
Vinyl acetate	<10
Vinyl chloride	<10
Xylene(total)	<5
Analysis Date	10/25/90
Internal Standards	
Level Added = 50 ug/l	
(% Recovery)	
Bromochloromethane	123
1,4-Difluorobenzene	123
Chlorobenzene-D_5	127
Surrogates	
Level Added = 50 ug/l	
(% Recovery)	
4-Bromofluorobenzene	96
1,2-Dichloroethane-D_4	85
Toluene-D_8	98

West Valley Nuclear Services, Inc. P.O. Box 191, West Valley, NY 14171

ENVIRONMENTAL LABORATORY SAMPLE SHIPMENT FORM --- CHAIN-OF-CUSTODY / REQUEST-FOR-ANALYSIS

External Lab Destination: Reeve Env. Lab

Purchase Order #: 3440-3

SAMPLER SIGNATURE(S)

Analysis Requested

STATION ID #	DATE	TIME	LOCATION CODE	PRES	# CONT	VOA (APPIX)	TOH	TOC / PHENOLS	ANIONS $SO_4^{=}$ NO_3^{-} F^{-} Cl^{-}	TOTAL METALS	SOLUBLE METALS		
90-04705.2	10/24/90	1500	3-WNGSEEP	HCL	2	X							
90-04705.3				H_2SO_4	1		X						
90-04705.4				H_2SO_4	1			X					
90-04705.5				Cool	1				X				
90-04705.6				HNO_3	1					X			
90-04705.7				HNO_3	1						X		
90-04677.2	10/23/90	1430	WNW831D	HCL	2	X							
90-04677.3				H_2SO_4	1		X						
90-04677.4				H_2SO_4	1			X					
90-04677.6	10/24/90	0900	WNW831D	HNO_3	1					X			
90-04677.5	10/23/90	1430	WNW831D	Cool	1				X				

* VOA s are in du

: if positive det is made one one analyze the sec by GC/MS only

TOT METALS : As, Ba, Cd, Cr, Fe, Pt Mn, Hg, Se, Ag, Na

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY	Upo
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME	Tem Conc

WVDP:0001106.RM

WV-1155

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Page 133 of 319

Valley ('ear Services, Inc. P.O. Box ...,

NMENTAL LABORATORY SAMPLE SHIPMENT FORM --- CHAIN-OF-CUSTODY / REQUEST-FOR-ANALYSIS

ernal Lab Destination:	Purchase Order #:	Analysis Requested
Env. Lab	34408	

ER SIGNATURE(S) Wilbur N. Kerr

ON ID #	DATE	TIME	LOCATION CODE	PRES	# CONT	VOA (APPIX)	TOH	TOC / PHENOLS	ANIONS SO_4 NO_3 F CL	TOTAL METALS	SOLUBLE METALS		
04707	10/24/90	0840	Trip Blank WNW8101	HCL	2	X							
04708	↓	1545	Field Blank WNW8201	HCL	2	X							
-04706.2	10/24/90	1530	3-WNSP008	HCL	2	X							
04706.3				H_2SO_4	1		X						
-04706.4				H_2SO_4	1			X					
-04706.5				cool	1				X				
04706.6				HNO_3	1					X			
04706.7	↓	↓		HNO_3	1						X		
-04716	10/24/90	0840	Trip Blank WNW8101	HCL	2	X							
04717	10/24/90	1520	Field Blank WNW8201	HCL	2	X							

* VOA s are in duplicat

: if positive detection is made one one sampl analyze the second by GC/MS only

TOT METALS : As, Ba, Cd, Cr, Fe, Pb Mn, Hg, Se, Ag, Na .

... N Kerr	Kim M. Alessandro	Kim M. Alessandro	Michael J. Mauro	Upon Sample Rece
EASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY	Temp C
90 1615	10-24-90 1615	10-24-90 1600	10-24-90 1800	Condition
E / TIME	DATE / TIME	DATE / TIME	DATE / TIME	

55

WVDP:0001106.RM

NOVEMBER 8, 1990

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

4-86-11

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-05018.2RE (11/8/90)
Acetone	<10
Acetonitrile	<100
Acrolein	<100
Acrylonitrile	<100
Allyl chloride	<20
Benzene	<5
Bromomethane	<10
Bromodichloromethane	<5
Bromoform	<5
Carbon disulfide	<5
Carbon tetrachloride	<5
Chlorobenzene	<5
Chloroethane	<10
Chloroform	<5
Chloromethane	<10
Chloroprene	<20
Dibromochloromethane	<5
1,2-Dibromo-3-chloropropane	<40
1,2-Dibromoethane	<20
Dibromomethane	<20
Trans-1,4-dichloro-2-butene	<40
1,4-Dioxane	<50
1,1-Dichloroethane	<5
1,2-Dichloroethane	<5
1,1-Dichloroethylene	<5
Trans-1,2-dichloroethylene	<5
1,2-Dichloropropane	<5
Cis-1,3-dichloropropene	<5
Trans-1,3-dichloropropene	<5
Ethyl benzene	<5
Ethyl methacrylate	<20
2-Hexanone	<10
Methylene chloride	<5
Methyl ethyl ketone	<10
Methyl iodide	<10
Proprionitrile	<5

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-05018.2RE (11/8/90)
Methyl isobutyl ketone	<10
Pentachloroethane	<40
Styrene	<5
1,1,1,2-Tetrachloroethane	<20
1,1,2,2-Tetrachloroethane	<5
Tetrachloroethylene	<5
Toluene	<5
1,1,1-Trichloroethane	<5
1,1,2-Trichloroethane	<5
Trichloroethylene	<5
Trichlorofluoromethane	<5
1,2,3-Trichloropropane	<20
Vinyl acetate	<10
Vinyl chloride	<10
Xylene(total)	<5
Analysis Date	11/9/90
Internal Standards	
Level Added = 50 ug/l	
(% Recovery)	
Bromochloromethane	114
1,4-Difluorobenzene	109
Chlorobenzene-D_5	105
Surrogates	
Level Added = 50 ug/l	
(% Recovery)	
4-Bromofluorobenzene	100
1,2-Dichloroethane-D_4	84
Toluene-D_8	101

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

4-80-12 96-11

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-04991.2 (11/8/90)	90-05018.2 (11/8/90)
Acetone	<10	<10
Acetonitrile	<100	<100
Acrolein	<100	<100
Acrylonitrile	<100	<100
Allyl chloride	<20	<20
Benzene	<5	<5
Bromomethane	<10	<10
Bromodichloromethane	<5	<5
Bromoform	<5	<5
Carbon disulfide	<5	<5
Carbon tetrachloride	<5	<5
Chlorobenzene	<5	<5
Chloroethane	<10	<10
Chloroform	<5	<5
Chloromethane	<10	<10
Chloroprene	<20	<20
Dibromochloromethane	<5	<5
1,2-Dibromo-3-chloropropane	<40	<40
1,2-Dibromoethane	<20	<20
Dibromomethane	<20	<20
Trans-1,4-dichloro-2-butene	<40	<40
1,4-Dioxane	<50	<50
1,1-Dichloroethane	<5	<5
1,2-Dichloroethane	<5	<5
1,1-Dichloroethylene	<5	<5
Trans-1,2-dichloroethylene	<5	<5
1,2-Dichloropropane	<5	<5
Cis-1,3-dichloropropene	<5	<5
Trans-1,3-dichloropropene	<5	<5
Ethyl benzene	<5	<5
Ethyl methacrylate	<20	<20
2-Hexanone	<10	<10
Methylene chloride	<5	<5
Methyl ethyl ketone	<10	<10
Methyl iodide	<10	<10
Proprionitrile	<5	<5

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 4-80-12	4-86-11
	90-04991.2 (11/8/90)	90-05018.2 (11/8/90)
Methyl isobutyl ketone	<10	<10
Pentachloroethane	<40	<40
Styrene	<5	<5
1,1,1,2-Tetrachloroethane	<20	<20
1,1,2,2-Tetrachloroethane	<5	<5
Tetrachloroethylene	<5	<5
Toluene	<5	<5
1,1,1-Trichloroethane	<5	<5
1,1,2-Trichloroethane	<5	<5
Trichloroethylene	<5	<5
Trichlorofluoromethane	<5	<5
1,2,3-Trichloropropane	<20	<20
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Xylene(total)	<5	<5
Analysis Date	11/9/90	11/9/90
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	90	97
1,4-Difluorobenzene	90	92
Chlorobenzene-D_5	90	90
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	97	95
1,2-Dichloroethane-D_4	82	83
Toluene-D_8	100	106

I.D. #90-2279
WVDP:0001106.RM

RECRA ENVIRONMENTAL, INC.

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 4-83-ID 90-05019.2 (11/8/90)	4-86-06 90-05020.2 (11/8/90)
Acetone	<10	<10
Acetonitrile	<100	<100
Acrolein	<100	<100
Acrylonitrile	<100	<100
Allyl chloride	<20	<20
Benzene	<5	<5
Bromomethane	<10	<10
Bromodichloromethane	<5	<5
Bromoform	<5	<5
Carbon disulfide	<5	<5
Carbon tetrachloride	<5	<5
Chlorobenzene	<5	<5
Chloroethane	<10	<10
Chloroform	<5	<5
Chloromethane	<10	<10
Chloroprene	<20	<20
Dibromochloromethane	<5	<5
1,2-Dibromo-3-chloropropane	<40	<40
1,2-Dibromoethane	<20	<20
Dibromomethane	<20	<20
Trans-1,4-dichloro-2-butene	<40	<40
1,4-Dioxane	<50	<50
1,1-Dichloroethane	<5	<5
1,2-Dichloroethane	<5	<5
1,1-Dichloroethylene	<5	<5
Trans-1,2-dichloroethylene	<5	<5
1,2-Dichloropropane	<5	<5
Cis-1,3-dichloropropene	<5	<5
Trans-1,3-dichloropropene	<5	<5
Ethyl benzene	<5	<5
Ethyl methacrylate	<20	<20
2-Hexanone	<10	<10
Methylene chloride	<5	<5
Methyl ethyl ketone	<10	<10
Methyl iodide	<10	<10
Proprionitrile	<5	<5

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-05019.2 (11/8/90)	90-05020.2 (11/8/90)
Methyl isobutyl ketone	<10	<10
Pentachloroethane	<40	<40
Styrene	<5	<5
1,1,1,2-Tetrachloroethane	<20	<20
1,1,2,2-Tetrachloroethane	<5	<5
Tetrachloroethylene	<5	<5
Toluene	<5	<5
1,1,1-Trichloroethane	<5	<5
1,1,2-Trichloroethane	<5	<5
Trichloroethylene	<5	<5
Trichlorofluoromethane	<5	<5
1,2,3-Trichloropropane	<20	<20
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Xylene(total)	<5	<5
Analysis Date	11/9/90	11/9/90
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	83	92
1,4-Difluorobenzene	83	83
Chlorobenzene-D_5	80	85
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	98	97
1,2-Dichloroethane-D_4	85	84
Toluene-D_8	101	99

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE)	
	90-05021.2 (11/8/90)	90-05021.2RE (11/8/90)
Acetone	<10	<10
Acetonitrile	<100	<100
Acrolein	<100	<100
Acrylonitrile	<100	<100
Allyl chloride	<20	<20
Benzene	<5	<5
Bromomethane	<10	<10
Bromodichloromethane	<5	<5
Bromoform	<5	<5
Carbon disulfide	<5	<5
Carbon tetrachloride	<5	<5
Chlorobenzene	<5	<5
Chloroethane	<10	<10
Chloroform	<5	<5
Chloromethane	<10	<10
Chloroprene	<20	<20
Dibromochloromethane	<5	<5
1,2-Dibromo-3-chloropropane	<40	<40
1,2-Dibromoethane	<20	<20
Dibromomethane	<20	<20
Trans-1,4-dichloro-2-butene	<40	<40
1,4-Dioxane	<50	<50
1,1-Dichloroethane	14	14
1,2-Dichloroethane	<5	<5
1,1-Dichloroethylene	<5	<5
Trans-1,2-dichloroethylene	<5	<5
1,2-Dichloropropane	<5	<5
Cis-1,3-dichloropropene	<5	<5
Trans-1,3-dichloropropene	<5	<5
Ethyl benzene	<5	<5
Ethyl methacrylate	<20	<20
2-Hexanone	<10	<10
Methylene chloride	<5	<5
Methyl ethyl ketone	<10	<10
Methyl iodide	<10	<10
Proprionitrile	<5	<5

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-05021.2 (11/8/90)	90-05021.2RE (11/8/90)
Methyl isobutyl ketone	<10	<10
Pentachloroethane	<40	<40
Styrene	<5	<5
1,1,1,2-Tetrachloroethane	<20	<20
1,1,2,2-Tetrachloroethane	<5	<5
Tetrachloroethylene	<5	<5
Toluene	<5	<5
1,1,1-Trichloroethane	<5	<5
1,1,2-Trichloroethane	<5	<5
Trichloroethylene	<5	<5
Trichlorofluoromethane	<5	<5
1,2,3-Trichloropropane	<20	<20
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Xylene(total)	<5	<5
Analysis Date	11/9/90	11/10/90
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	93	97
1,4-Difluorobenzene	90	90
Chlorobenzene-D_5	88	87
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	92	97
1,2-Dichloroethane-D_4	83	85
Toluene-D_8	100	102

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-05022.2 (11/8/90)	90-05022.2RE (11/8/9))
Acetone	<10	<10
Acetonitrile	<100	<100
Acrolein	<100	<100
Acrylonitrile	<100	<100
Allyl chloride	<20	<20
Benzene	<5	<5
Bromomethane	<10	<10
Bromodichloromethane	<5	<5
Bromoform	<5	<5
Carbon disulfide	<5	<5
Carbon tetrachloride	<5	<5
Chlorobenzene	<5	<5
Chloroethane	<10	<10
Chloroform	<5	<5
Chloromethane	<10	<10
Chloroprene	<20	<20
Dibromochloromethane	<5	<5
1,2-Dibromo-3-chloropropane	<40	<40
1,2-Dibromoethane	<20	<20
Dibromomethane	<20	<20
Trans-1,4-dichloro-2-butene	<40	<40
1,4-Dioxane	<50	<50
1,1-Dichloroethane	<5	<5
1,2-Dichloroethane	<5	<5
1,1-Dichloroethylene	<5	<5
Trans-1,2-dichloroethylene	<5	<5
1,2-Dichloropropane	<5	<5
Cis-1,3-dichloropropene	<5	<5
Trans-1,3-dichloropropene	<5	<5
Ethyl benzene	<5	<5
Ethyl methacrylate	<20	<20
2-Hexanone	<10	<10
Methylene chloride	<5	<5
Methyl ethyl ketone	<10	<10
Methyl iodide	<10	<10
Proprionitrile	<5	<5

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-05022.2 (11/8/90)	90-05022.2RE (11/8/90)
Methyl isobutyl ketone	<10	<10
Pentachloroethane	<40	<40
Styrene	<5	<5
1,1,1,2-Tetrachloroethane	<20	<20
1,1,2,2-Tetrachloroethane	<5	<5
Tetrachloroethylene	<5	<5
Toluene	<5	<5
1,1,1-Trichloroethane	32	26
1,1,2-Trichloroethane	<5	<5
Trichloroethylene	<5	<5
Trichlorofluoromethane	<5	<5
1,2,3-Trichloropropane	<20	<20
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Xylene(total)	<5	<5
Analysis Date	11/9/90	11/10/90
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	97	117
1,4-Difluorobenzene	88	111
Chlorobenzene-D_5	86	105
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	99	100
1,2-Dichloroethane-D_4	81	83
Toluene-D_8	102	105

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-05023.2 (11/8/90)	90-05024 (11/8/90)
Acetone	<10	<10
Acetonitrile	<100	<100
Acrolein	<100	<100
Acrylonitrile	<100	<100
Allyl chloride	<20	<20
Benzene	<5	<5
Bromomethane	<10	<10
Bromodichloromethane	<5	<5
Bromoform	<5	<5
Carbon disulfide	<5	<5
Carbon tetrachloride	<5	<5
Chlorobenzene	<5	<5
Chloroethane	<10	<10
Chloroform	<5	<5
Chloromethane	<10	<10
Chloroprene	<20	<20
Dibromochloromethane	<5	<5
1,2-Dibromo-3-chloropropane	<40	<40
1,2-Dibromoethane	<20	<20
Dibromomethane	<20	<20
Trans-1,4-dichloro-2-butene	<40	<40
1,4-Dioxane	<50	<50
1,1-Dichloroethane	<5	<5
1,2-Dichloroethane	<5	<5
1,1-Dichloroethylene	<5	<5
Trans-1,2-dichloroethylene	<5	<5
1,2-Dichloropropane	<5	<5
Cis-1,3-dichloropropene	<5	<5
Trans-1,3-dichloropropene	<5	<5
Ethyl benzene	<5	<5
Ethyl methacrylate	<20	<20
2-Hexanone	<10	<10
Methylene chloride	<5	<5
Methyl ethyl ketone	<10	<10
Methyl iodide	<10	<10
Proprionitrile	<5	<5

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-05023.2 (11/8/90)	90-05024 (11/8/90)
Methyl isobutyl ketone	<10	<10
Pentachloroethane	<40	<40
Styrene	<5	<5
1,1,1,2-Tetrachloroethane	<20	<20
1,1,2,2-Tetrachloroethane	<5	<5
Tetrachloroethylene	<5	<5
Toluene	<5	<5
1,1,1-Trichloroethane	<5	<5
1,1,2-Trichloroethane	<5	<5
Trichloroethylene	<5	<5
Trichlorofluoromethane	<5	<5
1,2,3-Trichloropropane	<20	<20
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Xylene(total)	<5	<5
Analysis Date	11/9/90	11/9/90
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	93	88
1,4-Difluorobenzene	92	88
Chlorobenzene-D_5	89	88
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	98	98
1,2-Dichloroethane-D_4	84	84
Toluene-D_8	101	101

I.D. #90-2279
WVDP:0001106.RM

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-05025 (11/8/90)	90-05026 (11/8/90)
Acetone	<10	<10
Acetonitrile	<100	<100
Acrolein	<100	<100
Acrylonitrile	<100	<100
Allyl chloride	<20	<20
Benzene	<5	<5
Bromomethane	<10	<10
Bromodichloromethane	<5	<5
Bromoform	<5	<5
Carbon disulfide	<5	<5
Carbon tetrachloride	<5	<5
Chlorobenzene	<5	<5
Chloroethane	<10	<10
Chloroform	<5	<5
Chloromethane	<10	<10
Chloroprene	<20	<20
Dibromochloromethane	<5	<5
1,2-Dibromo-3-chloropropane	<40	<40
1,2-Dibromoethane	<20	<20
Dibromomethane	<20	<20
Trans-1,4-dichloro-2-butene	<40	<40
1,4-Dioxane	<50	<50
1,1-Dichloroethane	<5	<5
1,2-Dichloroethane	<5	<5
1,1-Dichloroethylene	<5	<5
Trans-1,2-dichloroethylene	<5	<5
1,2-Dichloropropane	<5	<5
Cis-1,3-dichloropropene	<5	<5
Trans-1,3-dichloropropene	<5	<5
Ethyl benzene	<5	<5
Ethyl methacrylate	<20	<20
2-Hexanone	<10	<10
Methylene chloride	<5	<5
Methyl ethyl ketone	<10	<10
Methyl iodide	<10	<10
Proprionitrile	<5	<5

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-05025 (11/8/90)	90-05026 (11/8/90)
Methyl isobutyl ketone	<10	<10
Pentachloroethane	<40	<40
Styrene	<5	<5
1,1,1,2-Tetrachloroethane	<20	<20
1,1,2,2-Tetrachloroethane	<5	<5
Tetrachloroethylene	<5	<5
Toluene	<5	<5
1,1,1-Trichloroethane	<5	<5
1,1,2-Trichloroethane	<5	<5
Trichloroethylene	<5	<5
Trichlorofluoromethane	<5	<5
1,2,3-Trichloropropane	<20	<20
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Xylene(total)	<5	<5
Analysis Date	11/9/90	11/9/90
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	90	88
1,4-Difluorobenzene	95	83
Chlorobenzene-D_5	93	81
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	93	94
1,2-Dichloroethane-D_4	83	83
Toluene-D_8	106	103

I.D. #90-2279

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

BLKW

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-05027 (11/8/90)	90-05027RE (11/8/90)
Acetone	<10	<10
Acetonitrile	<100	<100
Acrolein	<100	<100
Acrylonitrile	<100	<100
Allyl chloride	<20	<20
Benzene	<5	<5
Bromomethane	<10	<10
Bromodichloromethane	<5	<5
Bromoform	<5	<5
Carbon disulfide	<5	<5
Carbon tetrachloride	<5	<5
Chlorobenzene	<5	<5
Chloroethane	<10	<10
Chloroform	<5	<5
Chloromethane	<10	<10
Chloroprene	<20	<20
Dibromochloromethane	<5	<5
1,2-Dibromo-3-chloropropane	<40	<40
1,2-Dibromoethane	<20	<20
Dibromomethane	<20	<20
Trans-1,4-dichloro-2-butene	<40	<40
1,4-Dioxane	<50	<50
1,1-Dichloroethane	<5	<5
1,2-Dichloroethane	<5	<5
1,1-Dichloroethylene	<5	<5
Trans-1,2-dichloroethylene	<5	<5
1,2-Dichloropropane	<5	<5
Cis-1,3-dichloropropene	<5	<5
Trans-1,3-dichloropropene	<5	<5
Ethyl benzene	<5	<5
Ethyl methacrylate	<20	<20
2-Hexanone	<10	<10
Methylene chloride	<5	<5
Methyl ethyl ketone	<10	<10
Methyl iodide	<10	<10
Proprionitrile	<5	<5

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION (DATE) 90-05027 (11/8/90)	90-05027RE (11/8/90)
Methyl isobutyl ketone	<10	<10
Pentachloroethane	<40	<40
Styrene	<5	<5
1,1,1,2-Tetrachloroethane	<20	<20
1,1,2,2-Tetrachloroethane	<5	<5
Tetrachloroethylene	<5	<5
Toluene	<5	<5
1,1,1-Trichloroethane	<5	<5
1,1,2-Trichloroethane	<5	<5
Trichloroethylene	<5	<5
Trichlorofluoromethane	<5	<5
1,2,3-Trichloropropane	<20	<20
Vinyl acetate	<10	<10
Vinyl chloride	<10	<10
Xylene(total)	<5	<5
Analysis Date	11/9/90	11/9/90
Internal Standards		
Level Added = 50 ug/l (% Recovery)		
Bromochloromethane	87	110
1,4-Difluorobenzene	91	104
Chlorobenzene-D_5	90	101
Surrogates		
Level Added = 50 ug/l (% Recovery)		
4-Bromofluorobenzene	97	101
1,2-Dichloroethane-D_4	85	83
Toluene-D_8	101	101

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION
	Method Blank
Acetone	<10
Acetonitrile	<100
Acrolein	<100
Acrylonitrile	<100
Allyl chloride	<20
Benzene	<5
Bromomethane	<10
Bromodichloromethane	<5
Bromoform	<5
Carbon disulfide	<5
Carbon tetrachloride	<5
Chlorobenzene	<5
Chloroethane	<10
Chloroform	<5
Chloromethane	<10
Chloroprene	<20
Dibromochloromethane	<5
1,2-Dibromo-3-chloropropane	<40
1,2-Dibromoethane	<20
Dibromomethane	<20
Trans-1,4-dichloro-2-butene	<40
1,4-Dioxane	<50
1,1-Dichloroethane	<5
1,2-Dichloroethane	<5
1,1-Dichloroethylene	<5
Trans-1,2-dichloroethylene	<5
1,2-Dichloropropane	<5
Cis-1,3-dichloropropene	<5
Trans-1,3-dichloropropene	<5
Ethyl benzene	<5
Ethyl methacrylate	<20
2-Hexanone	<10
Methylene chloride	<5
Methyl ethyl ketone	<10
Methyl iodide	<10
Proprionitrile	<5

(continued)

AQUEOUS MATRIX
METHOD 8240 - VOLATILES

COMPOUND (Units of Measure = ug/l)	SAMPLE IDENTIFICATION
	Method Blank
Methyl isobutyl ketone	<10
Pentachloroethane	<40
Styrene	<5
1,1,1,2-Tetrachloroethane	<20
1,1,2,2-Tetrachloroethane	<5
Tetrachloroethylene	<5
Toluene	<5
1,1,1-Trichloroethane	<5
1,1,2-Trichloroethane	<5
Trichloroethylene	<5
Trichlorofluoromethane	<5
1,2,3-Trichloropropane	<20
Vinyl acetate	<10
Vinyl chloride	<10
Xylene(total)	<5
Analysis Date	11/9/90
Internal Standards	
Level Added = 50 ug/l	
(% Recovery)	
Bromochloromethane	99
1,4-Difluorobenzene	90
Chlorobenzene-D_5	90
Surrogates	
Level Added = 50 ug/l	
(% Recovery)	
4-Bromofluorobenzene	92
1,2-Dichloroethane-D_4	82
Toluene-D_8	82

I.D. #90-2279
WVDP:0001106.RM

RECRA ENVIRONMENTAL, INC.

West Valley Nuclear Services, Inc. .O. Box 191, West Valley, . 14171

ENVIRONMENTAL LABORATORY SAMPLE SHIPMENT FORM --- CHAIN-OF-CUSTODY / REQUEST-FOR-ANALYSIS

WVDP:0001106.RM

External Lab Destination:	Purchase Order #:	Analysis Requested
Recra Env. Lab	34408	

SAMPLER SIGNATURE(S) Charles T Roesch, William [illegible], Thomas J Ryder, William [illegible]

STATION ID #	DATE	TIME	LOCATION CODE	PRES	# CONT	VOA (APP IX)	TOH	TOC / PHENOL	ANIONS; SO_4 NO_3 F CL	TOTAL METALS	SOLUBLE METALS		
90-04991.2	11/8/90	1030	4-WNW8012	HCL	2	X							
90-04991.3				H_2SO_4	1		X						
90-04991.4				H_2SO_4	1			X					
90-04991.5				cool	1				X				
90-04991.6				HNO_3	1					X			
90-04991.7				↓	1						X		
90-05020.2	11/8/90	0915	4-WNW86-06	HCL	2	X							
90-05020.3				H_2SO_4	1		X						
90-05020.4				↓	1			X					
90-05020.5				cool	1				X				
90-05020.6				HNO_3	1					X			
90-05020.7				↓	1						X		

* VOA 's are in duplica : if positivedetection is made on one sample, analyze the second by GC/MS only

TOTAL METALS: As, Ba, Cd, Cr, Fe, Pb, Mn, Hg, Se, Ag, Na.

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY	
Charles T Roesch	Kim M. Alessandra	Kim M. Alessandra	[illegible]	Upon Samp
11-8-90 1605	11-08-90 1830	11-08-90 1830	11/8/90 1830	Temp C
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME	Condition

JV-1155

West Val(Nuclear Services, Inc. .O. Box 191, W..t Valley, . 14171

ENVIRONMENTAL LABORATORY SAMPLE SHIPMENT FORM --- CHAIN-OF-CUSTODY / REQUEST-FOR-ANALYSIS

WVDP:0001106.RM

External Lab Destination:	Purchase Order #:	Analysis Requested
Recra Env. Lab	34408	

SAMPLER SIGNATURE(S) Charles T. Roesch, Thomas J. Rych, Wiffley, Kim

STATION ID #	DATE	TIME	LOCATION CODE	PRES	# CONT	VOA (APP IX)	TOH	TOC / PHENOL	ANIONS: SO_4 NO_3 F CL	TOTAL METALS	SOLUBLE METALS			
90-05018.2	11/8/90	0945	4-WNW8611	HCL	2	X								• VOA 's are in duplic. : if positivedetection is made on one sampl analyze the second by GC/MS only
90-05018.3				H_2SO_4	1		X							
90-05018.4				↓	1			X						
90-05018.5				cool	1				X					
90-05018.6				HNO_3	1					X				TOTAL METALS: As, Ba, Cd, Cr, Fe, Pb, Mn, Hg, Se, Ag, Na.
90-05018.7	↓	↓	↓	HNO_3	1						X			
90-04987.2	11/8/90	1145	4-WNW8604	HCl	2	X								
90-04987.3				H_2SO_4	1		X							
90-04987.4				↓	1			X						
90-04987.5				cool	1				X					
90-04987.6				HNO_3	1					X				
90-04987.7	↓	↓	↓	↓	1						X			

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY	
Charles T. Roesch	Kim M. Alessandro	Kim M. Alessandro	[illegible]	Upon Sample
11-8-90 1605	11-08-90 1830	11-08-90 1830	11/8/90 1830	Temp C
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME	Condition

WV-1155

West Valley Nuclear Services, Inc. P.O. Box 191, West Valley, NY 14171

ENVIRONMENTAL LABORATORY SAMPLE SHIPMENT FORM --- CHAIN-OF-CUSTODY / REQUEST-FOR-ANALYSIS

WVDP:0001106.RM

External Lab Destination:	Purchase Order #:	Analysis Requested
Recra Env. Lab	34408	

SAMPLER SIGNATURE(S) Charles T Roesch, Thomas S Ryan, William Lambert, William J Kee

STATION ID #	DATE	TIME	LOCATION CODE	PRES	# CONT	VOA (APP IX)	TOH	TOC / PHENOL	ANIONS; SO_4 NO_3 F CL	TOTAL METALS	SOLUBLE METALS			
90-05021.2	11/8/90	1000	4-WNW8612	HCL	2	X								
90-05021.3	↓	↓	↓	H_2SO_4	1		X							
90-05021.4	↓	↓	↓	↓	1			X						
90-05021.5	↓	↓	↓	COOL	1				X					
90-05021.6	↓	↓	↓	HNO_3	1					X				
90-05021.7	↓	↓	↓	↓	1						X			
90-05022.2	11/8/90	1145	4-WNGSEEP	HCL	2	X								
90-05022.3	↓	↓	↓	H_2SO_4	1		X							
90-05022.4	↓	↓	↓	↓	1			X						
90-05022.5	↓	↓	↓	COOL	1				X					
90-05022.6	↓	↓	↓	HNO_3	1					X				
90-05022.7	↓	↓	↓	↓	1						X			

* VOA 's are in duplica : if positivedetection is made on one sample analyze the second by GC/MS only

TOTAL METALS: As, Ba, Cd, Cr, Fe, Pb, Mn, Hg, Se, Ag, Na.

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY	Upon Sample
Charles T Roesch	Kim M. Alessandra	Kim M. Alessandra	R J Ryan	Temp C
11-8-90 1605	11-08-90 1830	11-08-90 1830	11/8/90 1830	Condition
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME	

WV-1155

West Valley Nuclear Services, Inc. P.O. Box 191, West Valley, N.Y. 14171

ENVIRONMENTAL LABORATORY SAMPLE SHIPMENT FORM --- CHAIN-OF-CUSTODY / REQUEST-FOR-ANALYSIS

WVDP:0001106.RM

External Lab Destination: Recra Env. Lab

Purchase Order #: 34408

SAMPLER SIGNATURE(S): Charles T Roesch, Thomas J Ryan, Kenneth Smith

Analysis Requested

STATION ID #	DATE	TIME	LOCATION CODE	PRES	# CONT	VOA (APP IX)	TOH	TOC / PHENOL	ANIONS: SO_4 NO_3 F CL	TOTAL METALS	SOLUBLE METALS			
90-05023.2	11/8/90	1200	4-WNSP008	HCl	2	X								• VOA 's are in duplica : if positivedetection is made on one sample analyze the second by GC/MS only
90-05023.3	↓	↓	↓	H_2SO_4	1		X							
90-05023.4				↓	1			X						
90-05023.5				cool	1				X					
90-05023.6				HNO_3	1					X				TOTAL METALS: As, Ba, Cd, Cr, Fe, Pb, Mn, Hg, Se, Ag, Na.
90-05023.7	↓	↓	↓	↓	1						X			
90-04986.2	11/8/90	1100	4-WNW8603	HCl	2	X								
90-04986.3	↓	↓	↓	H_2SO_4	1		X							
90-04986.4				↓	1			X						
90-04986.5				cool	1				X					
90-04986.6				HNO_3	1					X				
90-04986.7	↓	↓	↓	↓	1						X			

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY	
Charles T Roesch	Kim M. Alessandra	Kim M. Alessandra	R O'Regan	Upon Sample
11-8-90 1605	11-08-90 1830	11-08-90 1830	11/8/9. 183	Temp C
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME	Condition

WV-1155

West Valley Nuclear Services, Inc. P.O. Box 191, West Valley, NY 14171

ENVIRONMENTAL LABORATORY SAMPLE SHIPMENT FORM --- CHAIN-OF-CUSTODY / REQUEST-FOR-ANALYSIS

WVDP:0001106.RM

External Lab Destination:	Purchase Order #:	Analysis Requested
Reera Env. Lab	34408	

SAMPLER SIGNATURE(S) Charles T Roesch, William [illegible], Thomas [illegible], William [illegible]

STATION ID #	DATE	TIME	LOCATION CODE	PRES	# CONT	VOA (APP IX)	TOH	TOC / PHENOL	ANIONS; SO_4 NO_3 F CL	TOTAL METALS	SOLUBLE METALS		
90-05024	11/8/90	0830	WNW81-01	HCL	2	X							
90-05025	11/8/90	1215	WNW82-01	HCL	2	X							
90-05026	11/8/90	0830	WNW81.01	HCL	2	X							
90-05027	11/8/90	1200	WNW82-01	HCL	2	X							
90-05019.2	11/8/90	0915	4-WNW831D	HCL	2	X							
90-05019.3	↓	↓	↓	H_2SO_4	1		X						
90-05019.4	↓	↓	↓	H_2SO_4	1			X					
90-05019.5	↓	↓	↓	COOL	1				X				
90-05019.6	11/8/90	1630	4-WNW831D	HNO_3	1					X			

* VOA 's are in duplicat : if positivedetection is made on one sample, analyze the second by GC/MS only

TOTAL METALS: As, Ba, Cd, Cr, Fe, Pb, Mn, Hg, Se, Ag, Na.

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY	Upon Sample
Charles T Roesch	Kim M. Alessandra	R. [illegible]		Temp C
11-8-90 1605	11-08-90 1830	11/8/90 1830		Condition
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME	

WV-1155

FEBRUARY 25, 1991

ECOLOGY AND ENVIRONMENT -ASC JOB# 9100.427
WEST VALLEY NUCLEAR SERVICES INC
PURCHASE ORDER NUMBER 19-49216-C-RC
* CHARGE #WH6100010 *
* RELEASE #0005 *

DATE SAMPLED	DATE RECEIVED	SAMPLE NUMBER	CLIENT ID	CLIENT LOCATION	TEST	TEST NAME
02/25/91	02/27/91	3685	91-01407	WNW0109	WVOAIX1	VOA APPENDIX IX
		3686	91-01409	WNW0109	WTOC 1	TOC
					WTOX 1	TOX
		3687	91-01411	WNW0110	WVOAIX1	VOA APPENDIX IX
		3688	91-01413	WNW0110	WTOC 1	TOC
					WTOX 1	TOX
		3689	91-01415	WNSP008	WVOAIX1	VOA APPENDIX IX
		3690	91-01417	WNSP008	WTOC 1	TOC
					WTOX 1	TOX
		3691	91-01419	WNGSEEP	WVOAIX1	VOA APPENDIX IX
		3692	91-01421	WNGSEEP	WTOC 1	TOC
					WTOX 1	TOX
		3693	91-01422	WNW8101	WVOAIX1	VOA APPENDIX IX
		3694	91-01423	~~WNW0101~~ WNW8201	WVOAIX1	VOA APPENDIX IX

PARAMETER	METHOD
Total Organic Carbon	Method 415.2 - "Methods for the Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983.
Total Organic Halogens	Method 9020 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, U.S. EPA, 1986.
Volatile Organics Appendix IX	Method 8240 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, U.S. EPA, 1986.

LAB SAMPLE ID	CLIENT SAMPLE ID	TEST CODE	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED
3685.01	91-01407	WVOAIX1	02/25/91		02/28/91
3686.01	91-01409	WTOC 1	02/25/91		03/19/91
		WTOX 1	02/25/91		03/01/91
3687.01	91-01411	WVOAIX1	02/25/91		02/28/91
3688.01	91-01413	WTOC 1	02/25/91		03/19/91
		WTOX 1	02/25/91		03/01/91
3689.01	91-01415	WVOAIX1	02/25/91		02/28/91
3690.01	91-01417	WTOC 1	02/25/91		03/19/91
		WTOX 1	02/25/91		03/01/91
3691.01	91-01419	WVOAIX1	02/25/91		02/28/91
3692.01	91-01421	WTOC 1	02/25/91		03/19/91
		WTOX 1	02/25/91		03/01/91
3693.01	91-01422	WVOAIX1	02/25/91		03/01/91
3694.01	91-01423	WVOAIX1	02/25/91		03/01/91

Analyzed ?

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-03691 MATRIX: WATER
SAMPLE ID CLIENT: 91-01419

PARAMETER	RESULTS	Q	DET. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	6.0	B	5.0
Acetone	ND		10
Methyl Iodide	ND		5.0
Carbon Disulfide	PRESENT	L	5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	8.0		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-03691 MATRIX: WATER
SAMPLE ID CLIENT: 91-01419

PARAMETER	RESULTS	Q	DET. LIMIT
trans-1,3-Dichloropropene	ND		5.0
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Ecology and Environment, Inc.
Analytical Services Center

Analyzed 3/1/91 @ 2245

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-03693 MATRIX: WATER
SAMPLE ID CLIENT: 91-01422

PARAMETER	RESULTS	Q	DET. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	7.0	B	5.0
Acetone	17	B	10
Methyl Iodide	ND		5.0
Carbon Disulfide	23		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	ND		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-03693 MATRIX: WATER
SAMPLE ID CLIENT: 91-01422

PARAMETER	RESULTS	Q	DET. LIMIT
trans-1,3-Dichloropropene	ND		5.0
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Ecology and Environment, Inc.
Analytical Services Center

Analyzed 2/28/91 @ 1823

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-03694 MATRIX: WATER
SAMPLE ID CLIENT: 91-01423

PARAMETER	RESULTS	Q	DET. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	8.0	B	5.0
Acetone	ND		10
Methyl Iodide	ND		5.0
Carbon Disulfide	23		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	ND		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-03694 MATRIX: WATER
SAMPLE ID CLIENT: 91-01423

PARAMETER	RESULTS	Q	DET. LIMIT
trans-1,3-Dichloropropene	ND		5.0
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY OF SURROGATE SPIKES

Compound	E & E Laboratory No. 91-	Amount Added	Amount Determined	Percent Recovery
		(ug/L)		
1,2-Dichloroethane-d4	3685	50	54	108
	3687	50	52	104
	3689	50	52	104
	3691	50	50	100
	3693	50	54	108
	3694	50	57	114
	Blank 1	50	49	98
	Blank 2	50	56	112
Toluene-d8	3685	50	55	110
	3687	50	52	104
	3689	50	51	102
	3691	50	53	106 ✓
	3693	50	52	104
	3694	50	54	108
	Blank 1	50	52	104
	Blank 2	50	52	104
4-Bromofluorobenzene	3685	50	48	96
	3687	50	47	94
	3689	50	46	92
	3691	50	46	92
	3693	50	46	92
	3694	50	47	94
	Blank 1	50	43	86
	Blank 2	50	45	90

These recoveries are acceptable to E & E, Inc. guidelines.

QUALITY CONTROL FOR ACCURACY AND PRECISION: PERCENT RECOVERY AND RELATIVE PERCENT DIFFERENCE (RPD) OF WATER MATRIX SPIKE (MS) AND MATRIX SPIKE DUPLICATE (MSD) (Sample # 3685)

9100.427

(ug/L)

Compound	Original Result	Amount Added	Amount Determined MS	Amount Determined MSD	Percent Recovery MS	Percent Recovery MSD	RPD
1,1-Dichloroethene	<5	50	45	42	90	84	7
Trichloroethene	<5	50	50	48	100	96	4
Chlorobenzene	<5	50	46	45	92	90	2
Toluene	<5	50	46	46	92	92	0
Benzene	<5	50	48	48	96	96	0

These recoveries and RPDs are within E & E, Inc. limits.

Ecology and Environment, Inc.
Analytical Services Center

Analyzed 2/28/91 @ 1823

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : METHOD BLANK 1 MATRIX: WATER

PARAMETER	RESULTS	Q	DET. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	9.0		5.0
Acetone	PRESENT	L	10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	ND		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : METHOD BLANK 1 MATRIX: WATER

PARAMETER	RESULTS	Q	DET. LIMIT
trans-1,3-Dichloropropene	ND		5.0
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Ecology and Environment, Inc.
Analytical Services Center

Analyzed 3/1/91 @ 19:13

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : METHOD BLANK 2 MATRIX: WATER

PARAMETER	RESULTS	Q	DET. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	PRESENT	L	5.0
Acetone	PRESENT	L	10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	ND		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : METHOD BLANK 2 MATRIX: WATER

PARAMETER	RESULTS	Q	DET. LIMIT
trans-1,3-Dichloropropene	ND		5.0
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Volume 0005
19-PRV-49216-C-RC S- 3872

P.O. BOX 191, WEST VALLEY
SHIPPING REQUEST/L ORDER # 5664576 81

SHIP TO	MATERIAL LOCATED IN	DATE TO BE SHIPPED	HOW TO SHIP
Ecology & Environment 4285 Genesee Road P.O. Box D Buffalo, New York 14225	ENV. LAB	02/26/91	Airbor
	MARK EACH PACKAGE	DATE TO BE RETURNED	EST. VALUE
	N/A		N/A
	PREPAID / COLLECT	—	
	X		

WHEN RETURNED DELIVER TO
coolers to warehouse

RETURN SHIP VIA
[ ] UPS [ ] TRUCK [X] AIRFREIGHT [ ] OTHER

SPECIAL CHARGE

PERSON TO CONTACT FOR FURTHER INFORMATION
Jim Fox (716) 942-4338

PACKAGE NUMBER & WEIGHT	ITEM	QUANTITY	DESCRIPTION, CONDITION, PART NUMBER AND SERIAL NUMBER	UNIT PRICE	MANUFACTURER	AMOUNT
cooler 091-10 - 26#	1	20	groundwater wells 0109 GSEEP 0110 SP008			

REASON FOR SHIPPING
Laboratory Analysis

SHIPMENT DESIGNATIONS (CIRCLE AS APPLICABLE)
TOXIC:
I - UNDER PURCHASING DEPT. COGNIZANCE
II - TO CUSTOMER OR IN PERFORMANCE OF CONTRACT (UNLESS UNDER PURCHASING COGNIZANCE)

PACKAGING:
Environmental Lab

ALL SPECIAL PACKAGING CONSIDERATIONS MUST BE NOTED.

TYPE OF SHIPMENT: [X] NON-HAZARDOUS/NON-RADIOACTIVE
[ ] HAZARDOUS
[ ] RADIOACTIVE

HAZARDOUS MATERIAL NUMBER —

USE OF THIS PROPERTY SHALL TEST WITH
[ ] WESTINGHOUSE [ ] GOVERNMENT [ ] RECIPIENT

SHIPMENT APPROVAL SIGNATURES

		DATE
PREPARED BY	Nicole McNeil	2/26/91
TRANSPORTATION	N/A (N/A FOR NON-HAZARDOUS/NON-RADIOACTIVE SHIPMENTS)	
AUTHORIZING MANAGER	[signature]	2-26-91
R&S TECHNICIAN	Rick Chapman	2-26-91
PURCHASING MANAGER	[signature]	02/26/91
OPERATIONS MANAGER	N/A	
SHIPPED BY	[signature]	2/26/91

NOTE: ALL ITEMS BEING RELEASED FOR SHIPMENT OFF-SITE REQUIRE R&S SURVEY AND/OR APPROVAL.

West Valley Nuclear Services, Inc. P.O. Box 191, West Valley, NY 14171

CHAIN-OF-CUSTODY / REQUEST-FOR-ANALYSIS / PACKING SHEET

☐ SPDES ☒ GROUNDWATER ☐ POTABLE WATER ☐ OTHER

External Lab Destination: Env. & Ecology

Purchase Order #: 19-49216-C-RC

Charge # WH6100010

Release # 0005

Sample Custodian Signature: Nevella McNeil

Analysis Requested

Report Format Level: 1 2

Priority Code: 1 2

Report Data To: JIM FOX 716-942-4336

SAMPLE I.D. #	DATE	TIME	LOCATION CODE	PRES	# CONT	VOA (App IX)	TOC/TOX					
91-01419	2/25/91	1415	WNGSEEP	HCl	3	X						
91-01421	↓	↓	↓	H_2SO_4	1		X					
91-01415	2/25/91	1400	WNSP008	HCl	3	X						
91-01417	↓	↓	↓	H_2SO_4	1		X					
91-01407	2/25/91	1015	WNW0109	HCl	3	X						
91-01409	↓	↓	↓	H_2SO_4	1		X					
91-01411	2/25/91	1045	WNW0110	HCL	3	X						
91-01413	↓	↓	↓	H_2SO_4	1		X					
91-01422	2/25/91	0845	WNW8101	HCl	2	X						
91-01423	↓	1445	WNW8201	HCl	2	X						
			[illegible] 4-20-91									

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY	Sample
N. McNeil	Airborne Express	Airborne Express	Brian Benson	C
02/26/91 1630			2-27-91 0830	T
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME	

V-1155

WVDP:0001106.RM

WVDP:0001106.RM

[redacted] / REQUEST FOR ANALYSIS / [redacted]

☐ SPDES ☒ GROUNDWATER ☐ POTABLE WATER ☐ OTHER

External Lab Destination:	Purchase Order #:	Analysis Requested	Report Format Level
E & E	19-49216-C-RC		(1) 2
Charge # WH6100010	Release # 0006		Priority Code: 1 2
Sample Custodian Signature: Neville McNeil			Report Data To: JIM FOX 716-942-4336

SAMPLE I.D. #	DATE	TIME	LOCATION CODE	PRES	# CONT	VOA (MEH)
91-01538	02/28/91	0830	WNW8101	HCl	2	X
91-01539	↓	1000	WNW8201	HCl	2	X

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY	Samp
Neville McNeil				Cool: Temp
DATE / TIME 02/28/91 1630	DATE / TIME	DATE / TIME	DATE / TIME	

WV-1155

WVDP-RFI-002
Rev. 0
Page 176 of 319

APRIL 14, 1991

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-08377 MATRIX: WATER
SAMPLE ID CLIENT: 91-02629
SAMPLE LOCATION : 3-WNGSEEP

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	9.0	B	5.0
Acetone	PRESENT	LB	10
Methyl Iodide	ND		5.0
Carbon Disulfide	23		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	6.0		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-08377 MATRIX: WATER
SAMPLE ID CLIENT: 91-02629
SAMPLE LOCATION : 3-WNGSEEP

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :WVOAIX1 JOB NUMBER :9100.872

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-08377 RA MATRIX: WATER
SAMPLE ID CLIENT: 91-02629
SAMPLE LOCATION : 3-WNGSEEP

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	5.0	B	5.0
Acetone	ND		10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	7.0		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
RA = REANALYZED

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-08377 RA MATRIX: WATER
SAMPLE ID CLIENT: 91-02629
SAMPLE LOCATION : 3-WNGSEEP

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
RA = REANALYZED

☐ SPDES ☒ GROUNDWATER ☐ POTABLE WATER ☐ OTHER

External Lab Destination:	Purchase Order #:	Analysis Requested	Report Format Level:
E & E	19-49216-C-RC		1 2
Charge # WH6100010	Release # 0018		Priority Code: 1 2
Sample Custodian Signature: Linda M. Tingue			Report Data To: JIM FOX 716-942-4336

SAMPLE I.D.#	DATE	TIME	LOCATION CODE	PRES	# CONT	VOA APPIX	TOC/TOX					
91-02716	4-16-91	1030	3-WNW0803	HCL	3	X						
91-02718	4-16-91	1030	3-WNW0803	H_2SO_4	2		X					
91-02713	4-16-91	1100	3-WNW0804	HCL	3	X						
91-02715	4-16-91	1100	3-WNW0804	H_2SO_4	1		X					
91-02698	4-16-91	0830	WNW8101	HCL	2	X						
91-02699	4-16-91	1100	WNW8201	HCL	2	X						
91-02657	4-15-91	1145	WNW8201	HCL	2	X						
91-02656	4-15-91	0830	WNW8101	HCL	2	X						

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY	Sample
Linda M. Tingue				
DATE / TIME 4-16-91 1430	DATE / TIME	DATE / TIME	DATE / TIME	Cool: Temp C

IV-1155

ecology and environment

WVDP:0001106.RM

WVDP:0001106.RM

st Valley Nuclear Services, Inc. P.O. Box 191, West Valley, NY 14171

CHAIN-OF-CUSTODY / REQUEST-FOR-ANALYSIS / PACKING SHEET

☐ SPDES ☒ GROUNDWATER ☐ POTABLE WATER ☐ OTHER

External Lab Destination:	Purchase Order #:	Analysis Requested	Report Format Level:
3E & E	19-49216-C-RC		(1) 2
Charge # WH6100010	Release # 0018		Priority Code: 1 2
Sample Custodian Signature: Linda M Jingue			Report Data To: Jim Fox 716-942-4338

SAMPLE I.D.#	DATE	TIME	LOCATION CODE	PRES	# CONT	VOA APPIX	TOC/TOX					
91-02629	4/15/91	1115	3-WNGSEEP	HCL	3	X						
91-02631	4/15/91	1115	3-WNGSEEP	H_2SO_4	1		X					
91-02625	4/15/91	1145	3-WNDMPNE	HCL	3	X						
91-02627	4/15/91	1145	3-WNDMPNE	H_2SO_4	1		X					
91-02637	4/15/91	1015	3-WNW0103	HCL	3	X						
91-02639	4/15/91	1015	3-WNW0103	H_2SO_4	1		X					
91-02633	4/15/91	1130	3-WNSP008	HCL	3	X						
91-02635	4/15/91	11:30	3-WNSP008	H_2SO_4	1		X					
91-02641	4/15/91	1100	3-WNW0104	HCL	3	X						
91-02643	4/15/91	1100	3-WNW0104	H_2SO_4	1		X					
91-02645	4/15/91	1445	3-WNW0105	HCL	3	X						
91-02647	4/15/91	1445	3-WNW0105	H_2SO_4	1		X					

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY	Sample
Linda M Jingue				Cool:
4-16-91 4:30				Temp C
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME	

V-1155

MAY 15, 1991

ANALYTICAL REFERENCE SUMMARY

PARAMETER	METHOD
Total Alkalinity	Method 310.1 - "Methods for the Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983.
Alkalinity Bicarbonate	Method 310.1 - "Methods for the Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983.
Chloride	Method 9252 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, Third Edition, U.S. EPA, 1986.
Nitrate-Nitrogen	Method 353.2 - "Methods for the Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983.
Total Phenols	Method 9065 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" SW-846, Third Edition, U.S. EPA, 1986.
Sulfate	Method 9036 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, Third Edition, U.S. EPA, 1986.
Total Organic Carbon	Method 415.2 - "Methods for the Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983.
Total Organic Halides	Method 9020 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, Third Edition, U.S. EPA, 1986.
Iron Manganese Calcium Magnesium Sodium Potassium	Method 6010 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, Third Editon, U.S. EPA, 1986.
Volatile Organics Appendix IX	Method 8240 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, Third Edition, U.S. EPA, 1986.

Ecology and Environment, Inc.
SAMPLE TRACKING REPORT

LAB SAMPLE ID	CLIENT SAMPLE ID	TEST CODE	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED
11400.01	91-03970	WFEICP1	05/15/91	05/21/91	05/21/91
		WKICP 1	05/15/91	05/21/91	05/21/91
		WMGICP1	05/15/91	05/21/91	05/21/91
		WMNICP1	05/15/91	05/21/91	05/21/91
		WNAICP1	05/15/91	05/21/91	05/21/91
11401.01	91-03971	WCAICP1	05/15/91	05/21/91	05/21/91
		WFEICP1	05/15/91	05/21/91	05/21/91
		WKICP 1	05/15/91	05/21/91	05/21/91
		WMGICP1	05/15/91	05/21/91	05/21/91
		WMNICP1	05/15/91	05/21/91	05/21/91
		WNAICP1	05/15/91	05/21/91	05/21/91
11402.01	91-03976	WVOAIX1	05/15/91		05/28/91
11402.02	91-03976 RA	WVOAIX1	05/15/91		06/05/91
11403.01	91-03977	WTOC 1	05/15/91		05/29/91
		WTOX 1	05/15/91		05/24/91
11404.01	91-03978	WPHOLD1	05/15/91		05/28/91
11405.01	91-03979	WALK 1	05/15/91		05/31/91
		WBIALK1	05/15/91		05/31/91
		WCL 1	05/15/91		05/29/91
		WNO3 1	05/15/91		05/17/91
		WSO4 1	05/15/91		05/30/91
11406.01	91-03980	WCAICP1	05/15/91	05/21/91	05/21/91
		WFEICP1	05/15/91	05/21/91	05/21/91
		WKICP 1	05/15/91	05/21/91	05/21/91
		WMGICP1	05/15/91	05/21/91	05/21/91
		WMNICP1	05/15/91	05/21/91	05/21/91
		WNAICP1	05/15/91	05/21/91	05/21/91
11407.01	91-03981	WCAICP1	05/15/91	05/21/91	05/21/91
		WFEICP1	05/15/91	05/21/91	05/21/91
		WKICP 1	05/15/91	05/21/91	05/21/91
		WMGICP1	05/15/91	05/21/91	05/21/91
		WMNICP1	05/15/91	05/21/91	05/21/91
		WNAICP1	05/15/91	05/21/91	05/21/91
11408.01	91-03905	WVOAIX1	05/15/91		05/28/91
11409.01	91-03906	WTOC 1	05/15/91		05/29/91
		WTOX 1	05/15/91		05/24/91
11410.01	91-03910	WPHOLD1	05/15/91		05/28/91
11411.01	91-03907	WALK 1	05/15/91		05/31/91
		WBIALK1	05/15/91		05/31/91
		WCL 1	05/15/91		05/29/91
		WNO3 1	05/15/91		05/17/91
		WSO4 1	05/15/91		05/30/91
11412.01	91-03908	WCAICP1	05/15/91	05/21/91	05/21/91
		WFEICP1	05/15/91	05/21/91	05/21/91
		WKICP 1	05/15/91	05/21/91	05/21/91
		WMGICP1	05/15/91	05/21/91	05/21/91
		WMNICP1	05/15/91	05/21/91	05/21/91
		WNAICP1	05/15/91	05/21/91	05/21/91

LAB SAMPLE ID	CLIENT SAMPLE ID	TEST CODE	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED
11425.01	91-03928	WNAICP1	05/15/91	05/21/91	05/21/91
11426.01	91-03932	WVOAIX1	05/15/91		05/28/91
11426.02	91-03932 RA	WVOAIX1	05/15/91		06/05/91
11427.01	91-03934	WTOC 1	05/15/91		05/29/91
		WTOX 1	05/15/91		05/29/91
11428.01	91-03935	WPHOLD1	05/15/91		05/30/91
11429.01	91-03936	WALK 1	05/15/91		05/31/91
		WBIALK1	05/15/91		05/31/91
		WCL 1	05/15/91		05/31/91
		WNO3 1	05/15/91		05/17/91
		WSO4 1	05/15/91		06/13/91
11430.01	91-03937	WCAICP1	05/15/91	05/21/91	05/21/91
		WFEICP1	05/15/91	05/21/91	05/21/91
		WKICP 1	05/15/91	05/21/91	05/21/91
		WMGICP1	05/15/91	05/21/91	05/21/91
		WMNICP1	05/15/91	05/21/91	05/21/91
		WNAICP1	05/15/91	05/21/91	05/21/91
11431.01	91-03938	WCAICP1	05/15/91	05/21/91	05/21/91
		WFEICP1	05/15/91	05/21/91	05/21/91
		WKICP 1	05/15/91	05/21/91	05/21/91
		WMGICP1	05/15/91	05/21/91	05/21/91
		WMNICP1	05/15/91	05/21/91	05/21/91
		WNAICP1	05/15/91	05/21/91	05/21/91
11432.01	91-03942	WVOAIX1	05/15/91		05/28/91
11433.01	91-03943	WTOC 1	05/15/91		05/29/91
		WTOX 1	05/15/91		05/29/91
11434.01	91-03944	WPHOLD1	05/15/91		05/30/91
11435.01	91-03945	WALK 1	05/15/91		05/31/91
		WBIALK1	05/15/91		05/31/91
		WCL 1	05/15/91		05/31/91
		WNO3 1	05/15/91		05/17/91
		WSO4 1	05/15/91		05/30/91
11436.01	91-03947	WCAICP1	05/15/91	05/21/91	05/21/91
		WFEICP1	05/15/91	05/21/91	05/21/91
		WKICP 1	05/15/91	05/21/91	05/21/91
		WMGICP1	05/15/91	05/21/91	05/21/91
		WMNICP1	05/15/91	05/21/91	05/21/91
		WNAICP1	05/15/91	05/21/91	05/21/91
11437.01	91-03948	WCAICP1	05/15/91	05/21/91	05/21/91
		WFEICP1	05/15/91	05/21/91	05/21/91
		WKICP 1	05/15/91	05/21/91	05/21/91
		WMGICP1	05/15/91	05/21/91	05/21/91
		WMNICP1	05/15/91	05/21/91	05/21/91
		WNAICP1	05/15/91	05/21/91	05/21/91
11438.01	91-03963	WVOAIX1	05/15/91		05/28/91
11439.01	91-03986	WVOAIX1	05/15/91		05/28/91
11440.01	91-03987	WVOAIX1	05/16/91		05/28/91

TEST CODE :WVOAIX1 JOB NUMBER :9101.163

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-11402 MATRIX: WATER
SAMPLE ID CLIENT: 91-03976
SAMPLE LOCATION : WNGSEEP

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	PRESENT	LB	5.0
Acetone	ND		10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	5.0		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :WVOAIX1 JOB NUMBER :9101.163

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-11402 MATRIX: WATER
SAMPLE ID CLIENT: 91-03976
SAMPLE LOCATION : WNGSEEP

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-11402 (RA) MATRIX: WATER
SAMPLE ID CLIENT: 91-03976
SAMPLE LOCATION : WNGSEEP

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	PRESENT	LB	5.0
Acetone	ND		10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	5.0		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :WVOAIX1 JOB NUMBER :9101.163

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-11402 (RA) MATRIX: WATER
SAMPLE ID CLIENT: 91-03976
SAMPLE LOCATION : WNGSEEP

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :WVOAIX1 JOB NUMBER :9101.163

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-11426 MATRIX: WATER
SAMPLE ID CLIENT: 91-03932
SAMPLE LOCATION : WNGSEEP

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	PRESENT	LB	5.0
Acetone	PRESENT	LB	10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	5.0		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :WVOAIX1 JOB NUMBER :9101.163

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-11426 MATRIX: WATER
SAMPLE ID CLIENT: 91-03932
SAMPLE LOCATION : WNGSEEP

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-11426 (RA) MATRIX: WATER
SAMPLE ID CLIENT: 91-03932
SAMPLE LOCATION : WNGSEEP

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	PRESENT	LB	5.0
Acetone	ND		10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	5.5		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :WVOAIX1 JOB NUMBER :9101.163

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-11426 (RA) MATRIX: WATER
SAMPLE ID CLIENT: 91-03932
SAMPLE LOCATION : WNGSEEP

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-11438 MATRIX: WATER
SAMPLE ID CLIENT: 91-03963
SAMPLE LOCATION : WNW8101

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	PRESENT	LB	5.0
Acetone	10	B	10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	ND		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :WVOAIX1 JOB NUMBER :9101.163

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-11438 MATRIX: WATER
SAMPLE ID CLIENT: 91-03963
SAMPLE LOCATION : WNW8101

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-11439 MATRIX: WATER
SAMPLE ID CLIENT: 91-03986
SAMPLE LOCATION : WNW8101

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	PRESENT	LB	5.0
Acetone	13	B	10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	ND		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-11439 MATRIX: WATER
SAMPLE ID CLIENT: 91-03986
SAMPLE LOCATION : WNW8101

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-11440 MATRIX: WATER
SAMPLE ID CLIENT: 91-03987
SAMPLE LOCATION : WNW8201

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	PRESENT	LB	5.0
Acetone	PRESENT	LB	10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	ND		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :WVOAIX1 JOB NUMBER :9101.163

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-11440 MATRIX: WATER
SAMPLE ID CLIENT: 91-03987
SAMPLE LOCATION : WNW8201

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY OF SURROGATE SPIKES

9101.163

Compound	E & E Laboratory No. 91-	Amount Added	Amount Determined	Percent Recovery
		(ug/L)		
1,2-Dichloroethane-d4	11264	50	49	98
	11270	50	45	90
	11276	50	48	96
	11282	50	49	98
	11288	50	47	94
	11294	50	46	92
	11300	50	47	94
	11306	50	48	96
	11312	50	46	92
	11318	50	46	92
Toluene-d8	11264	50	51	102
	11270	50	49	98
	11276	50	56	112
	11282	50	53	106
	11288	50	52	104
	11294	50	52	104
	11300	50	55	110
	11306	50	54	108
	11312	50	55	110
	11318	50	56	112
4-Bromofluorobenzene	11264	50	45	90
	11270	50	43	86
	11276	50	46	92
	11282	50	45	90
	11288	50	44	88
	11294	50	45	90
	11300	50	46	92
	11306	50	47	94
	11312	50	44	88
	11318	50	45	90

These recoveries are acceptable to E & E, Inc. guidelines.

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY OF SURROGATE SPIKES

9101.163

Compound	E & E Laboratory No. 91-	Amount Added	Amount Determined	Percent Recovery
		(ug/L)		
1,2-Dichloroethane-d4	11324	50	44	88
	11330	50	43	86
	11336	50	41	82
	11342	50	42	84
	11348	50	43	86
	11354	50	42	84
	11360	50	44	88
	11366	50	45	90
	11372	50	43	86
	11378	50	43	86
Toluene-d8	11324	50	51	102
	11330	50	52	104
	11336	50	49	98
	11342	50	50	100
	11348	50	49	98
	11354	50	50	100
	11360	50	51	102
	11366	50	51	102
	11372	50	49	98
	11378	50	49	98
4-Bromofluorobenzene	11324	50	45	90
	11330	50	43	86
	11336	50	43	86
	11342	50	44	88
	11348	50	43	86
	11354	50	40	80
	11360	50	42	84
	11366	50	43	86
	11372	50	42	84
	11378	50	44	88

These recoveries are acceptable to E & E, Inc. guidelines.

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY OF SURROGATE SPIKES.

Compound	E & E Laboratory No. 91-	Amount Added	Amount Determined	Percent Recovery
		(ug/L)		
1,2-Dichloroethane-d4	11384	50	50	100
	11390	50	52	104
	11396	50	50	100
	11402	50	52	104
	11408	50	53	106
	11414	50	52	104
	11420	50	53	106
	11426	50	52	104
	11432	50	52	104
	11438	50	55	110
Toluene-d8	11384	50	49	98
	11390	50	49	98
	11396	50	50	100
	11402	50	51	102
	11408	50	50	100
	11414	50	49	98
	11420	50	48	96
	11426	50	50	100
	11432	50	48	96
	11438	50	49	98
4-Bromofluorobenzene	11384	50	43	86
	11390	50	43	86
	11396	50	43	86
	11402	50	44	88
	11408	50	43	86
	11414	50	44	88
	11420	50	42	84
	11426	50	44	88
	11432	50	42	84
	11438	50	44	88

These recoveries are acceptable to E & E, Inc. guidelines.

QUALITY CONTROL FOR ACCURACY AND PRECISION:
PERCENT RECOVERY AND RELATIVE PERCENT DIFFERENCE (RPD)
OF WATER MATRIX SPIKE (MS) AND MATRIX SPIKE DUPLICATE (MSD)
(Sample # 11264)

(ug/L)

Compound	Original Result	Amount Added	Amount Determined MS	Amount Determined MSD	Percent Recovery MS	Percent Recovery MSD	RPD
1,1-Dichloroethene	ND	50	49	51	98	102	4
Trichloroethene	ND	50	50	52	100	104	4
Chlorobenzene	ND	50	52	55	104	110	6
Toluene	ND	50	56	57	112	114	2
Benzene	ND	50	54	56	108	112	4

These recoveries and RPDs are within E & E, Inc. limits.

ND - NOT DETECTED

QUALITY CONTROL FOR ACCURACY AND PRECISION:
PERCENT RECOVERY AND RELATIVE PERCENT DIFFERENCE (RPD)
OF WATER MATRIX SPIKE (MS) AND MATRIX SPIKE DUPLICATE (MSD)
(Sample # 11324)

9101.163

(ug/L)

Compound	Original Result	Amount Added	Amount Determined MS	Amount Determined MSD	Percent Recovery MS	Percent Recovery MSD	RPD
1,1-Dichloroethene	ND	50	22	48	44	96	74
Trichloroethene	ND	50	85	90	170	180	6
Chlorobenzene	ND	50	55	54	110	108	2
Toluene	ND	50	55	52	110	104	6
Benzene	ND	50	82	88	164	176	7

These recoveries and RPDs are within E & E, Inc. limits.

ND - NOT DETECTED

QUALITY CONTROL FOR ACCURACY AND PRECISION:
PERCENT RECOVERY AND RELATIVE PERCENT DIFFERENCE (RPD)
OF WATER MATRIX SPIKE (MS) AND MATRIX SPIKE DUPLICATE (MSD)
(Sample # 11384)

9101.163

(ug/L)

Compound	Original Result	Amount Added	Amount Determined MS	Amount Determined MSD	Percent Recovery MS	Percent Recovery MSD	RPD
1,1-Dichloroethene	ND	50	37	43	74	86	15
Trichloroethene	ND	50	48	50	96	100	4
Chlorobenzene	ND	50	51	50	102	100	2
Toluene	ND	50	49	46	98	92	6
Benzene	ND	50	46	49	92	98	7

These recoveries and RPDs are within E & E, Inc. limits.

ND - NOT DETECTED

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : METHOD BLANK 1 MATRIX: WATER
DATE OF ANALYSIS: 05/20/91
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	11		5.0
Acetone	16		10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	ND		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :WVOAIX1 JOB NUMBER :9101.163

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : METHOD BLANK 1 MATRIX: WATER
DATE OF ANALYSIS: 05/20/91
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :WVOAIX1 JOB NUMBER :9101.163

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : METHOD BLANK 2 MATRIX: WATER
DATE OF ANALYSIS: 05/21/91
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	PRESENT	L	5.0
Acetone	15		10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	ND		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : METHOD BLANK 2 MATRIX: WATER
DATE OF ANALYSIS: 05/21/91
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :WVOAIX1 JOB NUMBER :9101.163

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : METHOD BLANK 3 MATRIX: WATER
DATE OF ANALYSIS: 05/28/91
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	5.0		5.0
Acetone	PRESENT	L	10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	ND		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : METHOD BLANK 3 MATRIX: WATER
DATE OF ANALYSIS: 05/28/91
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Compound	E & E Laboratory No. 91-	Amount Added	Amount Determined	Percent Recovery
		(ug/L)		
1,2-Dichloroethane-d4	11282 RA	50	47	94
	11288 RA	50	50	100
	11306 RA	50	51	102
	11324 RA	50	51	102
	11354 RA	50	50	100
	11402 RA	50	47	94
	11414 RA	50	50	100
	11426 RA	50	50	100
	Blank	50	49	98
Toluene-d8	11282 RA	50	50	100
	11288 RA	50	50	100
	11306 RA	50	50	100
	11324 RA	50	51	102
	11354 RA	50	50	100
	11402 RA	50	49	98
	11414 RA	50	51	102
	11426 RA	50	49	98
	Blank	50	51	102
4-Bromofluorobenzene	11282 RA	50	43	86
	11288 RA	50	47	94
	11306 RA	50	44	88
	11324 RA	50	46	92
	11354 RA	50	46	92
	11402 RA	50	43	86
	11414 RA	50	44	88
	11426 RA	50	44	88
	Blank	50	46	92

These recoveries are acceptable to E & E, Inc. guidelines.

QUALITY CONTROL FOR ACCURACY AND PRECISION:
PERCENT RECOVERY AND RELATIVE PERCENT DIFFERENCE (RPD)
OF WATER MATRIX SPIKE (MS) AND MATRIX SPIKE DUPLICATE (MSD)
(Sample # 11264 - RA)

9101.163

(ug/L)

Compound	Original Result	Amount Added	Amount Determined MS	Amount Determined MSD	Percent Recovery MS	Percent Recovery MSD	RPD
1,1-Dichloroethene	ND	50	37	36	74	72	3
Trichloroethene	ND	50	45	43	90	86	4
Chlorobenzene	ND	50	46	48	92	96	4
Toluene	ND	50	48	49	96	98	2
Benzene	ND	50	48	47	96	94	2

These recoveries and RPDs are within E & E, Inc. limits.

ND - NOT DETECTED

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : METHOD BLANK MATRIX: WATER
DATE OF ANALYSIS: 06/05/91
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	PRESENT	L	5.0
Acetone	ND		10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	ND		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : METHOD BLANK MATRIX: WATER
DATE OF ANALYSIS: 06/05/91
SAMPLE LOCATION :

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

...ley Nuclear Services, Inc. P.O. Box 191, West Valley, NY 14171
CHAIN-OF-CUSTODY / REQUEST-FOR-ANALYSIS / PACKING SHEET

☐ SPDES ☒ GROUNDWATER ☐ POTABLE WATER ☐ OTHER

External Lab Destination: ESE

Purchase Order #: 19-49216 CRC

Charge # WHG100010

Release # 0029

Sample Custodian Signature: Linda M. Tingue

Report Format Level: (1) 2

Priority Code: 1 2

Report Data To: Jim Fox 942-4338

SAMPLE I.D. #	DATE	TIME	LOCATION CODE		PRES	# CONT	VOA App IX	TOC / TOX	Phenols	Anions	Total metals	Soluble metals		
91-03976	5/15/91	1605	WNGSEEP	11402	HCL	2 ~~3~~	X							Anions: NO_3, CL, SO_4
91-03977				3		1		X						CO_3, HCO_3
91-03978				4		1			X					
91-03979				5		1				X				Total & soluble metals
91-03980				6		1					X			Mn, Na, K, Ca,
91-03981				11407		1						X		Mg, Fe
91-03905		0830	WNW 8611	11408		3	X							
91-03906				9		1		X						
91-03910				10		1			X					
91-03907				11		1				X				
91-03908				12		1					X			
91-03909				11413		1						X		

Linda M. Tingue — RELEASED BY — 5/16/91 1615 — DATE / TIME

R Marsh — RECEIVED BY — 5/17/91 — DATE / TIME

RELEASED BY — DATE / TIME

RECEIVED BY — DATE / TIME

Sample Recei...
Cool: YES
Temp C

UV-1155, Rev. 2
UV-1001 Rev. 1

WVDP:0001106.RM

Pg 15 of 16

...ey Nuclear Services, Inc. P.O. Box 191, West Valley, NY 14171
CHAIN-OF-CUSTODY / REQUEST-FOR-ANALYSIS / PACKING SHEET

☐ SPDES ☒ GROUNDWATER ☐ POTABLE WATER ☐ OTHER

External Lab Destination: ESE

Purchase Order #: 19-49216 CRC

Charge # WH6100010

Release # 0029

Sample Custodian Signature:

Report Format Level: (1) 2

Priority Code: 1 2

Report Data To: Jim Fox 942-4338

SAMPLE I.D. #	DATE	TIME	LOCATION CODE		PRES	# CONT	VOA App IX	TOC / TOX	Phenols	Anions	Total Metals	Soluble Metals		
91-03932	5/15/91	1600 ~~0900~~	WNGSEEP	11426	HCL	3	X							Anions: NO_3, CL, SO_4,
91-03934				27		1		X						CO_3, HCO_3
91-03935				28		1			X					
91-03936				29		1				X				Total & Soluble metals:
91-03937				30		1					X			Mn, Na, K, Ca,
91-03938				11431		1						X		Mg, Fe
91-03942		1645	WNSP008	11432	HCL	3	X							
91-03943				33		1		X						
91-03944				34		1			X					
91-03945				35		1				X				
91-03947				36		1					X			
91-03948				11437		1						X		

Linda M. Tingue
RELEASED BY
5/16/91 1615
DATE / TIME

R. Marsh
RECEIVED BY
5/17/91
DATE / TIME

RELEASED BY
DATE / TIME

RECEIVED BY
DATE / TIME

Sample Receipt:
Cool: YES
Temp C

WV-[illegible]55, Rev. 2
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WVDP:0001106.RM

...lley Nuclear Services, Inc. P.O. Box 1... West Valley, NY 14171
CHAIN-OF-CUSTODY / REQUEST-FOR-ANALYSIS / PACKING SHEET

☐ SPDES ☒ GROUNDWATER ☐ POTABLE WATER ☐ OTHER

External Lab Destination: ESE

Purchase Order #: 19-49216 CRC

Charge # WHU100010

Release # 0029

Sample Custodian Signature: Linda M. Tingue

Report Format Level: 1 2

Priority Code: 1 2

Report Data To: Jim FOX 942-4...38

SAMPLE I.D. #	DATE	TIME	LOCATION CODE	PRES	# CONT	VOA App IX	TOC/TOX	Phenols	Anions	Total Metals	Soluable Metals		
91-03963	5/15/91	0900	WNW 8101-11438	HCL	2	X							
91-03986	5/16/91	0800	WNW 8101-11439	HCL	2	X							
91-03987	5/16/91	0800	WNW 8201-11440	HCL	2	X							

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY	Sample Receipt:
Linda M. Tingue	R. Marsh			Cool: YES ___ NO ___
5/16/91 1615	5/17/91			Temp C
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME	

WV-1155, Rev. 2
WV-1001, Rev. 1
MCW2039:5RM

WVDP:0001106.RM

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Vey Nuclear Services, Inc. P.O. Box 191, West Valley, NY 14171
CHAIN-OF-CUSTODY / REQUEST-FOR-ANALYSIS / PACKING SHEET

☐ SPDES ☒ GROUNDWATER ☐ POTABLE WATER ☐ OTHER

External Lab Destination: E S E

Purchase Order #: 19-49216 CRC

Charge # WHG100010

Release # 0039

Sample Custodian Signature: Linda M. Tingue

Analysis Requested

Report Format Level: 1 2

Priority Code: 1 2

Report Data To: Jim Fox 942-4338

SAMPLE I.D. #	DATE	TIME	LOCATION CODE		PRES	# CONT	VOA Aro TX	TOC / TOX	Phenols	Anions	Total Metals	Soluble Metals	
91-03976	5/15/91	1605	WNGDEEP	11402	HCL	2 3	X						Anions NO_3, CL, SO_4, CO_3, HCO_3
91-03977				3		1		X					
91-03978				4		1			X				
91-03979				5		1				X			Total & soluble metals Mn, Na, K, Ca, Mg, Fe
91-03980				6		1					X		
91-03981				11407		1						X	
91-03905		0830	WNW 8611	11408		3	X						
91-03906				9		1		X					
91-03910				10		1			X				
91-03907				11		1				X			
91-03908				12		1					X		
91-03909				11413		1						X	

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY	Sample Recei-
Linda M. Tingue	R Mont			Cool: YES
5/16/91 1615	5/17/91			Temp C
TE / TIME	DATE / TIME	DATE / TIME	DATE / TIME	

.155, Rev. 2
UV-1001 Rev. 1

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.ey Nuclear Services, Inc. P.O. Box 191, West Valley, NY 14171
CHAIN-OF-CUSTODY / REQUEST-FOR-ANALYSIS / PACKING SHEET

☐ SPDES ☒ GROUNDWATER ☐ POTABLE WATER ☐ OTHER

External Lab Destination: ESE

Purchase Order #: 19-49216 CRC

Charge # WH6100010

Release # 0029

Sample Custodian Signature:

Analysis Requested

Report Format Level: (1) 2

Priority Code: 1 2

Report Data To: Jim Fox 942-4338

SAMPLE I.D. #	DATE	TIME	LOCATION CODE		PRES	# CONT	VOA Ann IX	TOC / TOX	Phenols	Anions	Total Metals	Soluble Metals		
91-03932	5/15/91	1600 ~~0700~~	WNGSEEP	11426	HCL	3	X							Anions: NO_3, CL, SO_4,
91-03934				27		1		X						CO_3, HCO_3
91-03935				28		1			X					
91-03936				29		1				X				Total & Soluble metals:
91-03937				30		1					X			Mn, Na, K, Ca,
91-03938				11431		1						X		Mg, Fe
91-03942		1645	WNSP008	11432	HCL	3	X							
91-03943				33		1		X						
91-03944				34		1			X					
91-03945				35		1				X				
91-03947				36		1					X			
91-03948				11437		1						X		

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY	Sample Rece'
Linda M. Tingue	R. Marsh			Cool: YES
5/16/91 1615	5/17/91			Temp C
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME	

WV-1155, Rev. 2
WV-1001, Rev. 1

WVDP:0001106 RM

ley Nuclear Services, Inc. P.O. Box 19 West Valley, NY 14171
CHAIN-OF-CUSTODY / REQUEST-FOR-ANALYSIS / PACKING SHEET

☐ SPDES ☒ GROUNDWATER ☐ POTABLE WATER ☐ OTHER

External Lab Destination:	Purchase Order #:	Analysis Requested	Report Format Level:
ESE	19-49216 CRC		(1) 2
Charge # WH6100010	Release # 0029		Priority Code: 1 2
Sample Custodian Signature: Linda M. Ingue			Report Data To: Jim Fox 942-4338

SAMPLE I.D. #	DATE	TIME	LOCATION CODE	PRES	# CONT	VOA App IX	TOC / TOX	Phenols	Anions	Total metals	Soluble metals	
91-03963	5/15/91	0900	WNW 8101 / 11438	HCL	2	X						
91-03986	5/16/91	0800	WNW 8101 / 11439	HCL	2	X						
91-03987	5/16/91	0800	WNW 8201 / 11440	HCL	2	X						

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY
Linda M. Ingue	R. Marsh		
5/16/91 1615	5/17/91		
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME

Sample Receipt:
Cool: YES ___ NO ___
Temp C

WV-1155, Rev. 2
WV-1001, Rev. 1
MCW2039:5RM

JULY 10, 1991

PARAMETER	METHOD
Volatile Organics Appendix IX	Method 8240 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, Third Edition, U.S. EPA, 1986.
Total Organic Carbon	Method 415.2 - "Methods for the Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983.
Total Organic Halogens	Method 9020 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, Third Edition, U.S. EPA, 1986.

LAB SAMPLE ID	CLIENT SAMPLE ID	TEST CODE	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED
15598.01	91-05900	WVOAIX1	07/10/91		07/18/91
15599.01	91-05992	WVOAIX1	07/10/91		07/18/91
15600.01	91-05987	WVOAIX1	07/10/91		07/18/91
15600.01	91-05987 RA	WVOAIX1	07/10/91		07/18/91
15601.01	91-05865	WVOAIX1	07/10/91		07/18/91
15602.01	91-05870	WVOAIX1	07/10/91		07/18/91
15603.01	91-06130	WVOAIX1	07/10/91		07/18/91
15604.01	91-05963	WVOAIX1	07/10/91		07/18/91
15604.01	91-05963 RA	WVOAIX1	07/10/91		07/18/91
15605.01	91-05880	WVOAIX1	07/10/91		07/18/91
15606.01	91-05885	WVOAIX1	07/10/91		07/18/91
15607.01	91-05890	WVOAIX1	07/10/91		07/18/91
15608.01	91-05905	WVOAIX1	07/10/91		07/18/91
15609.01	91-05895	WVOAIX1	07/10/91		07/18/91
15610.01	91-05850	WVOAIX1	07/10/91		07/18/91
15611.01	91-05967	WVOAIX1	07/10/91		07/18/91
15612.01	91-05972	WVOAIX1	07/11/91		07/18/91
15613.01	91-06129	WVOAIX1	07/10/91		07/18/91
15614.01	91-05902	WTOC 1	07/10/91		07/15/91
		WTOX 1	07/10/91		07/16/91
15615.01	91-05994	WTOC 1	07/10/91		07/15/91
		WTOX 1	07/10/91		07/16/91
15616.01	91-05989	WTOC 1	07/10/91		07/15/91
		WTOX 1	07/10/91		07/16/91
15617.01	91-05867	WTOC 1	07/10/91		07/15/91
		WTOX 1	07/10/91		07/16/91
15618.01	91-05872	WTOC 1	07/10/91		07/15/91
		WTOX 1	07/10/91		07/16/91
15619.01	91-06133	WTOC 1	07/10/91		07/15/91
		WTOX 1	07/10/91		07/27/91
15620.01	91-05932	WTOC 1	07/10/91		07/15/91
		WTOX 1	07/10/91		07/27/91
15621.01	91-05882	WTOC 1	07/10/91		07/15/91
		WTOX 1	07/10/91		07/27/91
15622.01	91-05887	WTOC 1	07/10/91		07/15/91
		WTOX 1	07/10/91		07/27/91
15623.01	91-05892	WTOC 1	07/10/91		07/15/91
		WTOX 1	07/10/91		07/17/91
15624.01	91-05907	WTOC 1	07/10/91		07/15/91
		WTOX 1	07/10/91		07/18/91
15625.01	91-05897	WTOC 1	07/10/91		07/15/91
		WTOX 1	07/10/91		07/17/91
15626.01	91-05852	WTOC 1	07/10/91		07/15/91
		WTOX 1	07/10/91		07/17/91
15627.01	91-05869	WTOC 1	07/10/91		07/15/91
		WTOX 1	07/10/91		07/17/91

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY
FOR SPIKED WATER SAMPLES

(ug/L)

Parameter	E & E Laboratory No. 91-	Original Value	Amount Added	Amount Determined	Percent Recovery
Total Organic Halogens	15624	24	50	65	82

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-15600 MATRIX: WATER
SAMPLE ID CLIENT: 91-05987
SAMPLE LOCATION : WNGSEEP

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	5.0	B	5.0
Acetone	PRESENT	L	10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	6.0		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-15600 MATRIX: WATER
SAMPLE ID CLIENT: 91-05987
SAMPLE LOCATION : WNGSEEP

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-15600 RA MATRIX: WATER
SAMPLE ID CLIENT: 91-05987
SAMPLE LOCATION : WNGSEEP

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	9.0	B	5.0
Acetone	17		10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	6.0		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-15600 RA MATRIX: WATER
SAMPLE ID CLIENT: 91-05987
SAMPLE LOCATION : WNGSEEP

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-15603 MATRIX: WATER
SAMPLE ID CLIENT: 91-06130
SAMPLE LOCATION : WNW8201

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	5.0	B	5.0
Acetone	14		10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	ND		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-15603 MATRIX: WATER
SAMPLE ID CLIENT: 91-06130
SAMPLE LOCATION : WNW8201

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-15613 MATRIX: WATER
SAMPLE ID CLIENT: 91-06129
SAMPLE LOCATION : WNW8101

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	7.0	B	5.0
Acetone	PRESENT	L	10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	ND		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-15613 MATRIX: WATER
SAMPLE ID CLIENT: 91-06129
SAMPLE LOCATION : WNW8101

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

QUALITY CONTROL FOR ACCURACY AND PRECISION:
PERCENT RECOVERY AND RELATIVE PERCENT DIFFERENCE (RPD)
OF WATER MATRIX SPIKE (MS) AND MATRIX SPIKE DUPLICATE (MSD)
(Sample # 15604)

9101.662

(ug/L)

Compound	Original Result	Amount Added	Amount Determined MS	Amount Determined MSD	Percent Recovery MS	Percent Recovery MSD	RPD
1,1-Dichloroethene	ND	50	43	49	86	98	13
Trichloroethene	ND	50	50	54	100	108	8
Chlorobenzene	ND	50	49	54	98	108	10
Toluene	ND	50	49	55	98	110	12
Benzene	ND	50	48	52	96	104	8

These recoveries and RPDs are within E & E, Inc. limits.

ND - NOT DETECTED

QUALITY CONTROL FOR ACCURACY AND PRECISION:
PERCENT RECOVERY AND RELATIVE PERCENT DIFFERENCE (RPD)
OF WATER MATRIX SPIKE (MS) AND MATRIX SPIKE DUPLICATE (MSD)
(Sample # 15607)

9101.662

(ug/L)

Compound	Original Result	Amount Added	Amount Determined MS	Amount Determined MSD	Percent Recovery MS	Percent Recovery MSD	RPD
1,1-Dichloroethene	ND	50	42	43	84	86	2
Trichloroethene	ND	50	49	50	98	100	2
Chlorobenzene	ND	50	49	50	98	100	2
Toluene	ND	50	48	50	96	100	4
Benzene	ND	50	48	49	96	98	2

These recoveries and RPDs are within E & E, Inc. limits.

ND - NOT DETECTED

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY OF SURROGATE SPIKES

9101.662

Compound	E & E Laboratory No. 91-	Amount Added	Amount Determined	Percent Recovery
		(ug/L)		
1,2-Dichloroethane-d4	15598	50	47	94
	15599	50	47	94
	15600	50	47	94
	15600 RA	50	45	90
	15601	50	53	106
	15602	50	49	98
	15603	50	54	108
	15604	50	51	102
	15604 RA	50	44	88
	15605	50	48	96
Toluene-d8	15598	50	43	86
	15599	50	50	100
	15600	50	50	100
	15600 RA	50	45	90
	15601	50	52	104
	15602	50	49	98
	15603	50	55	110
	15604	50	51	102
	15604 RA	50	45	90
	15605 RA	50	50	100
4-Bromofluorobenzene	15598	50	44	88
	15599	50	44	88
	15600	50	45	90
	15600 RA	50	42	84
	15601	50	49	98
	15602	50	45	90
	15603	50	50	100
	15604	50	46	92
	15604 RA	50	41	82
	15605	50	45	90

These recoveries are acceptable to E & E, Inc. guidelines.

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY OF SURROGATE SPIKES

9101.662

Compound	E & E Laboratory No. 91-	Amount Added	Amount Determined	Percent Recovery
		(ug/L)		
1,2-Dichloroethane-d4	15606	50	48	96
	15607	50	50	100
	15608	50	50	100
	15609	50	52	104
	15610	50	44	88
	15611	50	55	110
	15612	50	52	104
	15613	50	51	102
	Blank 1	50	48	96
	Blank 2	50	45	90
Toluene-d8	15606	50	47	94
	15607	50	49	98
	15608	50	49	98
	15609	50	50	100
	15610	50	44	88
	15611	50	55	110
	15612	50	53	106
	15613	50	51	102
	Blank 1	50	51	102
	Blank 2	50	47	94
4-Bromofluorobenzene	15606	50	42	84
	15607	50	45	90
	15608	50	45	90
	15609	50	47	94
	15610	50	40	80
	15611	50	50	100
	15612	50	50	100
	15613	50	48	96
	Blank 1	50	47	94
	Blank 2	50	43	86

These recoveries are acceptable to E & E, Inc. guidelines.

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : METHOD BLANK 1 MATRIX: WATER
DATE OF ANALYSIS: 7-18-91

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	6.0		5.0
Acetone	ND		10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	ND		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : METHOD BLANK 1 MATRIX: WATER
DATE OF ANALYSIS: 7-18-91

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : METHOD BLANK 2 MATRIX: WATER
DATE OF ANALYSIS: 7-18-91

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	8.0		5.0
Acetone	ND		10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	ND		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : METHOD BLANK 2 MATRIX: WATER
DATE OF ANALYSIS: 7-18-91

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

6391

West Valley Nuclear Services, Inc. P.O. Box 191, West Valley, NY 14171

CHAIN-OF-CUSTODY / REQUEST-FOR-ANALYSIS / PACKING SHEET

9101 920

WVDP:0001106.RM

☐ SPDES ☒ GROUNDWATER ☐ POTABLE WATER ☐ OTHER

31

External Lab Destination:	Purchase Order #:	Analysis Requested	Report Format Level:
E S E	19-49216 CRC		1 2
Charge # WH6100010	Release # 0048		Priority Code: 1 2

Sample Custodian Signature: Linda M. Tingue

Report Data To: Jim Fox 942-4338.

SAMPLE I.D. #	DATE	TIME	LOCATION CODE	PRES	# CONT	VOA App IX	TOC / TOX							
91-05900	7/10/91	11:00	WNW0803	HCL	3	X								15598
91-05902		"	↓	H_2SO_4	1		X							15614
91-05992		1345	WNSP008	HCL	3	X								15599
91-05994		"	↓	H_2SO_4	1		X							15615
91-05987		1300	WNGSEEP	HCL	3	X								15600
91-05989		↓	↓	H_2SO_4	1		X							15616
91-05865		1400	WNW0109	HCL	3	X		* 1 BROKEN ON RCPT						15601
91-05867		↓	WNW0109	H_2SO_4	1		X							15617
91-05870		1430	WNW0110	HCL	3	X								15602
91-05872		↓	↓	H_2SO_4	1		X							15618
91-06130		1415	WNW8201	HCL	3	X								15603
91-06133	↓	↓	↓	H_2SO_4	1		X							15619

Linda M. Tingue	AIRBORNE EXPRESS	AIRBORNE EXPRESS	Rich Marsh E&E	Sample
RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY	Cool:
7/11/91 1415			0930	Temp C
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME 7/12/91	

WV-1155, Rev. 2

WV-1001, Rev. 1

Valley Nuclear Services, Inc. P.O.
CHAIN-OF-CUSTODY / REQUEST FORM

☐ SPDES ☒ GROUNDWATER ☐ POTABLE WATER ☐ OTHER

Internal Lab Destination:	Purchase Order #:	Analysis Requested	Report Format Level:
E & E	19-49216 CRC		(1) 2
Charge # WH6100010	Release # 0045		Priority Code: 1 2

Sample Custodian Signature: Linda M. Tingue

Report Data To: Jim Fox 942-4338

SAMPLE I.D. #	DATE	TIME	LOCATION CODE	PRES	# CONT	VOA App IX	TOC/TOC						
91-05977	7/9/91	1220	WNW8612	HCL	3	X							
91-05979	↓	"	↓	H_2SO_4	1		X						
91-05982	↓	1145	WNDMPNE	HCL	3	X							
91-05984	↓	"	↓	H_2SO_4	1		X						
91-06054	7/8/91	0715	WNW8101	HCL	2	X							
91-06055	↓	1135	WNW8201	HCL	2	X							
91-06057	7/9/91	0745	WNW8101	HCL	2	X							
91-06058	7/9/91	1230	WNW8201	HCL	2	X							

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY	Sample Cool: Temp C
Linda M Tingue				
1615 7/9/91				
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME	

NV-1155, Rev. 2

WVDP:0001106.RM

WVDP-RFI-002
Rev. 0
Page 245 of 319

AUGUST 21, 1991

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-19840 MATRIX: WATER
SAMPLE ID CLIENT: 91-07358
SAMPLE LOCATION : WNGSEEP

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	PRESENT	LB	5.0
Acetone	PRESENT	LB	10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	5.0		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-19840 MATRIX: WATER
SAMPLE ID CLIENT: 91-07358
SAMPLE LOCATION : WNGSEEP

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-19840 RA MATRIX: WATER
SAMPLE ID CLIENT: 91-07358
SAMPLE LOCATION : WNGSEEP

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	PRESENT	LB	5.0
Acetone	PRESENT	LB	10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	6.0		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-19840 RA MATRIX: WATER
SAMPLE ID CLIENT: 91-07358
SAMPLE LOCATION : WNGSEEP

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-19846 MATRIX: WATER
SAMPLE ID CLIENT: 91-07481
SAMPLE LOCATION : WNW8101

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	ND		5.0
Acetone	PRESENT	LB	10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	ND		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-19846 MATRIX: WATER
SAMPLE ID CLIENT: 91-07481
SAMPLE LOCATION : WNW8101

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-19847 MATRIX: WATER
SAMPLE ID CLIENT: 91-07482
SAMPLE LOCATION : WNW8201

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	PRESENT	LB	5.0
Acetone	ND		10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	ND		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-19847 MATRIX: WATER
SAMPLE ID CLIENT: 91-07482
SAMPLE LOCATION : WNW8201

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY OF SURROGATE SPIKES

Compound	E & E Laboratory No. 91-	Amount Added	Amount Determined	Percent Recovery
		(ug/L)		
1,2-Dichloroethane-d4	19840	50	51	102
	19840 RA	50	60	120 H
	19841	50	52	104
	19842	50	43	86
	19843	50	51	102
	19844	50	48	96
	19845	50	53	106
Toluene-d8	19840	50	43	86
	19840 RA	50	59	118 H
	19841	50	45	90
	19842	50	47	94
	19843	50	48	96
	19844	50	48	96
	19845	50	52	104
4-Bromofluorobenzene	19840	50	42	84
	19840 RA	50	52	104
	19841	50	42	84
	19842	50	40	80
	19843	50	42	84
	19844	50	41	82
	19845	50	45	90

With the exception of those recoveries flagged "H", these recoveries are acceptable to E & E, Inc. guidelines.

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY OF SURROGATE SPIKES

Compound	E & E Laboratory No. 91-	Amount Added	Amount Determined	Percent Recovery
		(ug/L)		
1,2-Dichloroethane-d4	19846	50	54	108
	19847	50	55	110
	19848	50	54	108
	19849	50	55	110
	Blank 1	50	48	96
	Blank 2	50	53	106
	Blank 3	50	52	104
Toluene-d8	19846	50	54	108
	19847	50	53	106
	19848	50	54	108
	19849	50	50	100
	Blank 1	50	44	88
	Blank 2	50	52	104
	Blank 3	50	53	106
4-Bromofluorobenzene	19846	50	47	94
	19847	50	46	92
	19848	50	48	96
	19849	50	44	88
	Blank 1	50	41	82
	Blank 2	50	47	94
	Blank 3	50	48	96

These recoveries are acceptable to E & E, Inc. guidelines.

☐ SPDES ☑ GROUNDWATER ☐ POTABLE WATER ☐ OTHER

External Lab Destination:	Purchase Order #:	Analysis Requested	Report Format Le
Ecology & Environment	19-49216-CRC		1 2
Charge # WH6100010	Release # 0058		Priority Code 1 2
Sample Custodian Signature: Linda M. Jingue			Report Data To Jim Fox (716) 942-43

SAMPLE I.D. #	DATE	TIME	LOCATION CODE	PRES	# CONT	VOA	App IX	TOC/TOX							
91-07259	8/20	1030	WNW0107	H_2SO_4	1			X							
91-07262		1130	WNW0108	cool	3	X									
91-07264		"	"	H_2SO_4	1			X							
91-07449	8/20	0815	WNW8101	cool	2	X									
91-07341	8/20	1500	WNW8201	cool	3	X									
91-07452	8/20	"	"	H_2SO_4	1			X							

will call with missing sampl. ID's on Wed. computer was down.

Sample ID per phone call from Kim Grasso 8/20/90

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY
Linda M. Jingue			
DATE / TIME 8/20/90 16:15	DATE / TIME	DATE / TIME	DATE / TIME

WV-1155, Rev. 2
WV-10 , Rev. 1
MCW2039-5RM

WVDP:0001106.RM

WVDP-RFI-002
Rev. 0
Page 258 of 319

est Valley Nuclear Services, Inc. P.O Box 191, West Valley, NY 71

CHAIN-OF-CUSTODY / REQUEST-FOR-ANALYSIS / PACKING SHEET

☐ SPDES ☒ GROUNDWATER ☐ POTABLE WATER ☐ OTHER

External Lab Destination: Ecology & Environment

Purchase Order #: 19-49216-CRC

Charge # WH6100010

Release # 0059

Report Format Level: 1 2

Priority Code: 1 2

Report Data To: Jim Fox (716) 942-4338

ample Custodian Signature: Linda M. Tingue

SAMPLE I.D. #	DATE	TIME	LOCATION CODE	PRES	# CONT	VOA APP 9	TOC/TOX					
91-07358	8-21-91	9:30	WNGSEEP	COOL	3	X						
91-07360	"	"	"	H_2SO_4	1		X					
91-07242	8-21-91	13:45	WNW0104	cool	3	X						
91-07244	"	"	"	H_2SO_4	1		X					
91-07267	"	10:00	WNW0109	cool	3	X						
91-07269	"	"	"	H_2SO_4	1		X					
91-07272	"	10:30	WNW0110	cool	3	X						
91-07274	"	"	"	H_2SO_4	1		X					
91-07310	"	1445	WNW8603	cool	3	X						
91-07312	"	"	"	H_2SO_4	1		X					
91-07348	"	1330	WNW8611	cool	3	X						
91-07350	"	"	"	H_2SO_4	1		X					

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY
Linda M. Tingue	C.M. Wistmah	C.M. Wistmah	John M. Stark
8/22/91 1615	8/22/91 1648	8/22/91 1813	8/22/91 - 18:13
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME

IV-1155, Rev. 2
WV-1001, Rev. 1

WVDP:0001106.RM

OCTOBER 9, 1991

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-23373 MATRIX: WATER
SAMPLE ID CLIENT: 91-09133
SAMPLE LOCATION : WNGSEEP

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	8.0	B	5.0
Acetone	ND		10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	ND		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-23373 MATRIX: WATER
SAMPLE ID CLIENT: 91-09133
SAMPLE LOCATION : WNGSEEP

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-23374 MATRIX: WATER
SAMPLE ID CLIENT: 91-09278
SAMPLE LOCATION : WNW8201

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	7.0	B	5.0
Acetone	ND		10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	ND		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-23374 MATRIX: WATER
SAMPLE ID CLIENT: 91-09278
SAMPLE LOCATION : WNW8201

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-23383 MATRIX: WATER
SAMPLE ID CLIENT: 91-09283
SAMPLE LOCATION : WNW8101

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	7.0	B	5.0
Acetone	ND		10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	ND		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-23383 MATRIX: WATER
SAMPLE ID CLIENT: 91-09283
SAMPLE LOCATION : WNW8101

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY OF SURROGATE SPIKES

9102.444

Compound	E & E Laboratory No. 91-	Amount Added	Amount Determined	Percent Recovery
		(ug/L)		
1,2-Dichloroethane-d4	23373	50	69	138
	23374	50	65	130
	23375	50	58	116
	23376	50	63	126
	23377	50	59	118
	23378	50	50	100
	23379	50	63	126
	23380	50	58	116
	23381	50	59	118
	23382	50	59	118
	23383	50	61	122
	Method Blank	50	55	110
Toluene-d8	23373	50	65	130
	23374	50	69	138
	23375	50	53	106
	23376	50	59	118
	23377	50	59	118
	23378	50	60	120
	23379	50	60	120
	23380	50	58	116
	23381	50	60	120
	23382	50	60	120
	23383	50	58	116
	Method Blank	50	57	114
4-Bromofluorobenzene	23373	50	51	102
	23374	50	53	106
	23375	50	43	86
	23376	50	49	98
	23377	50	46	92
	23378	50	47	94
	23379	50	47	94
	23380	50	47	94
	23381	50	47	94
	23382	50	47	94
	23383	50	46	92
	Method Blank	50	47	94

These recoveries are acceptable to EPA QC advisory guidelines.

st Valley Nuclear Services, Inc. P.O. Box 191, ... Valley, NY 14171

CHAIN-OF-CUSTODY / REQUEST FOR ANALYSIS PACKING SHEET ELECTRONIC DISK TRANSMITTAL YES NO

☐ SPDES ☒ GROUNDWATER ☐ POTABLE WATER ☐ OTHER

9102.444
920

2/SAMPLES

WVDP:0001106.RM

External Lab Destination: E & E

Purchase Order #: 19-49216-CRC

Charge # WH6100010 [illegible]

Release # 0083

Report Format Level: 1 2

Priority Code: 1 2

Sample Custodian Signature: Linda M. Gerwitz

Report Data To: Jim Fox 942-4338

SAMPLE I.D. #	DATE	TIME	LOCATION CODE	PRES	# CONT	VOA App IX	TOC/TOX						Report Format Level
91-09133	10/4/91	1230	WNGSEEP	cool	3								-23373
91-09134	"	"	"	H_2SO_4	1								-23384
91-09278	"	1215	WNW8201	cool	3								-23374
91-09280	"	"	"	H_2SO_4	1								23385
91-09136	"	1215	WNSP008	cool	3								-23375
91-09138	"	1215	"	H_2SO_4	1								23386
91-09074	"	1000	WNW0115	cool	3								-23376
91-09076	"	"	"	H_2SO_4	1								23387
91-09147	"	1000	WNW0115	cool	3								-2337
91-09153	"	"	"	H_2SO_4	1								23388
91-09148	"	1115	WNW0803	cool	3								-2378
91-09154	"	"	"	H_2SO_4	1								23389

Linda M. Gerwitz	[illegible]	[illegible]	[illegible]
RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY
10-9-91 1630	10-9-91 1630	10-9-91 1735	10/9/91 17:35
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME

V-1155, Rev. 2

NV-1001, Rev. 1

WVDP-RFI-002
Rev. 0
Page 267 of 319

External Lab Destination: E & E

Purchase Order #: 19-49216 CRC

Charge # 0083

Release # 0083

Sample Custodian Signature: Linda M. Gerwitz

Analysis Requested

Report Format Lev 1 2

Priority Code 1 2

Report Data To Jim Fox 942-4335

SAMPLE I.D. #	DATE	TIME	LOCATION CODE	PRES	# CONT	VOA App II	TOC / TOX							
91-09078	10/9/91	10:15	WNW0116	cool	3	X								— 23379
91-09080	"	"	"	H_2SO_4	1		X							23390
91-09086	"	1130	WNW0802	cool	3	X								— 23380
91-09088	"	"	"	H_2SO_4	1		X							23391
91-09050	"	1030	WNW0106	cool	3	X								— 23381
91-09052	"	"	"	H_2SO_4	1		X							23392
91-09090	"	1115	WNW0803	cool	3	X								— 23382
91-09092	"	"	"	H_2SO_4	1		X							23393
91-09283	"	0845	WNW8101	cool	2	X								— 23383

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY
Linda M. Gerwitz	[illegible]	[illegible]	Gary A Benson
10-9-91 1630	10-9-91 1630	10-9-91 1735	10/9/91 17:35
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME

WV-1155, Rev. 2
WV-10 , Rev. 1
MCW2039.5RM

NOVEMBER 21, 1991

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-27339 MATRIX: WATER
SAMPLE ID CLIENT: 91-10757
SAMPLE LOCATION : WNGSEEP

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	6.0	B	5.0
Acetone	ND		10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	6.0		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-27339 MATRIX: WATER
SAMPLE ID CLIENT: 91-10757
SAMPLE LOCATION : WNGSEEP

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-27334 MATRIX: WATER
SAMPLE ID CLIENT: 91-10815
SAMPLE LOCATION : WNGSEEP

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	PRESENT	LB	5.0
Acetone	ND		10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	7.0		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-27334 MATRIX: WATER
SAMPLE ID CLIENT: 91-10815
SAMPLE LOCATION : WNGSEEP

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-27334 RA MATRIX: WATER
SAMPLE ID CLIENT: 91-10815
SAMPLE LOCATION : WNGSEEP

PARAMETER	RESULTS	Q	QNT. LIMIT
Dichlorodifluoromethane	ND		5.0
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Trichlorofluoromethane	ND		5.0
Acrolein	ND		100
Methylene Chloride	PRESENT	LB	5.0
Acetone	PRESENT	L	10
Methyl Iodide	ND		5.0
Carbon Disulfide	ND		5.0
Allyl Chloride	ND		10
Acetonitrile	ND		1000
1,1-Dichloroethene	ND		5.0
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethene (total)	ND		5.0
Acrylonitrile	ND		100
Chloroprene	ND		5.0
Propionitrile	ND		10
Chloroform	ND		5.0
Methacrylonitrile	ND		5.0
Isobutanol	ND		100
1,2-Dichloroethane	ND		5.0
2-Butanone	ND		10
1,1,1-Trichloroethane	7.0		5.0
Carbon Tetrachloride	ND		5.0
Vinyl Acetate	ND		10
Bromodichloromethane	ND		5.0
Methylene Bromide	ND		5.0
1,2-Dichloropropane	ND		5.0
Methyl Methacrylate	ND		5.0
1,4-Dioxane	ND		150
cis-1,3-Dichloropropene	ND		5.0
Trichloroethene	ND		5.0
Dibromochloromethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Benzene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : WEST VALLEY NUCLEAR SERVICES CO., INC.
TEST NAME : VOA APPENDIX IX UNITS : UG/L
SAMPLE ID LAB : EE-91-27334 RA MATRIX: WATER
SAMPLE ID CLIENT: 91-10815
SAMPLE LOCATION : WNGSEEP

PARAMETER	RESULTS	Q	QNT. LIMIT
Pyridine	ND		1000
Bromoform	ND		5.0
4-Methyl-2-pentanone	ND		10
Ethyl Methacrylate	ND		5.0
2-Hexanone	ND		10
1,2-Dibromoethane	ND		5.0
Tetrachloroethene	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Toluene	ND		5.0
Chlorobenzene	ND		5.0
2-Picoline	ND		1000
1,1,1,2-Tetrachloroethane	ND		5.0
Ethylbenzene	ND		5.0
Xylene (m + p)	ND		5.0
Styrene	ND		5.0
Xylene (o)	ND		5.0
1,2,3-Trichloropropane	ND		5.0
Trans-1,4-Dichloro-2-butene	ND		5.0
Pentachloroethane	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Valley Nuclear Services, Inc. P.O. Box ...

1406

CHAIN-OF-CUSTODY / REQUEST-FOR-ANALYSIS / PACKING SHEET / ELECTRONIC DISK TRANSMITTAL

920

NO- 1...7

SPDES ☒ GROUNDWATER ☐ POTABLE WATER ☐ OTHER

WVDP:0001106.RM

Internal Lab Destination:	Purchase Order #:	Analysis Requested	Report Format Level:
E&E	19-49216-CRC		(1) 2
Charge # WH61000100	Release # 0116		Priority Code: 1 2
Sample Custodian Signature: Linda M. Genuth			Report Data To: Jim Fox (716) 942-4338

SAMPLE I.D. #	DATE	TIME	LOCATION CODE	PRES	# CONT	VOA App IX	TOC/TOX	Anions	NO_2+NO_3	Total Drinking water metals	Soluble Dr. water metals	**	Phenols	
91-10815	11/21/91	1100	WNGSEEP	HCL	3	X		27	33	4				Drinking water metals to include: As, Cd, Hg, Ag, Ba, Cr, Pb, Se, Na, Mn, Fe, Ca, K, Mg.
91-10817				H_2SO_4	1		X		27	37	6			
91-10819	Additional sample was sent on rel. 128- for Sulfate			cool	1			X		27	35	6		
91-10824				H_2SO_4	1				X		27	36	6	** Drinking water Pesticides & Herbicides to include: 2,4,5-TP (silvex) 2,4-D Lindane, Endrin, Toxaphene, Methoxychlor
91-10820				HNO_3	1		2	73	97	X				
91-10821				HNO_3	1		2	74	07		X			
91-10822				cool	2				27	34	6	X		
91-10818				H_2SO_4	1					27	38	7	X	
91-10579		1200	WNW0115	HCL	3	X		27	33	5				Anions to include: SO4, CL, F, CO3, HCO
91-10581				H_2SO_4	1		X		27	37	7			
91-10588				H_2SO_4	1				X		27	36	7	
91-10584				HNO_3	1		2	73	98	X				

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY
Linda M. Genuth	M J [illegible]	M J [illegible]	R. Marsh E&E
11/21/91 1630	11/21/91 1630	11/21/91	11/4/91 1730
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME

...-1155, R... 2

V-1001, ...v. 1

WVDP-RFI-002 Rev. 0

Page 276 of 31...

CHAIN-OF-CUS[redacted]Y / REQUEST-F[redacted] ANALYSIS[redacted] PACKING SHEET ELECTRONIC D[redacted] TRANSMITTAL YES-✓ NO-

SPDES ☒ GROUNDWATER ☐ POTABLE WATER ☐ OTHER

4 of 7

WVDP:0001106.RM

rnal Lab Destination: E&E	Purchase Order #: 19-49216-CRC
ge # WH6100010	Release # 0116
le Custodian Signature: Linda M. Gerwitz	

Report Format Level: 1 2

Priority Code: 1 2

Report Data To: Jim Fox (716) 942-4338

E I.D. #	DATE	TIME	LOCATION CODE	PRES	# CONT	VOA App II	TOC/TOX	Anions	NO_2+NO_3	Total Drinking water metals	Soluble Dr. water metals	**	Phenols	
-10772 ✓	11/21/91	1200	WNSP008	H_2SO_4	1				2	73	90		X	Drinking water metals to include: As, Cd,
-10757 ✓		1100	WNGSEEP	HCL	3	X		27	33	9				Hg, Ag, Ba, Cr, Pb, Se, Na, Mn, Fe, Ca, K
-10759 ✓				H_2SO_4	1		X		27	38	1			Mg.
-10761 ✓				cool	1			X		27	36	0		** Drinking water Pesticides & Herbicides
-10766 ✓				H_2SO_4	1				X		27	37	1	to include: 2,4,5-TP (silvex)
-10762 ✓				HNO_3	1	2	74	02		X				2,4-D Lindane, Endrin,
-10763 ✓				HNO_3	1		2	74	11		X			Toxaphene, Methoxychlor
-10764 ✓				cool	2				27	35	0	X		
-10760 ✓				H_2SO_4	1				2	73	91		X	Anions to include: SO_4, Cl, F, CO_3^-, HCO
-10733 ✓		1430	WNW8612	HCL	3	X		27	34	0				
-10735 ✓				H_2SO_4	1		X		27	38	2			
-10737 ✓				cool	1			X		27	36	1		

...a M. Gerwitz	M J S J	M J S J	R. Marsh
LEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY
1/91 1630	11/21/91 1630	11/21/91	11/21/91 1730
TE / TIME	DATE / TIME	DATE / TIME	DATE / TIME

155, Rev. 2

1001 Rev. 1

External Lab Destination: ESE

Purchase Order #: 19-49216-CRC

Charge # WH6100010

Release # 0116

Sample Custodian Signature: Linda M. Genetz

Analysis Requested

Report Format Level: 1 2

Priority Code: 1 2

Report Data To: Jim Fox (716) 942-4338

SAMPLE I.D.	DATE	TIME	LOCATION CODE	PRES	CONT	VOA App IX	TOC/TOX	Anions	NO_2+NO_3	Total Drinking water metals	Soluble Or. water metals	**	Phenols	
91-10807	11/21/91	1430	WNW 8612	H_2SO_4	1				2	73	93		X	Drinking water me to Include: As,
91-10745		1415	WNOMPNE	HCL	3	X		37	34	2				Hg, Ag, Ba, Cr, F Se, Na, Mn, Fe,
91-10747				H_2SO_4	1		X		27	38	4			Mg.
91-10749				COOL	1			X		27	36	3		** Drinking wa Pesticides & Herbic
91-10754				H_2SO_4	1				X		27	37	4	to Include: 2,4,5-TP (silv
91-10750				HNO_3	1	2	74	05		X				2,4-D Lindane, Endri
91-10751				HNO_3	1		2	74	14		X			Toxaphene, Methoxychlor
91-10752				COOL	2				27	35	3	X		
91-10748				H_2SO_4	1				2	73	94		X	Anions to incl SO_4, Cl, F, CO_3
91-11472		1000	WNW8101	HCL	2	X		27	34	3				
91-10556		1445	WNW0110	HCL	3	X		27	34	4				
91-10558		"	"	H_2SO_4	1		X		27	38	5			

RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY
Linda M. Genetz			R. Marsh
11/21/91 1630			11/21/91 1730
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME

WV-1155, Rev. 2
WV-100[illegible] Rev. 1
MCW207[illegible] 5PM

External Lab Destination: E & E	Purchase Order #: 19-49216-CRC	Analysis Requested	Report Format Le[illegible] ① 2
Charge # WH6100010	Release # 0116		Priority Code 1 2
Sample Custodian Signature: Linda M. Gerwitz			Report Data T[illegible] Jim Fox (716) 942-433[illegible]

SAMPLE I.D. #	DATE	TIME	LOCATION CODE	PRES	# CONT	VOA App II	TOC/TOX	Anions	NO_2+NO_3	Total Drinking Water Metals	Soluble Dr. Water Metals	**	Phenols	
91-11116	11/21/91	1230	WNW8201	H_2SO_4	1				X		27	36	9	Drinking water [illegible] to Include: As
91-11112				HNO_3	1		2	74	00	X				Hg, Ag, Ba, Cr, Se, Na, Mn, Fe
91-11113				HNO_3	1		2	74	09		X			mg.
91-11114				cool	2				27	34	8	X		** Drinking w[illegible] Pesticides & Herb[illegible]
91-11110				H_2SO_4	1				2	73	89		X	to include: 2,4,5-TP (si[illegible]
91-10769		1200	WNSP008	HCL	3	X		27	33	8				2,4-D Lindane, End[illegible]
91-10771				H_2SO_4	1		X		27	38	0			Toxaphene, Methoxychlor
91-10773				cool	1			X		27	35	9		
91-10778				H_2SO_4	1				X		27	37	0	Anions to inc[illegible] SO4, CL, F, CO[illegible]
91-10774				HNO_3	1	2	74	01		X				
91-10775				HNO_3	1		2	74	10		X			
91-10776				cool	2				27	34	9	X		

Linda M. Gerwitz	M J [illegible]	M J [illegible]	R Marsh
RELEASED BY	RECEIVED BY	RELEASED BY	RECEIVED BY
11/21/91 1630	11/21/91 1630	11/21/91	11/21/91 1730
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME

This sample was recieved at E+E at pH 8.0

WV-1155, Rev. 2
WV-1001, Rev. 1
MCW2039:5PM

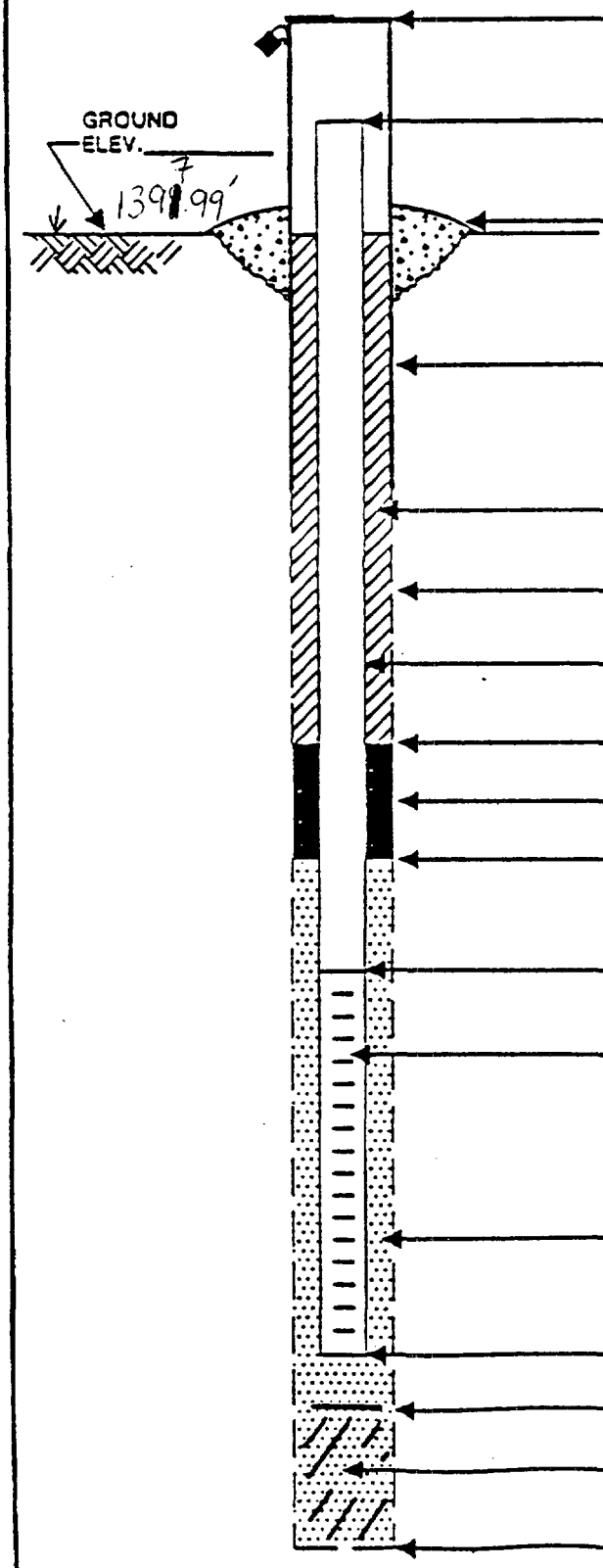
WVDP:0001106.RM

Appendix B

Monitoring Well Construction Diagrams and Boring Logs

PROJECT : WVDP
WELL No. 0103 US
PROJECT No. : 10805-410
LOCATION : WVDP
INSTALLATION DATE(S) : 1/9/90
FIELD GEOLOGIST : FRANCINE COHEN

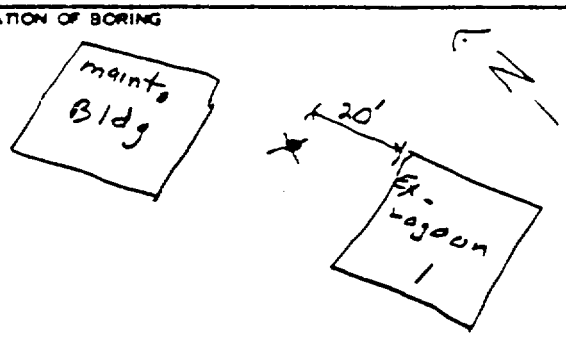
DRILLER : M. Grown
DRILLING METHOD : 4¼" HSA
DEVELOPMENT METHOD :



ELEVATION / TOP OF SURFACE CASING :
STICK-UP / TOP OF SURFACE CASING : 2.5
ELEVATION / TOP OF RISER PIPE :
STICK-UP / TOP OF RISER PIPE : 2.0
TYPE OF SURFACE SEAL :
I.D. OF SURFACE CASING : 6"
TYPE OF SURFACE CASING : pre-casing
TYPE OF BACKFILL : Cement-bentonite
BOREHOLE DIAMETER : 8"
I.D. OF RISER PIPE : 2"
TYPE OF RISER PIPE : SS schedule 5 Flush Joint
DEPTH OF SEAL : 3
TYPE OF SEAL : 1/4" round Bentonite pellets
DEPTH OF SAND PACK : 5
DEPTH TOP OF SCREEN : 6
TYPE OF SCREEN : SS Johnson channel Pack
SLOT SIZE x LENGTH : 0.010" x 15'
I.D. OF SCREEN : 2"
TYPE OF SAND PACK: .395 mm sand US Silica Flintshot 3.0
DEPTH BOTTOM OF SCREEN : 21
DEPTH BOTTOM OF SAND PACK : 24
TYPE OF BACKFILL BELOW OBSERVATION WELL : .395 mm Sand
ELEVATION / DEPTH OF HOLE : 24

Dames & Moore

LOCATION OF BORING



JOB NO.	10805-410
CLIENT	WVNS
DRILLING METHOD	4 1/4" ID HSA
SAMPLING METHOD	24" split spoon
BORING NO.	0103 USA
SHEET	1 of 2
DRILLING START TIME	1100
DRILLING FINISH TIME	1115
DRILLING START DATE	1/8/90
DRILLING FINISH DATE	1/9/90

WATER LEVEL	6			
TIME	930			
DATE	1/9/90			
CASING DEPTH	6.0			

DATUM ELEVATION

SURFACE CONDITIONS: Grassy, gently sloping

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO / SAMPLE DEPTH	BLOWS/FT SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH	
								Dk brn sandy soil.
SS	24/10	0	1	7/9		0	SAND & GRAVEL UNIT	3" TOPSOIL
				13/17		1		GRADES to Lt brn GRAVEL, some Sand + Silt. Dry (GM)
SS	24/11	2	2	9/8		2		Lt brn GRAVEL, some Sand + Silt. Dry (GM)
				13/17		3		
SS	24/2	4	3	7/10		4		Same as above but SATURATED. (GM)
				7/6		5		
SS	24/14	6	4	3/2		6		4" Med brn sat'd m/c SAND + f GRAVEL (SP) Grades to dk red-brn SILT, some Sand + Gravel, very moist (ML)
				2/1		7		
SS	24/13	8	5	3/10		8		Dk grn ROCK Fragments + Sand, some Silt very moist (GM)
				24/26		9		Mucky smell
SS	24/20	10	6	18/18		10		6" saturated brn-grn c SAND + f GRAVEL (SP) Grades to moist blue-grn Rock
				17/16		11		FRAGS + SAND, some Silt. Mucky Smell (G
				19/16		12		LT Brn moist GRAVEL + SAND, some Silt. Mucky smell (GM)
SS	24/16	12	7	29/53		13		
SS	24/14	14	8	19/19		14		Lt brn-grn GRAVEL + ROCK FRAGS + SAND, some silt. moist (GM) Mucky Smell
				18/23		15		
SS	24/16	16	9	49/43		16		Same as above (GM)
				51/90		17		
SS	24/22	18	10	56/68		18		Same as above (GM)
				68/71		19		

DATE 1/8/90 CHK'D BY

D. (REV 11-80)

LOCATION OF BORING

See pg 1

DATUM ELEVATION

JOB NO.	CLIENT
10805-410	WVNS

DRILLING METHOD: 4 1/4" ID HSA

SAMPLING METHOD: 24" Split Spoon ASTM D-1586-67

BORING NO. 0103 US

SHEET 2 OF

						DRILLING START	DRILLING FINISH
WATER LEVEL							
TIME						TIME 1100	TIME 11:15
DATE						DATE 1/8/90	DATE 1/9/90
CASING DEPTH							

SURFACE CONDITIONS:

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO / SAMPLE DEPTH	BLOWS/FT SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH	
SS	11 / 3	20	11 /	97 / 100		20	SKG Unit	Spoon Refusal med brn moist GRAVEL + SAND, some silt (GM)
						21		
SS	24 / 19	22	12 /	67 / 59		22	WTM TILL	6" as above (GM) Grades to very moist C + S. + rgs 5" Grades to dk gray (CL)
				32 / 40		23		
SS	24 / 19	24	13 /	10 / 12		24		DK gray moist C + S, + rgs (CL)
				26 / 32		25		
						26		
						27		
						28		
						29		
						30		
						1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						0		

DRILLING CONTR. Soils

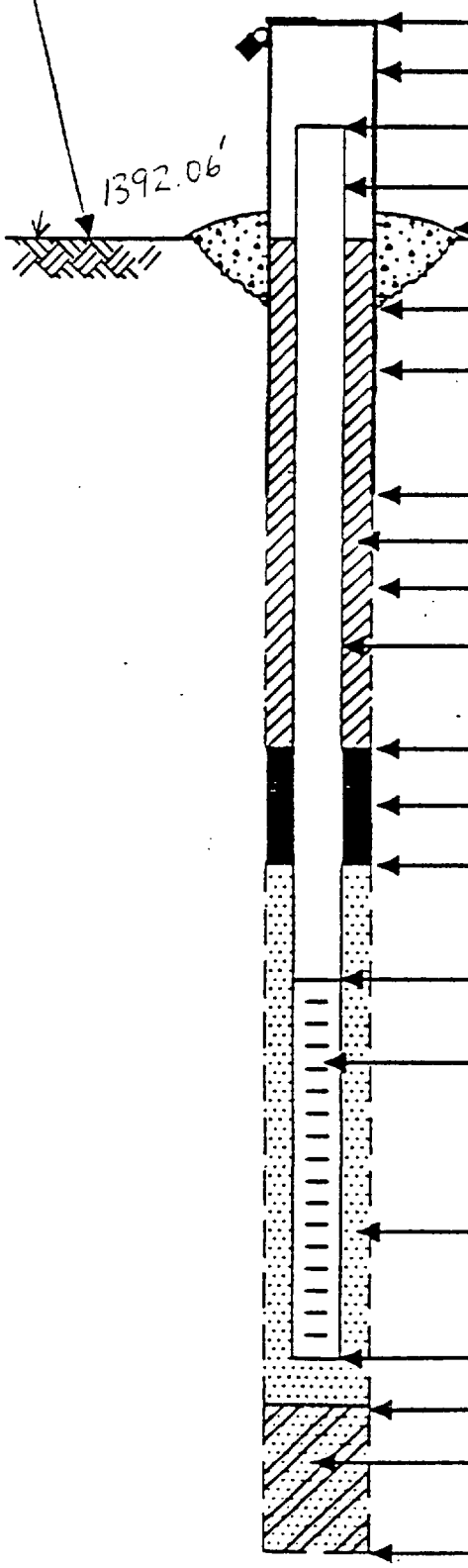
BY DATE 1/9/90 CHK'D BY

NO. 1

REV 11-8

PROJECT : WVDP	LOCATION : [illegible]	DRILLER : M [illegible]
PROJECT No. : [illegible]	BORING No. : 0104 US	DRILLING METHOD : [illegible]
ELEVATION :	DATE : 11/7/89	DEVELOPMENT METHOD :
FIELD GEOLOGIST : Francine Cohen		

GROUND ELEVATION : _____



ELEVATION TOP OF OUTER CASING : _____

STICK-UP TOP OF OUTER CASING : 2.9

ELEVATION OF TOP OF RISER PIPE : _____

STICK-UP TOP OF RISER PIPE : 1.9

TYPE OF SURFACE SEAL : _____

DEPTH OF SURFACE SEAL : _____

I.D. OF OUTER CASING : 6"

TYPE OF OUTER CASING : pro casing

DEPTH OF OUTER CASING : 2.9

TYPE OF BACKFILL : [illegible]

BOREHOLE DIAMETER : 8"

I.D. OF RISER PIPE : 2"

TYPE OF RISER PIPE : [illegible] sched 5 flush joint

DEPTH OF SEAL : 4.0

TYPE OF SEAL : 1/4" round [illegible] pellets

DEPTH OF SAND PACK : 6.0

DEPTH TOP OF SCREEN : 8.0

TYPE OF SCREEN : [illegible]

SLOT SIZE x LENGTH : 0.010 x 15'

I.D. OF SCREEN : 2"

TYPE OF SAND PACK: US Silica [illegible] ~ 395mm

DEPTH BOTTOM OF SCREEN : 23

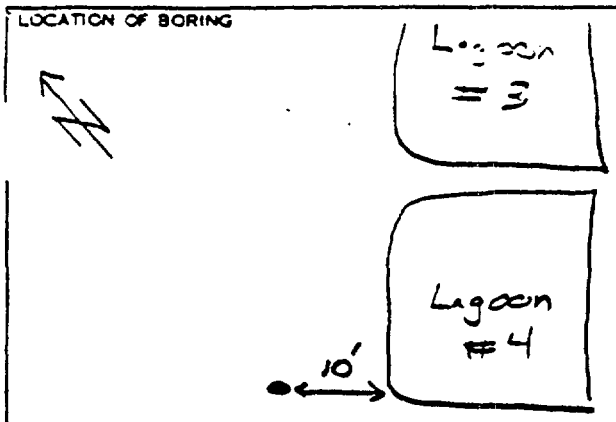
DEPTH BOTTOM OF SAND PACK : 24

TYPE OF BACKFILL BELOW SAND PACK : [illegible] bottom

DEPTH OF BOREHOLE : 24

DAMES & MOORE

LOCATION OF BORING



DATUM

ELEVATION

JOB NO.	CLIENT
10805-410	WVNS

DRILLING METHOD: 4 1/4" ID HSA

BORING NO. 010445

SHEET 1 OF 2

SAMPLING METHOD: 24" SS Sampler ASTM D1586-67

WATER LEVEL	8.2			
TIME	2:30			
DATE	11/7/89			
CASING DEPTH	24			

DRILLING	START	FINISH
TIME	1100	1400
DATE	11/7/89	11/7/89

SURFACE CONDITIONS: Flat, grassy. Dk brown soil with gravelly fill on surface

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH	
SS	24/15	0	1	5/9		0	OR G	3" med brn clayey SILT, w grass + roots. Grades to 2" dk brn rock fragments. (GL)
				10/15		1	FILL	Grades to 10" dk gray clayey SILT, tr subrnd gravel. (ML)
SS	24/2	2	2	8/13		2		Med brn clayey SILT, some c Gravel. (ML)
				10/9		3		
SS	24/17	4	3	3/4		4		Damp med brn SILT, little clay and Sand, tr subrnd gravel. (ML)
				4/5		5		
SS	24/16	6	4	3/13		6		3" as above. Grades to 4" dk gray clayey SILT, w dk green mottling. Grades to lt brn sandy SILT, w ang rock fragments, tr clay. (ML)
				20/15		7		
SS	24/5	8	5	2/12		8	ALLUVIAL	Wet brn subang SAND + GRAVEL, some SILT, tr clay. (GM)
				19/13		9		
SS	24/15	10	6	4/7		10	S/G	Med, wet brn SAND + GRAVEL, some silt, tr clay (GM)
				12/16		11		
SS	24/15	12	7	2/4		12		5" brn S+G, some $. Grades to 6" med brn SILT, tr s+g. Grades to med brn S+G, some $. (GM)
				8/16		13		
SS	24/12	14	8	2/6		14	S/G	Wet brn S+G, some $, tr c. (GM)
				10/7		15		
SS	24/15	16	9	5/5		16		7" med brn wet S+G, some $, tr c. Grades to med brn wet SILT, some f Sand little gravel. (ML) (GM)
				6/10		17		
SS	24/14	18	10	2/3		18		Wet fm SAND, ~~[illegible]~~ little $, tr g. (SM)
				5/3		19		

DRILLING CONTR [illegible]

NO. 20001

BY [illegible] DATE 11/7/89 CHK'D BY

DAMES & MOORE

LOCATION OF BORING

see sheet 1

DATUM ELEVATION

JOB NO.	10805-410
CLIENT	WVNS
DRILLING METHOD:	4 1/4" ID HSA
SAMPLING METHOD:	24" SS Sampler ASTM D1586-67
BORING NO.	0104 US
SHEET	2 OF 2
DRILLING START TIME	1100
DRILLING FINISH TIME	1405
DRILLING START DATE	11/6/89
DRILLING FINISH DATE	11/6/89

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

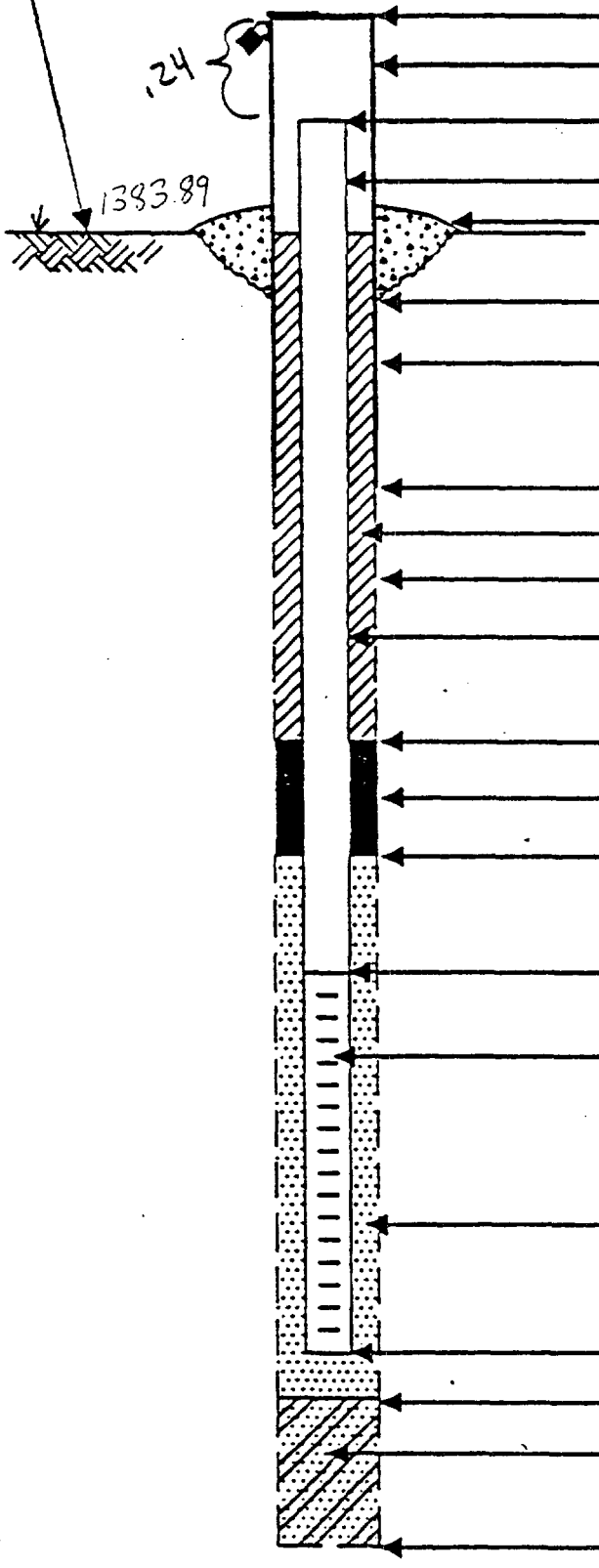
SURFACE CONDITIONS:

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH	
SS	24/18	20	11	4/3		20	S/G	5" of S+G, some $, tr c Grades to med brn SILT, some f Sand. 15" (ML) Grades to 3" S+G, some $, tr c. (GM)
				7/17		21	US-X	
SS	24/23	22	12	19/11		22		wet S+G, little $ tr c (GM) Grades to dk gray clayey silt (ML)
				10/14		23		
SS	24/9	24	13	7/12		24	TILL	2" med brn f SAND. Grades to dk gray clayey SILT, tr g. (ML)
				17/23		25		
						26		
						7		
						8		
						9		
						0		
						1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		

DATE 11/2/89 CHK'D BY

PROJECT : NUNS / RZZA WELLS LOCATION : WVDP
PROJECT No. : 10505-410 BORING No. : 0105 DC
ELEVATION : DATE : 11/7/89
FIELD GEOLOGIST : [illegible]

DRILLER : [illegible]
DRILLING METHOD : [illegible]
DEVELOPMENT METHOD :



GROUND ELEVATION :

ELEVATION TOP OF OUTER CASING :

STICK-UP TOP OF OUTER CASING : 2.22

ELEVATION OF TOP OF RISER PIPE :

STICK-UP TOP OF RISER PIPE : 2.0

TYPE OF SURFACE SEAL :

DEPTH OF SURFACE SEAL :

I.D. OF OUTER CASING : [illegible]

TYPE OF OUTER CASING : [illegible]

DEPTH OF OUTER CASING : 2.78

TYPE OF BACKFILL : [illegible]

BOREHOLE DIAMETER : [illegible]

I.D. OF RISER PIPE : 2"

TYPE OF RISER PIPE : [illegible]

DEPTH OF SEAL : 8.5

TYPE OF SEAL : [illegible]

DEPTH OF SAND PACK : 11.0

DEPTH TOP OF SCREEN : 13.0

TYPE OF SCREEN : [illegible] Gravel Pack

SLOT SIZE x LENGTH : 0.010" x 10' + 5' = 15'

I.D. OF SCREEN : 2"

TYPE OF SAND PACK: [illegible]

DEPTH BOTTOM OF SCREEN : 28.0

DEPTH BOTTOM OF SAND PACK : 30.0

TYPE OF BACKFILL BELOW SAND PACK : [illegible]

DEPTH OF BOREHOLE : 32.0

DAMES & MOORE

LOCATION OF BORING

JOB NO.

CLIENT

DRILLING METHOD:

SAMPLING METHOD:

BORING NO. 0105

SHEET OF

DRILLING

						START	FINISH
WATER LEVEL						TIME	TIME
TIME							
DATE						DATE	DATE
CASING DEPTH							

DATUM ELEVATION

SURFACE CONDITIONS:

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH
						0	
						1	
						2	
						3	
						4	FILL
						5	
						6	
						7	
						8	
						9	
						10	
						11	
						12	
						13	
						14	
						15	SIG
						16	
						17	
						18	
						19	

DRILLING CONTR

CHK'D BY

DATE

REV. 11-87

J.68497

DAMES & MOORE

LOCATION OF BORING	JOB NO.	CLIENT	BORING NO.
	10805-410	WVNS	0105 DS

DRILLING METHOD: 4 1/4" ID HSA, Truck Mounted Failing F-6 WT

SHEET 2 of 2

SAMPLING METHOD: 24" S.S Sampler, ASTM D-1586-67

DRILLING

WATER LEVEL					START TIME	FINISH TIME
TIME	4:10				1:30 pm	4:00
DATE	11/3/89				DATE 11/6/89	DATE 11/6/89
CASING DEPTH	32					

"see pg 1" for sketch

DATUM ELEVATION

SURFACE CONDITIONS: "Refer to pg 1"

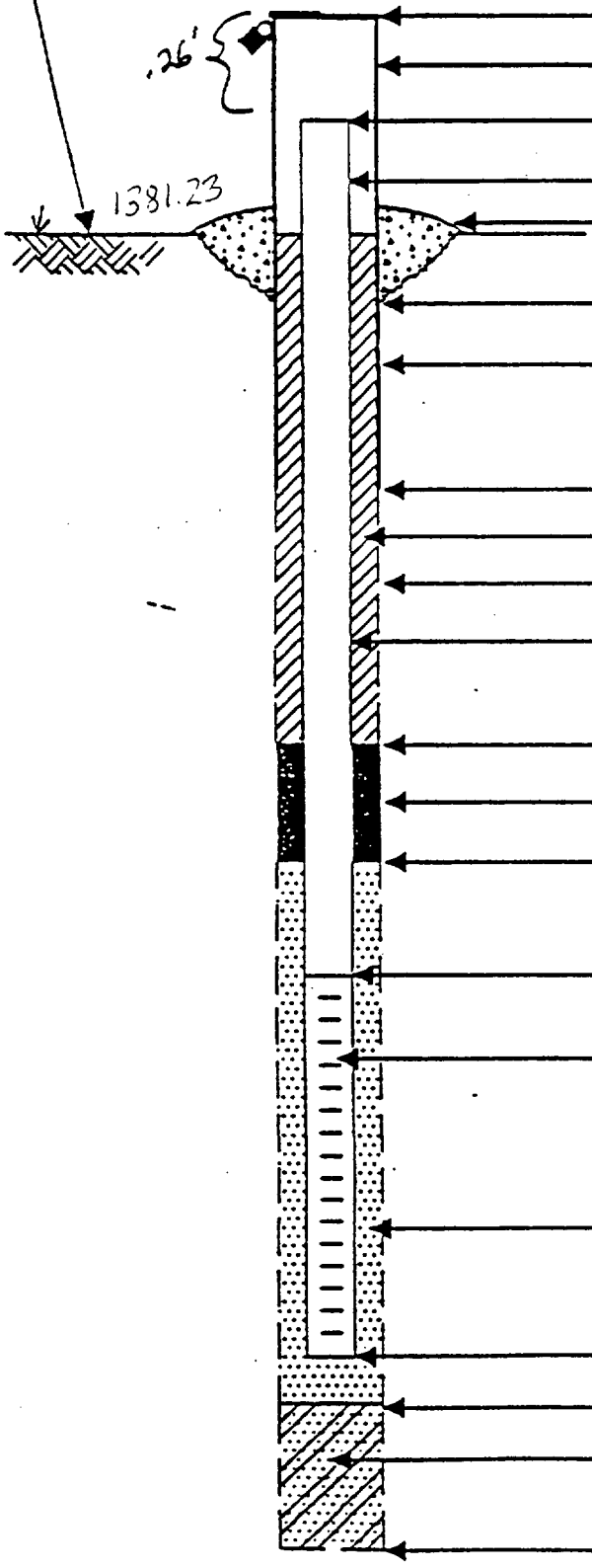
SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION
SS	24/15	20	11	6/7		20	SAND/GRAVEL LAYER	14" Sat. Br (f-m) GRAVEL and (f-c) SAND, little silt
				13/12		21		11" Sat. Br SILT and (f-c) GRAVEL, trace clay (GM/GP)
SS	24/11	22	12	5/16		22		11" Sat. Br (f-c) GRAVEL and (f-c) SAND, little silt, tr clay (GM/GP)
				16/20		23		
SS	24/6	24	13	22/22		24		6" Sat. Br (f-m) GRAVEL and (f-c) SAND, little silt, tr cl
				22/30		25		(
SS	24/15	26	14	12/20		26		15" Wet Br sandy silty GRAVEL, tr clay (GM)
				32/65		27		
SS	24/15	28	15	34/27		28		14" Wet Br (f-c) GRAVEL and (f-m) sand, little silt tr clay
				20/12		29		1" Wet Br SILT, little gravel, tr clay, orange-green mot (GM)
SS	24/19	30	16	8/12		30		5" Moist Oxidized clayey SILT to SILT AND CLAY, tr (f)
				24/32		31		14" Moist Grey unweathered clayey SILT to SILT AND CLAY, trace (f) gravel (ML/CL)
SS	24/20	32	17	10/15		32		"SAME AS ABOVE 14"" (ML/CL)
				26/33		33		
						34		
						35		
						36		
						37		
						38		
						39		

DRILLING CONTR. Empire Soils Investigations, Inc.

26041

J. Ringert DATE 11/6/89 CHK'D BY

PROJECT : _____ LOCATION : _____ DRILLER : _____
PROJECT No. : _____ BORING No. : 0106 DS DRILLING METHOD : _____
ELEVATION : _____ DATE : _____ DEVELOPMENT METHOD : _____
FIELD GEOLOGIST : _____

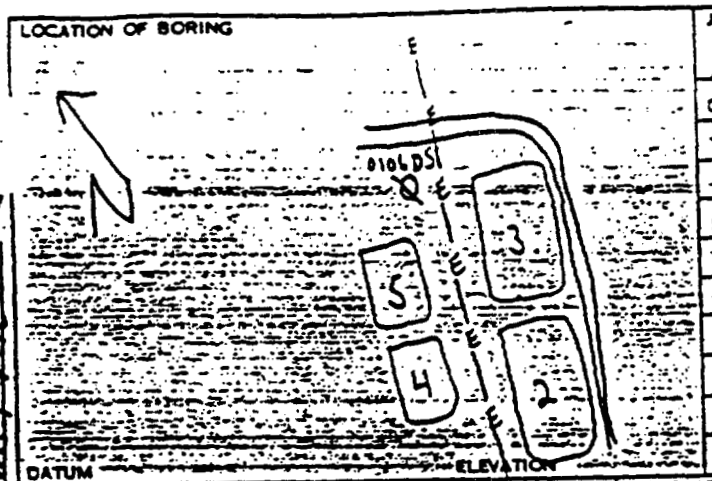


GROUND ELEVATION : _____

ELEVATION TOP OF OUTER CASING : _____
STICK-UP TOP OF OUTER CASING : 2.53
ELEVATION OF TOP OF RISER PIPE : _____
STICK-UP TOP OF RISER PIPE : 2.5
TYPE OF SURFACE SEAL : Concrete
DEPTH OF SURFACE SEAL : _____
I.D. OF OUTER CASING : 8"
TYPE OF OUTER CASING : Steel
DEPTH OF OUTER CASING : 24.7
TYPE OF BACKFILL : Cement / Bentonite Grout
BOREHOLE DIAMETER : 8"
I.D. OF RISER PIPE : 2"
TYPE OF RISER PIPE : S.S. Sch 40
DEPTH OF SEAL : 4.5
TYPE OF SEAL : 1/4" round Bentonite Pellets
DEPTH OF SAND PACK : 7.5
DEPTH TOP OF SCREEN : 9.5
TYPE OF SCREEN : S.S. Torpedo Gravel Pack
SLOT SIZE x LENGTH : 0.010" x 5'
I.D. OF SCREEN : 2"
TYPE OF SAND PACK: Alagon Fine Sand #4098
DEPTH BOTTOM OF SCREEN : 14.5
DEPTH BOTTOM OF SAND PACK : 17.0
TYPE OF BACKFILL BELOW SAND PACK : 1/4" round Bentonite Pellets
DEPTH OF BOREHOLE : 17.6

DAMES & MOORE

LOCATION OF BORING



DATUM ELEVATION

JOB NO.	CLIENT
10805-410	WUNS

DRILLING METHOD: 4 1/4" I.D. HSA, Truck Mounted Failing F-6 WT

SAMPLING METHOD: 24" S.S. Sampler, ASTM D 1586-67

BORING NO. 0106 DS

SHEET 1 OF 1

DRILLING

	START	FINISH
TIME	9:30am	11:00am
DATE	11/2/89	11/2/89

WATER LEVEL	17.6	13.3		
TIME	11:30	12:00		
DATE	11-2-89	11-2-89		
CASING DEPTH	18	17		

SURFACE CONDITIONS: Flat grassy with gravel, located NE of lagoon numbers 3

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH	DESCRIPTION
SS	24/18	0	1	4/7		0	OR	4" Dry Br Organic debris - SILT, little (f) sand + grav
				8/10		1		14" Damp Br - Grey clayey SILT, tr (f-m) gravel angu (OL) (ML)
SS	24/14	2	2	5/12		2		14" Damp Br - Lt Br SILT, little (f-m) sand, trace grave tr clay and Organic debris w/ grass + roots. (GM)
				13/10		3		
SS	24/12	4	3	6/11		4		7.5" Moist Br clayey SILT, tr grass and roots 11.5" Moist Br (f-m) SAND and (f-m) GRAVEL, little silt, tr clay, loose. (ML)
				10/12		5		
SS	24/10	6	4	14/14		6		2" Moist Br clayey SILT, some (f-m) sand, little grav angular 8" Moist Br (vf-m) SAND, some silt, little gravel ang (ML/GM)
				16/14		7		
SS	24/17	8	5	5/12		8		4" Wet Br SILT, tr (f) sand, tr gravel 2" Moist Red Br SILT, some (vf) sand and (f-c) gravel 11" Moist Br SILT AND (f-m) GRAVEL, some (f-m) sand, tr clay. (GM)
				12/16		9		
SS	24/14	10	6	10/19		10		14" Wet Br sandy silty GRAVEL angular, tr clay (GM)
				19/12		11		
SS	24/8	12	7	6/19		12		8" Saturated (f-m) GRAVEL, some silt, little (f) sand, tr clay (GM)
				18/12		13		
SS	24/14	14	8	4/7		14		3" Sat Br (f-m) GRAVEL angular, some silt, little (f-m) san tr clay (GM) 4" Br oxidized clayey SILT to SILT and CLAY (ML) 7" Grey unweathered clayey SILT to SILT and CLAY, tr gra
				12/14		15		
SS	24/18	16	9	7/17		16		18" Damp Grey unweathered clayey SILT to SILT and C tr gravel subangular (ML/CL)
				26/40		17		
						18		
						9		

SAND/GRAVEL LAYER

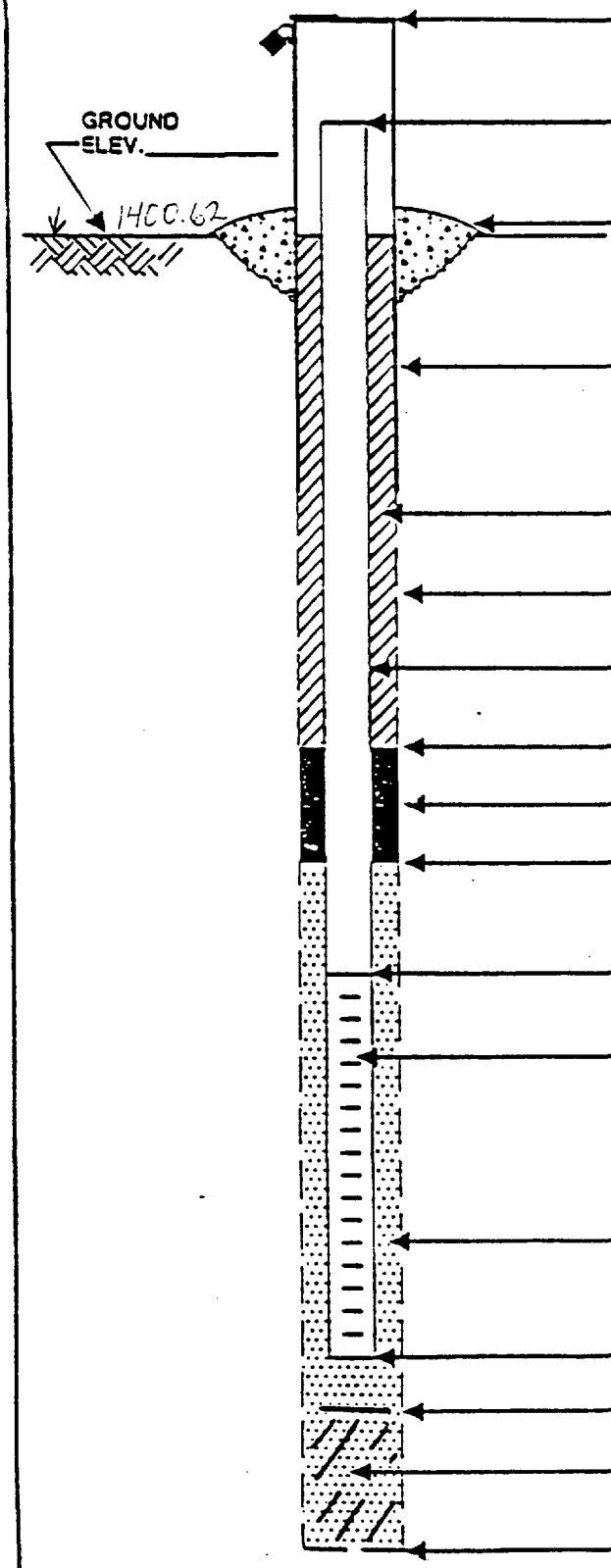
DRILLING CONTR. Investigations, Inc.

Binger 11/2/89

PROJECT : [illegible]
PROJECT No. : [illegible]
INSTALLATION DATE(S) : [illegible]
FIELD GEOLOGIST : [illegible]

WELL No. 0501
LOCATION : WVDP

DRILLER : [illegible]
DRILLING METHOD : [illegible]
DEVELOPMENT METHOD : [illegible]



ELEVATION / TOP OF SURFACE CASING : [illegible]

STICK-UP / TOP OF SURFACE CASING : 2.1

ELEVATION / TOP OF RISER PIPE : [illegible]

STICK-UP / TOP OF RISER PIPE : 1.86

TYPE OF SURFACE SEAL : [illegible]

I.D. OF SURFACE CASING : 6

TYPE OF SURFACE CASING : [illegible]

TYPE OF BACKFILL : Cement-Bentonite

BOREHOLE DIAMETER : 8"

I.D. OF RISER PIPE : 2"

TYPE OF RISER PIPE : SS [illegible]

DEPTH OF SEAL : 16.5

TYPE OF SEAL : 1/4" Pound Bentonite [illegible]

DEPTH OF ~~SAND PACK~~ : 18.5

DEPTH TOP OF SCREEN : [illegible]

TYPE OF SCREEN : [illegible]

SLOT SIZE x LENGTH : [illegible]

I.D. OF SCREEN : 2

TYPE OF SAND PACK: [illegible]

DEPTH BOTTOM OF SCREEN : 33

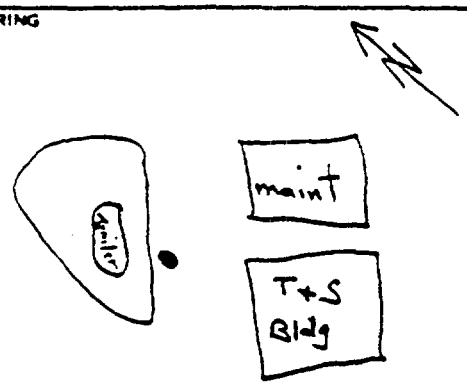
DEPTH BOTTOM OF ~~SAND PACK~~ : 33

TYPE OF BACKFILL BELOW OBSERVATION WELL : none

ELEVATION / DEPTH OF HOLE : 33

Dames & Moore

LOCATION OF BORING



DATUM

ELEVATION

JOB NO.	CLIENT
10805-410	WVNS

DRILLING METHOD: 4½" ID HSA

BORING NO. 0501 US

SHEET 1 OF

SAMPLING METHOD: 24" Split Spoon ASTM D1586-67

WATER LEVEL	18.0	9.75	6	21
TIME	3:00	10:00	9:00	10:45
DATE	12/28/89	12/29/89	6-19-90	6-19-90
CASING DEPTH	18.0	24	28	32

DRILLING

START TIME	FINISH TIME
1345	1045
DATE 12/28/89	DATE 6-19-90

SURFACE CONDITIONS: Snow covered soil, dk brn. Flat.

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO / SAMPLE DEPTH	BLOWS/FT. SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH	
SS	24/10	0	1	17/16		0	Sand + Gravel Unit	Lt brn-green GRAVEL, some Silt, little sand, tr clay.
				8/12		1		
SS	24/14	2	2	8/5		2		7" of moist SAND + c GRAVEL, some S. Grades to dry S+G, some S.
				3/3		3		
SS	24/9	4	3	10/6		4		Moist med brn S + G, some S.
				23/17		5		
SS	24/12	6	4	16/12		6		Dry lt brn-green GRAVEL, some Sand and Silt.
				12/17		7		
SS	24/14	8	5	14/16		8		Moist lt brn GRAVEL, some S + S, 5". Grades to dry.
				24/13		9		
SS	24/13	10	6	7/9		10		Moist lt brn GRAVEL, some S + S,
				10/8		11		
SS	24/7	12	7	9/20		12		Same as above.
				13/11		13		
SS	24/10	14	8	15/12		14		Same as above, saturated.
				9/8		15		
SS	24/11	16	9	33/24		16		Very moist lt brn C GRAVEL + Rock fragments, some Sand + Silt.
				24/29		17		
SS	5/5	18	10	100/		18		Spoon refusal. Saturated lt brn SAND + f GRAVEL, Some S.
						19		

DRILLING CONTR Empire Gallo

NO. 72035

BY Francine Collier

DATE 12/28/89

CHK'D BY

REV 11-80

LOCATION OF BORING

See pg 1

DATUM

ELEVATION

JOB NO.	CLIENT
10805-410	WUNS

DRILLING METHOD: 4½" ID HSA

BORING NO. 0501 US

SHEET 2 of 2

SAMPLING METHOD: 24" Split Spoon, ASTM D1586-67

WATER LEVEL	9.2	9.5	15.2
TIME	1300	1330	1500
DATE	6-19-90	6-19-90	6-19-90
CASING DEPTH	well in	well in	well in

DRILLING	START	FINISH
TIME	1345	1045
DATE	12/28/89	6-19-90

SURFACE CONDITIONS:

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO / SAMPLE DEPTH	BLOWS/FT. SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH	
SS	24/9	20	11	38/28		20	Sand + Gravel Unit	Med brn saturated c GRAVEL + ROCK FRAGS, some S + $, tr c.
				34/42		21		
SS	24/0	22	12	50/16		22		No sample first try. Scraped spoon down side, no recovery
				20/29		23		
SS	24/1	24	13	39/27		24		Med brn sat'd GRAVEL + SAND, some $, tr c.
				31/21		25		
SS	24/18	26	14	9/10		26		Radioactive soil Approx 1200 counts Beta
				30/31		27		Quick visual inspection shows moist SAND + f GRAVEL.
SS	24/23	28	15	9/5		28		Saturated m/c SAND, brn 14" Grades to sat'd m GRAVEL, some clay + silt, little sand m/c. 800 cpm β
				3/3		29		
SS	24/22	30	16	4/3		30		Sat'd m GRAVEL, some C + $, little m/c sand. 500 cpm β
				8/10		31		
SS	24/20	32	17	5/7		32	TILL	4" as above - saturated. Grades to moist dk gray CLAY, some silt, tr m sand and f gravel. 200-300 cpm β
				13/14		33		
						4		
						5		
						6		
						7		
						8		
						9		

DRILLING CONTR [illegible]

NO. 12036

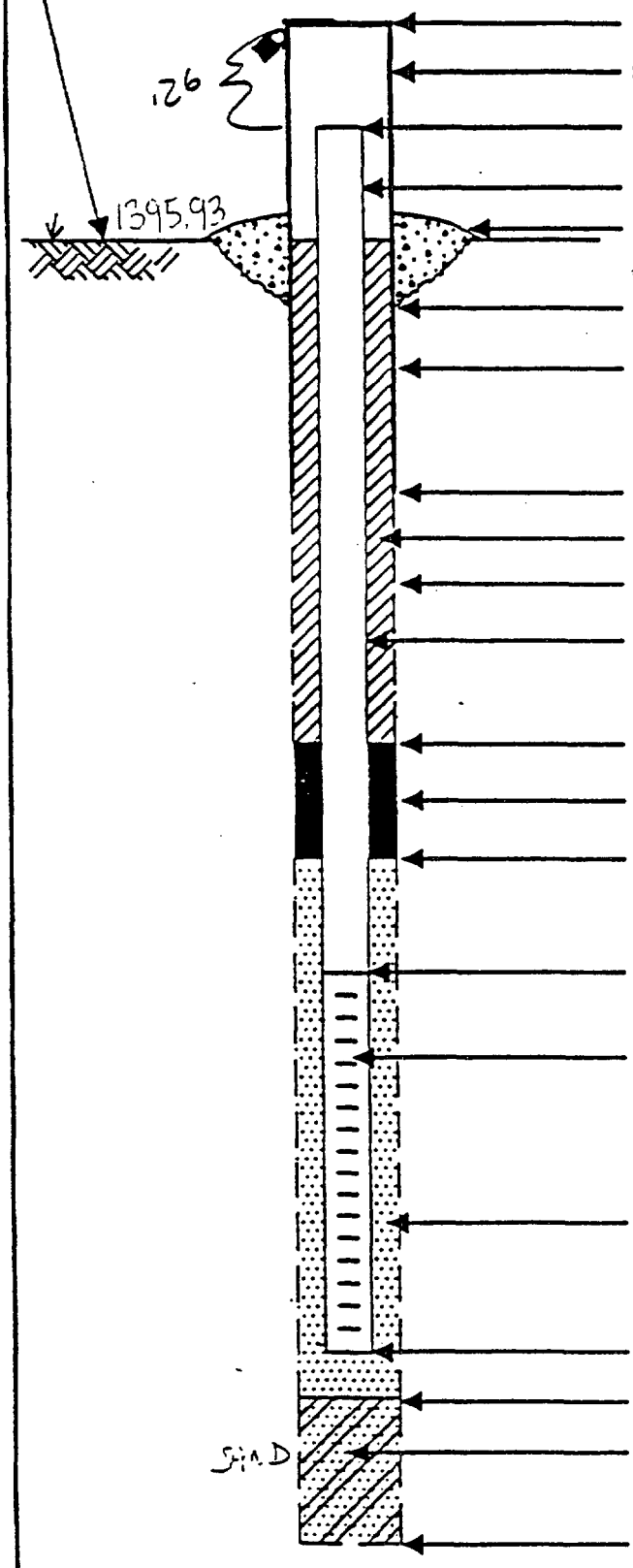
BY [illegible] DATE 12/28/89 CHK'D BY

REV 11-86

DAMES & MOORE
A PROFESSIONAL LIMITED PARTNERSHIP

PROJECT :	LOCATION : WVDP	DRILLER : [illegible]
PROJECT No. : [illegible]	BORING No. : 0502 DS	DRILLING METHOD : [illegible]
ELEVATION :	DATE : 11/8/89	DEVELOPMENT METHOD : —
FIELD GEOLOGIST : James T. Bunnert		

GROUND ELEVATION :



ELEVATION TOP OF OUTER CASING :

STICK-UP TOP OF OUTER CASING : 1.78

ELEVATION OF TOP OF RISER PIPE :

STICK-UP TOP OF RISER PIPE : 2.0

TYPE OF SURFACE SEAL : Sakrete

DEPTH OF SURFACE SEAL :

I.D. OF OUTER CASING : 6"

TYPE OF OUTER CASING : Steel

DEPTH OF OUTER CASING : 3.22

TYPE OF BACKFILL : [illegible]

BOREHOLE DIAMETER : 8"

I.D. OF RISER PIPE : 7"

TYPE OF RISER PIPE : [illegible]

DEPTH OF SEAL : 4.0

TYPE OF SEAL : [illegible] Pellets

DEPTH OF SAND PACK : 6.0

DEPTH TOP OF SCREEN : 8.0

TYPE OF SCREEN : St. St. Johnson Channel Pack

SLOT SIZE x LENGTH : 0.010" x 10'

I.D. OF SCREEN : 2"

TYPE OF SAND PACK: Clean [illegible] Sand
[illegible]

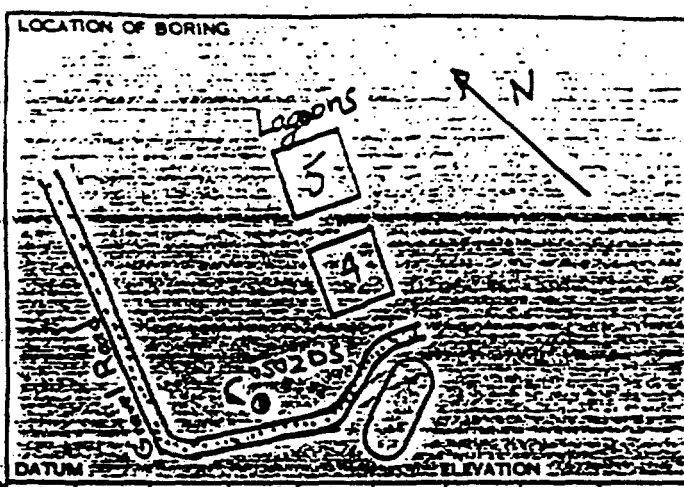
DEPTH BOTTOM OF SCREEN : 18.0

DEPTH BOTTOM OF SAND PACK :

TYPE OF BACKFILL BELOW SAND PACK :
[illegible]

DEPTH OF BOREHOLE : 20

LOCATION OF BORING



JOB NO.	CLIENT
	WVNS

DRILLING METHOD: 4 1/4" HSA

BORING: 0502D

SHEET: 1 of 1

SAMPLING METHOD: ASTM D1586-67
2 4" Split Spoon

WATER LEVEL	17.5 ft			
TIME	10:00			
DATE	11/8			
CASING DEPTH	20'			

DRILLING: START 1:50 pm, FINISH 3 pm; DATE 11/7/88

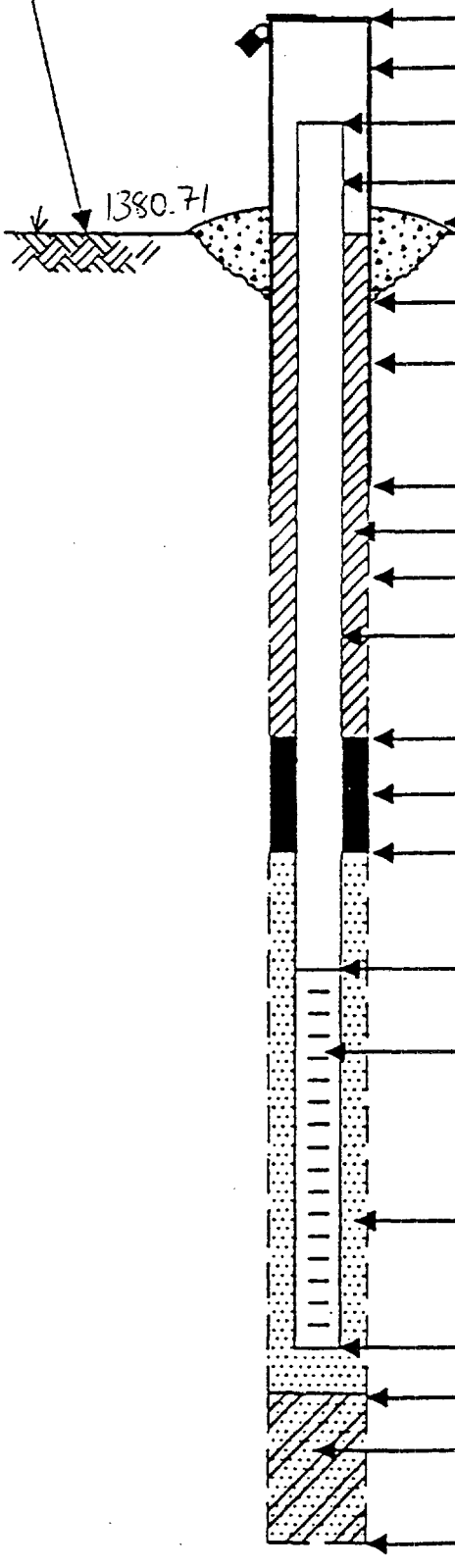
SURFACE CONDITIONS: Flat grassy with gravel / near hard stand area (lay down pad)

SAMPLER TYPE	BLOWS/6"	DEPTH	ELEVATION	SOIL DESCRIPTION
SS	7/21	0	0	OR 5" brown Organic Topsoil w/ roots - SILT, little gravel, tr clay, damp (OL)
	30/34		1	11" Silt & Gravel, some sand, tr clay - damp (GM)
SS	24/34	2	2	Rd br silty sandy Gravel, dry to damp (GM)
	24/22		3	
SS	9/6	4	4	SILT w/ some sand and m/f gravel - wet (GM)
	5/9		5	
SS	10/15	6	6	5" SILT w/ some sand & m/f gravel, tr clay wet (GM)
	19/19		7	12" SILT, SAND & GRAVEL - dry to damp (GM)
SS	9/10	8	8	GRAVEL - some silt - little sand - tr clay (more clay within first 5") - saturated throughout (GM/GP)
	9/9		9	
SS	4/6	10	10	SAME AS ABOVE (GM/GP)
	6/9		11	
SS	8/10	12	12	SAME AS ABOVE (GM/GP)
	9/10		13	
SS	17/19	14	14	f/m GRAVEL - little silt, tr sand - saturated (GW)
	9/9		15	
SS	9/12	16	16	5" sandy silty GRAVEL - wet (GM)
	18/19		17	4" br bridging clayey SILT to SILT & CLAY; 4" gray unweathered clayey SILT to SILT & CLAY (ML/CL)
SS	12/18	18	18	gray clayey SILT to SILT & CLAY (ML/CL)
	19/24		19	

WVDP:0001106.RM

PROJECT : WVDP	LOCATION : West [illegible]	DRILLER : [illegible]
PROJECT No. : 10835-410	BORING No. : 0821 US	DRILLING METHOD : [illegible]
ELEVATION :	DATE : 10/31/89	DEVELOPMENT METHOD :
FIELD GEOLOGIST : Francine J. Conn		

GROUND ELEVATION :



ELEVATION TOP OF OUTER CASING :

STICK-UP TOP OF OUTER CASING : + 2.8

ELEVATION OF TOP OF RISER PIPE :

STICK-UP TOP OF RISER PIPE : + 2.6

TYPE OF SURFACE SEAL : ~~cement~~ - ~~[illegible]~~

DEPTH OF SURFACE SEAL : ~~[illegible]~~

I.D. OF OUTER CASING : 6"

TYPE OF OUTER CASING : pro casing

DEPTH OF OUTER CASING :

TYPE OF BACKFILL :

BOREHOLE DIAMETER : 8"

I.D. OF RISER PIPE : 2"

TYPE OF RISER PIPE : St St flush joint

DEPTH OF SEAL : 3.0

TYPE OF SEAL : 1/4" round bent pellets

DEPTH OF SAND PACK : 6
natural materials collapsed 8'-10'
mixed with sand

DEPTH TOP OF SCREEN : 7.5

TYPE OF SCREEN : St. St. channel Pack

SLOT SIZE x LENGTH : 0.010" x 10'

I.D. OF SCREEN : 2"

TYPE OF SAND PACK: clean fine SAND #4098

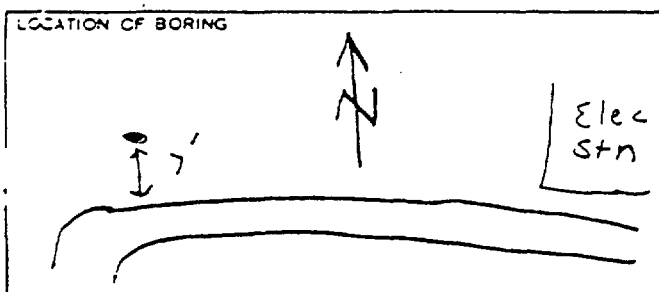
DEPTH BOTTOM OF SCREEN : 17.5

DEPTH BOTTOM OF SAND PACK : 21

TYPE OF BACKFILL BELOW SAND PACK : sand #4098
1" bentonite pellets 1/4" round

DEPTH OF BOREHOLE : 22

LOCATION OF BORING



JOB NO.	CLIENT
10805-410	WVNS

DRILLING METHOD: 4 1/4" ID HSA

SAMPLING METHOD: SS Sampler ASTM D1586-67

BORING NO. 080145

SHEET 1 OF 2

					DRILLING START TIME	DRILLING FINISH TIME
WATER LEVEL	13.55	13.80				
TIME	12:50	1340			915	1315
DATE	10/31/89	10/31/89			DATE 10/31/89	DATE 10/31/89
CASING DEPTH	18	22				

DATUM ELEVATION

SURFACE CONDITIONS: Flat, grassy, med brn soil with gravelly fill on surface.

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH	
SS	24/19	0	1	9/19	ML/GM	0	TOPSOIL	2" Org lyr w Roots. 12" of med brn SILT, some ang fc Gravel, damp. 5" of dk gry-grn silty SAND.
				16/19		1		
SS	24/3	2	2	10/4	ML/GM	2		Med brn SILT, some f sub-ang Gravel, roots
				4/3		3		
SS	24/9	4	3	3/3		4		5" of moist, dk brn-grn SILT, little f ang gravel. Pieces of wood.
				10/10		5		Grades to wet med brn SILT, and ang fm GRAVEL
SS	24/2	6	4	18/28		6		Saturated med brn SILT and fm ang GRAVEL
				24/16		7		
SS	24/10	8	5	5/15	GM	8		Sat'd med brn silty sandy subang GRAVEL
				12/7		9		
SS	24/8	10	6	3/2		10	SAND & GRAVEL w/ SILT	Lens of dk rust-blk SILT 1"
				10/8		11		
SS	24/17	12	7	7/9		12		
				8/10		13		
SS	24/12	14	8	3/12		14		Grades to med. brn SILT + mc ang GRAVEL
				12/8		15		
SS	24/13	16	9	14/12		16		
				15/13		17		
SS	24/7	18	10	6/13		18		
				6/14		19		
						20		

DRILLING CONTR. [illegible] BY [illegible] DATE 10/31/89 CHK'D BY [illegible]

NO. 170071

WVDP:0001106.RM

LOCATION OF BORING

JOB NO. 10805-410 | CLIENT WVNS

DRILLING METHOD: 4 1/4" ID HSA

BORING NO. 0801-4S

SHEET 2 of 2

SAMPLING METHOD: SS Sampler 24"
ASTM D1586-67

DRILLING

					START	FINISH
WATER LEVEL					TIME	TIME
TIME					0915	1315
DATE					DATE	DATE
CASING DEPTH					10/31/89	10/31/89

DATUM

ELEVATION

SURFACE CONDITIONS:

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH	
SS	24/8	20	11	3/10		20	St 6 unit	Grades to silty SAND, ~~some~~ some Gravel, tr clay.
				10/9		21		1" of med brn clayey SILT.
SS	24/20	22	12	8/13	ML	22	TILL	DK gray clayey SILT, tr fm-ang gravel
				21/28		23		
						24		
						25		
						26		
						27		
						28		
						29		
						0		
						1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						0		

DRILLING CONTR. Empire Soils

No. 26034

BY Francine Cohen

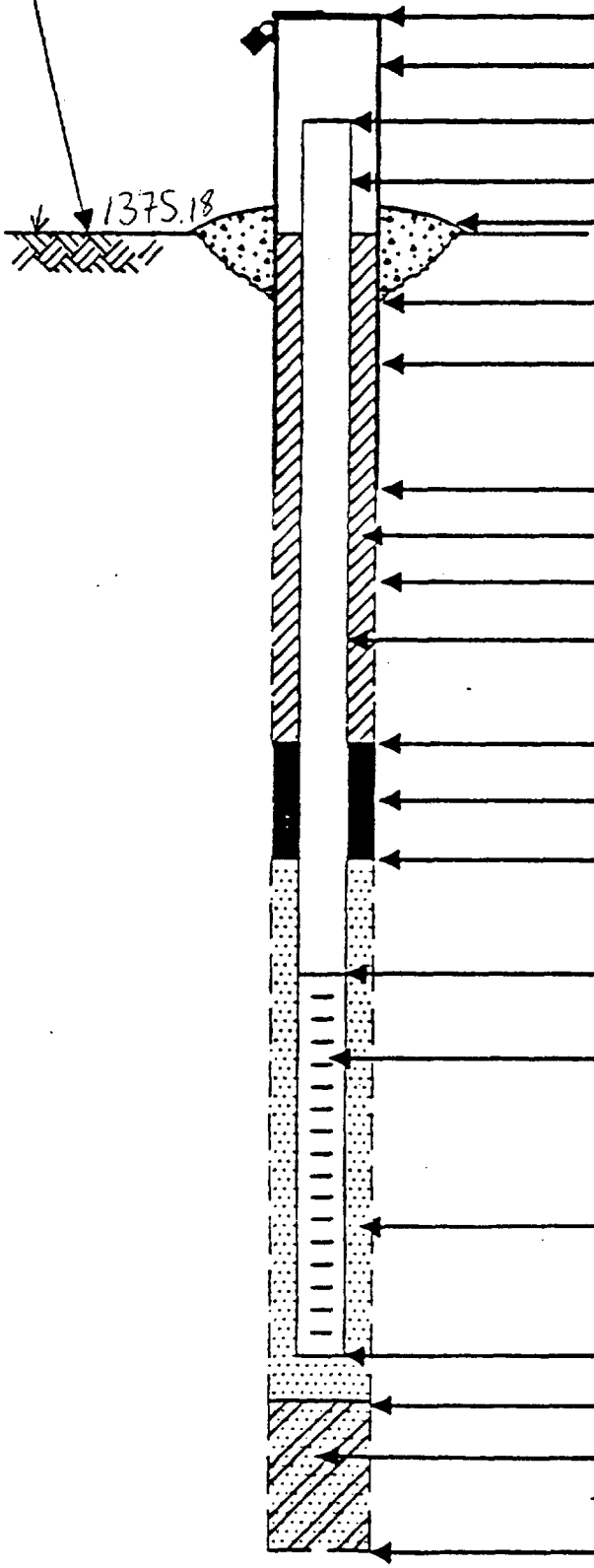
DATE

CHK'D BY

(REV. 11-87)

WVDP:0001106.RM

PROJECT : WVDP	LOCATION : West Valley NY	DRILLER : M Grousa
PROJECT No. : 10805-410	BORING No. : 0802 05	DRILLING METHOD : 4 1/4" ID HSA
ELEVATION :	DATE : 11/2/89	DEVELOPMENT METHOD :
FIELD GEOLOGIST : Francine J Cohen		



GROUND ELEVATION : _____

ELEVATION TOP OF OUTER CASING : _____

STICK-UP TOP OF OUTER CASING : +2.7

ELEVATION OF TOP OF RISER PIPE : _____

STICK-UP TOP OF RISER PIPE : +2.0

TYPE OF SURFACE SEAL : ~~Cement~~ ~~bentonite grout~~ + Sakrete

DEPTH OF SURFACE SEAL : 3.0

I.D. OF OUTER CASING : 6"

TYPE OF OUTER CASING : pre casing

DEPTH OF OUTER CASING : 2.1

TYPE OF BACKFILL : Cement bentonite

BOREHOLE DIAMETER : 8"

I.D. OF RISER PIPE : 2"

TYPE OF RISER PIPE : St. St. Flush Joint

DEPTH OF SEAL : 3.0

TYPE OF SEAL : 1/4" round bentonite pellets

DEPTH OF SAND PACK : 5.0

DEPTH TOP OF SCREEN : 7.0

TYPE OF SCREEN : St. St channel Pack

SLOT SIZE x LENGTH : 0.010" x 5'

I.D. OF SCREEN : 2"

TYPE OF SAND PACK: clean fine # 4098 Sand

DEPTH BOTTOM OF SCREEN : 11.0

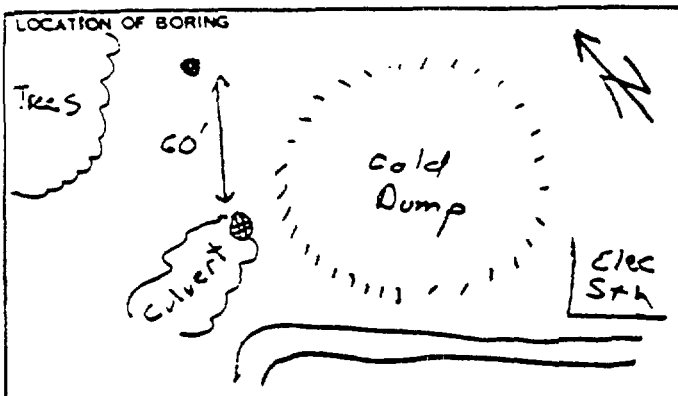
DEPTH BOTTOM OF SAND PACK : 11.5

TYPE OF BACKFILL BELOW SAND PACK : 6" Sand # 4098, clean fine 7.1' 1/4" round Bentonite pellets

DEPTH OF BOREHOLE : 12.1

DAMES & MOORE

LOCATION OF BORING



DATUM

ELEVATION

JOB NO.	11805-410
CLIENT	WVNS
DRILLING METHOD:	4 1/4" ID HSA
SAMPLING METHOD:	24" SS Sampler ASTM D1586-67
BORING NO.	0802 NS
SHEET	1 of 1
DRILLING START TIME	9:30
DRILLING FINISH TIME	1030
DATE	11/2/89
DATE	11/2/8

WATER LEVEL	12.1			
TIME	1100			
DATE	11/2/89			
CASING DEPTH	12.1			

SURFACE CONDITIONS: Sloping, grassy, med brn soil.

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH	
SS	24/6	0	1	1/2	ML	0	TOP SOIL	Med brn, dry SILT, little m gravel, roots. (TOPSOIL)
				2/4		1		
SS	24/20	2	2	14/40	ML	2	ALLUVIAL	3" Org lyr w grass. Lt brn SILT and GRAVEL, tr f sand.
				49/32	GM	3		2" of med brn f sandy SILT on bot.
SS	24/13	4	3	20/32		4		3" org lyr. Lt brn SILT + GRAVEL tr f sand. ~~3" of~~
				20/12		5		Grades to tr clay.
SS	24/11	6	4	7/9		6		2" Org lyr. 3" of med brn org SILT 6" of lt gry ~~Silty~~ clayey SILT, some m ang gravel, wet.
				6/6		7		
SS	24/11	8	5	6/8		8		3" of med brn SILT. Lt gray clayey SILT some m ang gravel, some f sand, wet.
				8/7		9		3" of med brn SILT, tr clay. and f sub ang gravel.
SS	24/11	10	6	3/7	ML	10	TILL	Wet dk gray clayey SILT, tr sub ang fm gravel
				9/11		11		
SS	24/19	12	7	5/10		12		Dk gry-brn SILT, some clay, tr subang gravel.
				14/19		13		
~~SS~~	~~24/19~~	~~15~~	~~8~~			14		
						5		
						6		
						7		
						8		
						9		

DRILLING CONTR. Empire Soils

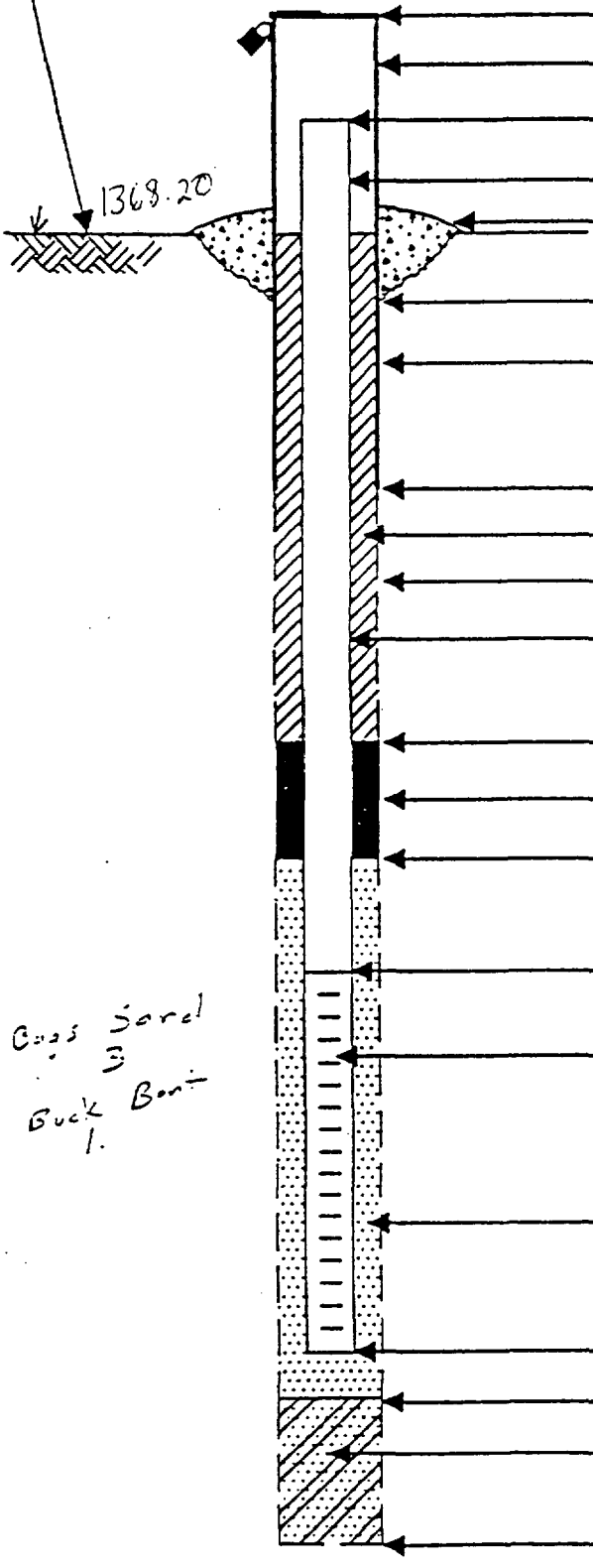
26041

Francine Cohen

DATE 11/2/89 CHK'D BY

DAMES & MOORE
A PROFESSIONAL LIMITED PARTNERSHIP

PROJECT : WVDP	LOCATION : [illegible]	DRILLER : [illegible]
PROJECT No. : 10805-410	BORING No. : 0803[illegible]	DRILLING METHOD : [illegible]
ELEVATION :	DATE :	DEVELOPMENT METHOD :
FIELD GEOLOGIST : [illegible]		



GROUND ELEVATION : _____

ELEVATION TOP OF OUTER CASING : _____

STICK-UP TOP OF OUTER CASING : 2.5

ELEVATION OF TOP OF RISER PIPE : _____

STICK-UP TOP OF RISER PIPE : 2.0

TYPE OF SURFACE SEAL : _____

DEPTH OF SURFACE SEAL : _____

I.D. OF OUTER CASING : 6"

TYPE OF OUTER CASING : Pro[illegible] Cas[illegible]

DEPTH OF OUTER CASING : 2.5

TYPE OF BACKFILL : Cement-bentonite

BOREHOLE DIAMETER : 8"

I.D. OF RISER PIPE : 2"

TYPE OF RISER PIPE : St. St. Diver joint

DEPTH OF SEAL : 4

TYPE OF SEAL : 1/4" round Centon-e pellets

DEPTH OF SAND PACK : 6

DEPTH TOP OF SCREEN : 8

TYPE OF SCREEN : St. St. Johnson Cross port

SLOT SIZE x LENGTH : 0.010" x 5'

I.D. OF SCREEN : 2"

TYPE OF SAND PACK: US Silica Flintshot 3.0 ~.395 mm

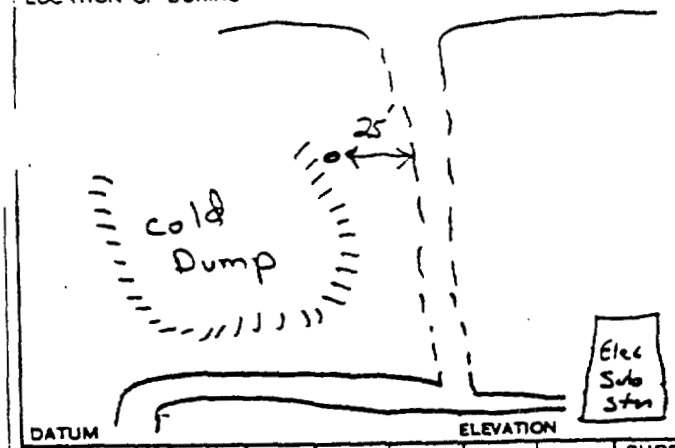
DEPTH BOTTOM OF SCREEN : 13

DEPTH BOTTOM OF SAND PACK : 20

TYPE OF BACKFILL BELOW SAND PACK : [illegible]

DEPTH OF BOREHOLE : 20

LOCATION OF BORING



JOB NO.	CLIENT
10805-410	WVNS

DRILLING METHOD: 4¼" ID HSA

BORING NO. 0803 DSE

SHEET 1 OF 2

SAMPLING METHOD: SS Sampler 24"
ASTM D1586-67

WATER LEVEL	6.9			
TIME	2:30			
DATE	11/6/89			
CASING DEPTH	20			

DRILLING	
START	FINISH
TIME	TIME
10:00	12:30
DATE	DATE
11/6/89	11/6/89

SURFACE CONDITIONS: Sloping, grassy. Dk brown topsoil with gravelly surface.

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH	
SS	24/11	0	1	3/6		0	OPG	3" Moist med brn Sandy SILT (Topsoil) Grades to little sand, 5" (ML) grades to med yellow-brn silty ~~gravel~~ GRAVEL, little sand. (GM)
				6/12		1		
SS	24/10	2	2	5/11		2		3" med brn SILT, some Gravel tr clay. Grades to med yellow-brn dry silty GRAVEL, little sand. (GM)
				22/27		3		
SS	24/22	4	3	8/12		4	(GM)	9" of damp med brn silty GRAVEL some Sand. Grades to 9" med brn SILT, tr Gravel. Grades to dk gray clayey SILT. (ML)
				17/8		5		
SS	24/17	6	4	6/8		6		Med brn wet coarse SAND, ~~ss~~ little silty tr f gravel (SM) Grades to 2" of med brn SILT, tr clay + gravel. (ML)
				11/9		7		
SS	24/19	8	5	2/4		8		Wet med brn SAND + GRAVEL, some Silty tr clay (GM) Grades to 6" med brn SILT, tr clay. (ML)
				11/10		9		
SS	24/19	10	6	4/9		10		2" med brn SILT, Some Sand + Gravel. Grades to 7" med brn SILT, little clay, med brn (ML) Grades to 8" gray f SAND (SP) Grades to gray SILT little clay. WET (ML)
				11/8		11		
SS	24/21	12	7	3/5		12	S/G SAND + GRAVEL UNIT	2" med brn SILT with some c Sand + Gravel. Grades to 14" med brn SILT, some ~~tr~~ clay. Grades to 5" gray f SAND. Wet (SP)
				8/10		13		
SS	24/17	14	8	2/8		14		1" med brn f ~~sandy SAND~~ sandy silt, grades to gray sandy SILT, some clay. (ML)
				13/39		15		
SS	24/17	16	9	10/20		16		Med brn wet SAND + GRAVEL, some Silty wet (GM)
				14/10		17		
SS	24/19	18	10	9/12		18		Wet med brn SAND + GRAVEL some silt (GM) Grades to dk gray clayey SILT, tr m gravel. (ML)
				14/11		19		
						20		

BY [illegible] DATE 11/6/89 CHK'D BY

21 (REV. 11-87)

DAMES & MOORE

LOCATION OF BORING	JOB NO.	CLIENT
	10805-410	WVNS

DRILLING METHOD:

SAMPLING METHOD:

BORING NO. 0803 D SB

SHEET 2 OF 2

					DRILLING START	DRILLING FINISH
WATER LEVEL					TIME	TIME
TIME					10:00	12:30
DATE					DATE	DATE
CASING DEPTH					11/6/89	11/6/89

DATUM ELEVATION

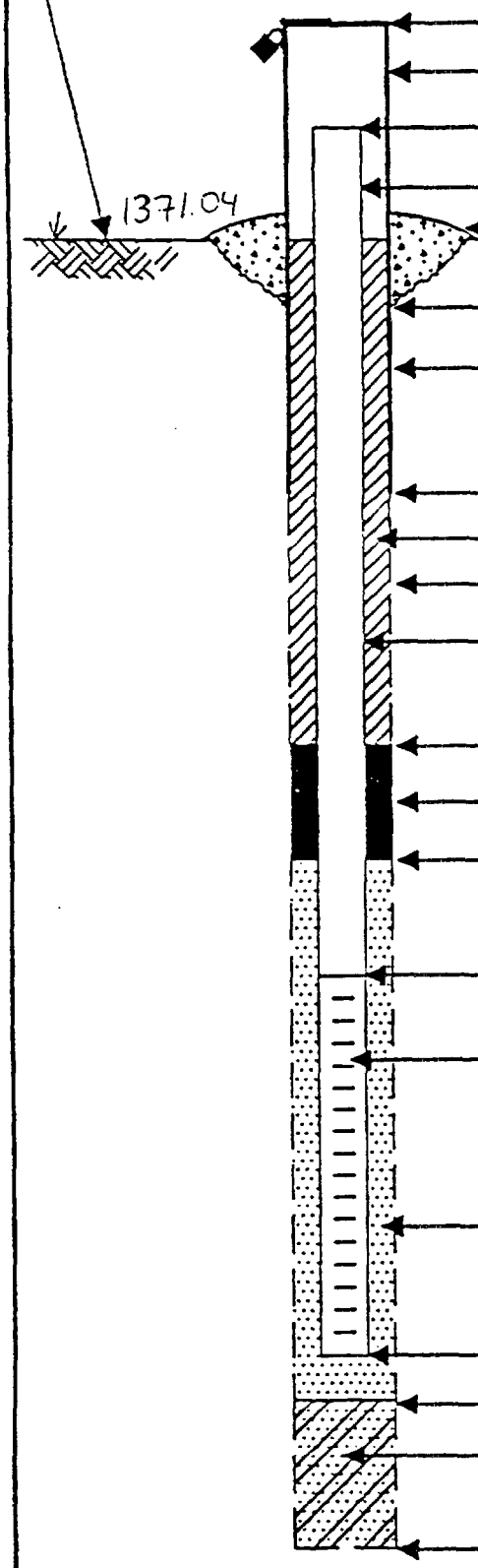
SURFACE CONDITIONS:

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH	
SS	24/22	20	11	4/6		20	TILL	DK gray clayey SILT, tr m gravel (ML)
				12/13		21		
						2		
				--		3		
						4		
						5		
						6		
						7		
						8		
						9		
						0		
						1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						0		

DATE 11/6/89 CHK'D BY

PROJECT : WVDP	LOCATION : West Valley NY	DRILLER : M Brown
PROJECT No. : 10805-410	BORING No. : 0804 DS	DRILLING METHOD : 4¼" ID HSA
ELEVATION :	DATE : 11/3/89	DEVELOPMENT METHOD :
FIELD GEOLOGIST : Francine Cohen		

GROUND ELEVATION :



ELEVATION TOP OF OUTER CASING :

STICK-UP TOP OF OUTER CASING : 2.5

ELEVATION OF TOP OF RISER PIPE :

STICK-UP TOP OF RISER PIPE : 1.9

TYPE OF SURFACE SEAL :

DEPTH OF SURFACE SEAL :

I.D. OF OUTER CASING : 6"

TYPE OF OUTER CASING : pro Casing

DEPTH OF OUTER CASING : 2.3

TYPE OF BACKFILL : [illegible]

BOREHOLE DIAMETER : [illegible]"

I.D. OF RISER PIPE : [illegible]

TYPE OF RISER PIPE : [illegible]

DEPTH OF SEAL : 2.0

TYPE OF SEAL : ¼ round [illegible]

DEPTH OF SAND PACK : 3.0

DEPTH TOP OF SCREEN : 4.0

TYPE OF SCREEN : St. St. [illegible]

SLOT SIZE x LENGTH : 0.010" x 5'

I.D. OF SCREEN : 2"

TYPE OF SAND PACK: #4098 Sand

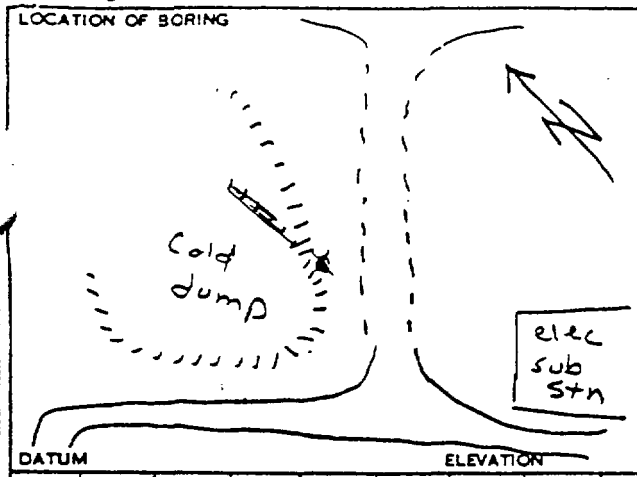
DEPTH BOTTOM OF SCREEN : 9.0

DEPTH BOTTOM OF SAND PACK : 9.5

TYPE OF BACKFILL BELOW SAND PACK : Bentonite Pellets ¼" round

DEPTH OF BOREHOLE : 10

LOCATION OF BORING



DATUM ELEVATION

JOB NO.	CLIENT
10805-410	WVNS

DRILLING METHOD: 4 1/4" ID HSA

BORING NO. 0804 DS

SHEET 1 OF 1

SAMPLING METHOD: SS Sampler 24"
ASTM D1586-67

					DRILLING START	DRILLING FINISH
WATER LEVEL	dry				TIME	TIME
TIME	2:30				1:15	2:15
DATE	11/3/89				DATE	DATE
CASING DEPTH	10				11/3/89	11/3/89

SURFACE CONDITIONS: Sloping, grassy. Dk brown soil with gravelly surface.

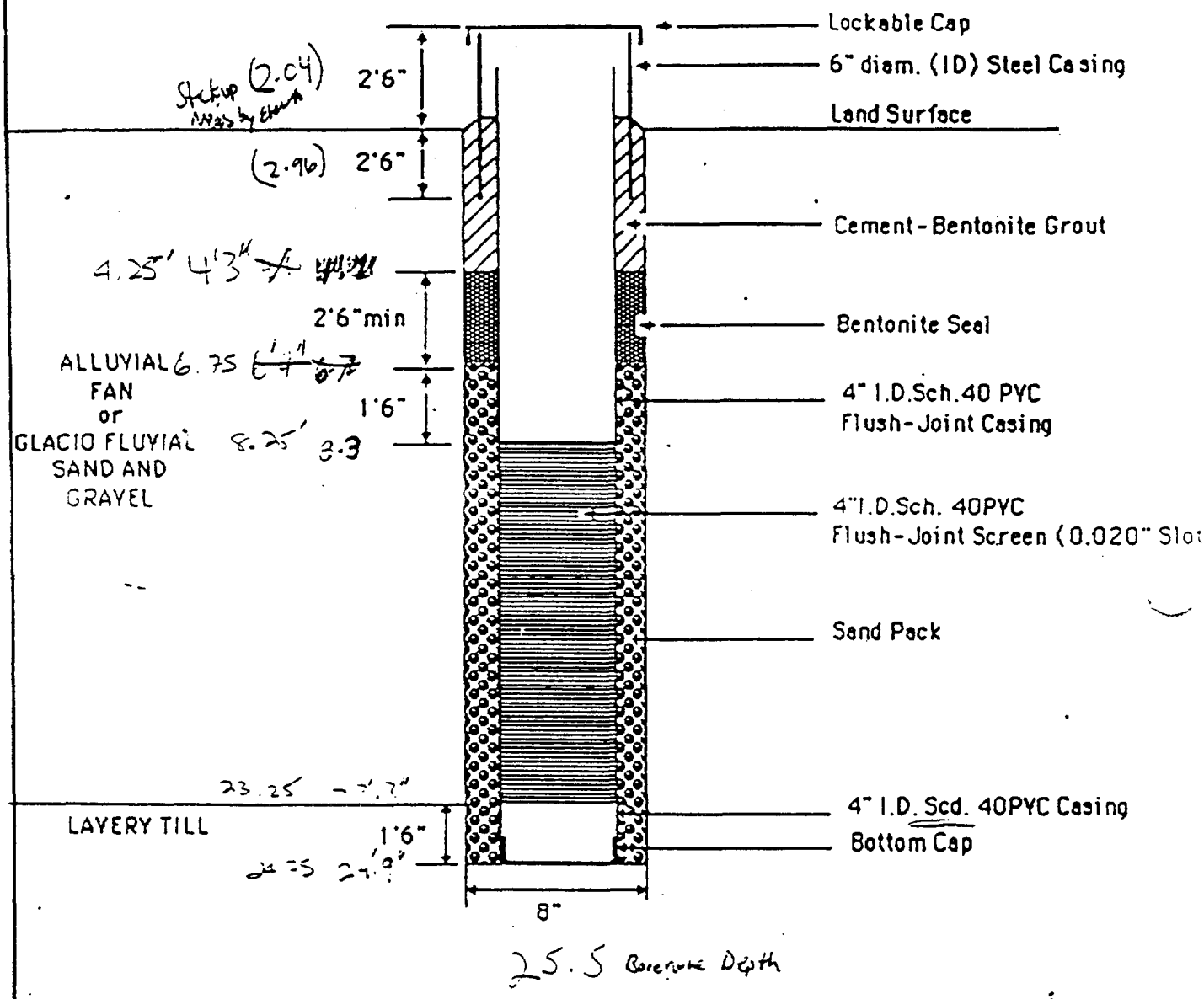
SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH	
SS	24/15	0	1	3/6	ML	0	Top Soil	6" med brn SILT, some Clay. Roots (TOPSOIL) Grades to med brn clayey SILT, tr m ang gravel.
				6/19		1		
SS	24/19	2	2	17/22	GM	2	S/G Unit	3" org lyr Grades to lt brn silty mc GRAVEL, tr clay.
				18/10		3		
SS	24/1	4	3	9/12	GM	4	Sand & Gravel Unit	Wet med brn silty S & G
				10/8		5		
SS	24/1	6	4	6/11		6		Wet med brn silty S+G
				4/5		7		
SS	24/16	8	5	9/6		8		5" med brn Silty S+G. Grades to 8" med brn SILT. Grades to dk gry clayey silt, some clay
				8/9	ML	9	Till	2" med brn silty S+G.
SS	24/16	10	6	4/6		10		4" med brn SILT, some Clay. Grades to dk gry SILT, some clay
				8/12		11		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						0		

Hamburg NY

BY Francine Conn DATE 11/3/89 CHK'D BY

REV. 11-87

B-86-3



NOTE: Wells were developed by pumping with a centrifugal pump. Development of the wells continued until the discharge was generally free of sand and silt sized particles.

SUBJECT TYPICAL MONITORING WELL INSTALLATION	NUMBER FIGURE 2	PAGE 1 OF 1
	PREPARED BY RAPennifill	DATE 4-18-8

SURFACE ELEVATION 1383.45

COORDINATES E 481.357.25
N 893.583.51

BLOW COUNT	SAMPLE NO & TYPE	DEPTH IN FE	ELEV IN FE	SOIL SAMPLE	ROCK CORING	SYMBOL	DESCRIPTIONS
38	1 A	0		◪		ML CL	GRAY SILTY CLAY. TRACE SAND AND FINE GRAVEL.
33	2 A	2		◪			GRADING WITH MORE FINE GRAVEL.
			1380				
22	3 A	4		◪			GRADING TO SOME GRAVEL. LITTLE SAND.
23	4 A	6		◪		CC	4" THICK ORGANIC LAYER (ROOTS) AT 6 FT. BLACK CLAY. SOME SAND. LITTLE GRAVEL. GRAY WITH SOME BROWN MOTTLING. CLAYEY GRAVEL. SOME SAND.
31	5 A	8		◪		ML GM	GRAY SILT. TRACE FINE GRAVEL. SLIGHTLY MOIST. GRADING TO TAN. LITTLE GRAVEL. TRACE FINE SAND.
16	6 A	10		◪		GW	GREENISH GRAY. FINE TO MEDIUM GRAVEL. LITTLE SAND. TRACE SILT. WET TO MOIST.
15	7 A	12		◪			TAN. FINE TO MEDIUM GRAVEL. SOME FINE SAND. TRACE SILT. GRADING TO WET.
			1378				
18	8 A	14		◪			
22	9 A	16		◪			
28	10 A	18		◪			
39	11 A	20		◪		SM	TANNISH BROWN. FINE SAND. SOME SILT. SLIGHTLY MOIST GRADING TO FINE GRAVEL AND SAND. TRACE SILT. WET

(CONTINUED ON NEXT PAGE)

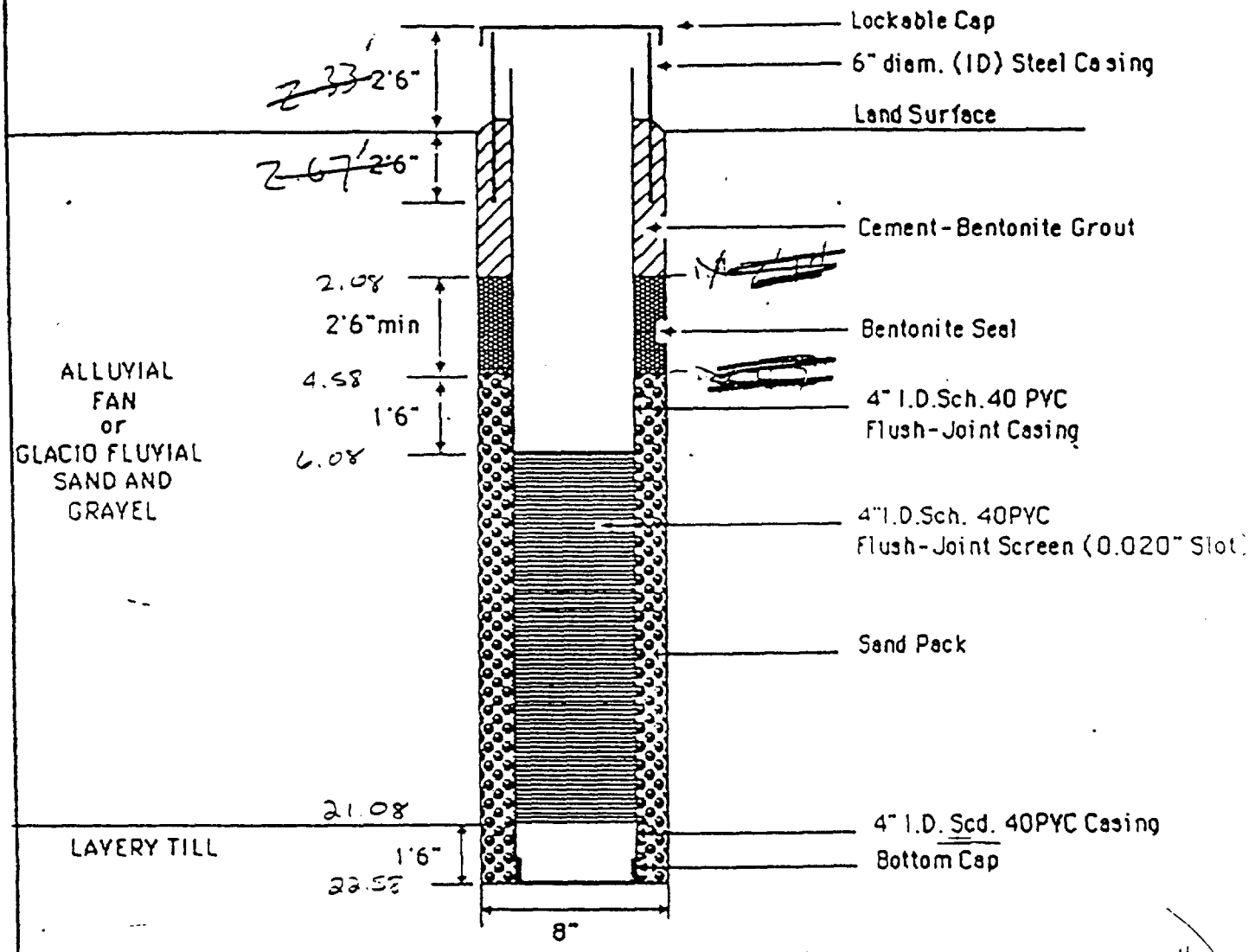
DAMES & MOORE

BLOW COUNT	SAMPLE NO & TYPE	DEPTH IN FEET	ELEV IN FEET	SOIL SAMPLE	ROCK CORING	SYMBOL	DESCRIPTIONS
		20				SM	
38	12 A	22		■		GW GM	TANNISH BROWN. FINE GRAVEL, SAND AND SILT. WET
			1368				
20	13 A	24		■			GRADING TO TAN. FINE SAND. SOME SILT.
						CL ML	GRAY. SILTY CLAY/TILL.
		26					

BORING COMPLETED ON 7/9/86

DAMES & MOORE

B-86-4



assumed bottom 22'7" not known

NOTE: Wells were developed by pumping with a centrifugal pump. Development of the wells continued until the discharge was generally free of sand and silt sized particles.

SUBJECT TYPICAL MONITORING WELL INSTALLATION	NUMBER FIGURE 2	PAGE 1 OF 1
	PREPARED BY RAPennifill	DATE 4-18-8

SURFACE ELEVATION: 1387.5
COORDINATES: E 481,263.74
N 893,367.81

BLOW COUNT	SAMPLE NO & TYPE	DEPTH IN FE	ELEV IN FE	SOIL SAMPLI	ROCK CORING	SYMBOL	DESCRIPTIONS
24	1 A	0		◪		CL ML	LIGHT BROWN SILT, TRACE FINE GRAVEL, SLIGHTL MOIST, GRADING TO GRAY SILTY CLAY, TRACE FINE GRAVEL, DRY, DENSE, VERY STIFF.
23	2 A	2		◪			
30	3 A	4		◪		SP GP	COARSE GRAVEL.
30	4 A	6		◪			MOTTLED REDDISH BROWN FINE TO MEDIUM SAND, SOME GRAVEL, TRACE SILT, SLIGHTLY MOIST TO WET
19	5 A	8	1380	◪			
12	6 A	10		◪		GM SM	FINE SAND AND SILT, LITTLE GRAVEL, MOIST, GRADING TO SAND AND GRAVEL, LITTLE SILT, WET
29	7 A	12		◪		ML CL	LIGHT BROWN SILTY CLAY, SLIGHTLY MOIST, STIFF.
25	8 A	14		◪			
18	9 A	16		◪		SW SP	LIGHT BROWN SILTY CLAY WITH LITTLE FINE GRAVEL, MOIST, GRADING TO WET MEDIUM SAND
12	10 A	18	1378	◪			GRADING WITH FINE SAND
31	11 A	20		◪			MEDIUM SAND, LITTLE SILT, GRADING TO MOIST FINE SAND AND SILT

(CONTINUED ON NEXT PAGE)

DAMES & MOORE

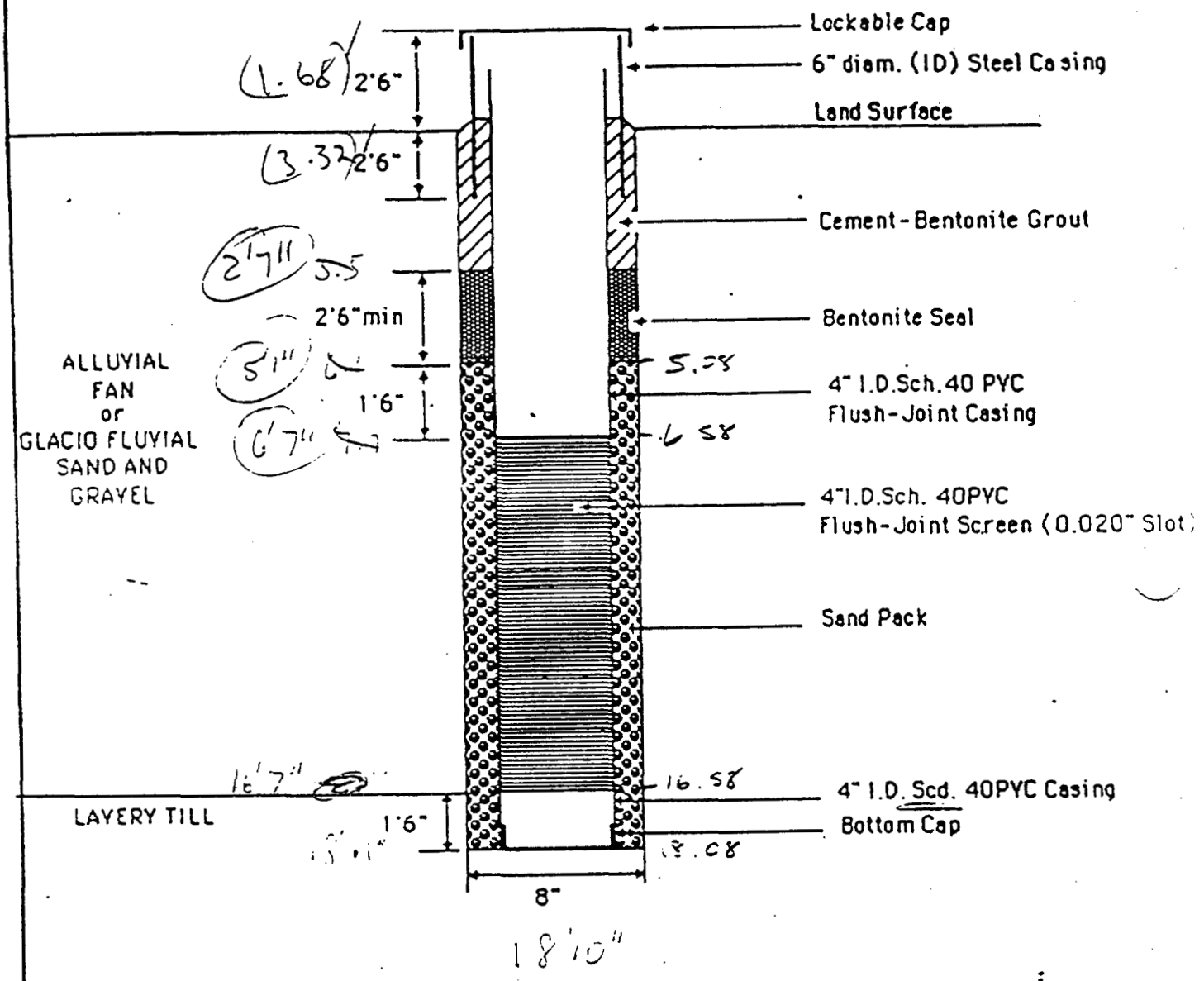
BLOW COUNT	SAMPLE NO & TYPE	DEPTH IN F	ELEV IN F	SOIL SAMPL	ROCK CORIN	SYMBOL	DESCRIPTIONS
		20				SW SP	GRADING TO VET FINE SAND. GRADING WITH COBBLES.
31	12 :A	22		■		CL ML	GRAY SILTY CLAY, LITTLE, GRAVEL, SLIGHTLY MOIST, STIFF.
		24					

BORING COMPLETED ON 7/8/86

-1368

DAMES & MOORE

B-86-12



NOTE: Wells were developed by pumping with a centrifugal pump. Development of the wells continued until the discharge was generally free of sand and silt sized particles.

SUBJECT TYPICAL MONITORING WELL INSTALLATION	NUMBER FIGURE 2	PAGE 1 OF 1
	PREPARED BY RAPennifill	DATE 4-18-8

BORING B-86-12

SURFACE ELEVATION 1366.46

COORDINATES E 481,688.71
N 893,949.14

SAMPLING		DEPTH IN FEET	ELEV IN FEET	SOIL SAMPLING	ROCK CORING	SYMBOL	DESCRIPTIONS
BLOW COUNT	SAMPLE NO & TYPE						
21	1 :A	0		◪		GW SW	BROWN GRAVEL AND SAND, TRACE SILT, MOIST.
17	2 :A			◪			GRADING TO WET
13	3 :A			◪		ML GM	BROWNISH RED GRADING TO GRAY SILT, SOME COARSE GRAVEL, SLIGHTLY MOIST. GRADING WITH SOME FINE GRAVEL.
17	4 :A	5	1360	◪			GRADING TO BROWN FINE SAND, TRACE TO LITTLE SILT, WET.
17	5 :A			◪		SP SM	GRAY FINE SAND, SOME SILT, MOIST.
30	6 :A	10		◪			
28	7 :A			◪		GW SW	GRAY FINE TO MEDIUM GRAVEL AND SAND, WET. GRADING WITH MORE MEDIUM TO COARSE GRAVEL. TRACE SAND AND SILT.
36	8 :A	15		◪			
17	9 :A		1350	◪			GRAY SILTY CLAY/TILL. BORING COMPLETED ON 7/9/86

DAMES & MOORE

80-USGS5 Augered September 25, 1980. Lat 42°27'12", Long 78°39'14". Altitude 1370.88 ft. Log by Todd Miller from records of U.S. Geological Survey.

0-3.0 ft Six inches of black organic topsoil. Sandy gravel with silt, olive brown, poorly sorted. Fine to coarse sand 30-40%, gravel 50-60%, silt 25%. Two-inch layer of fine to medium sand at 2.75 to 3.0 ft. Olive brown, good sorting, trace pebble.

3.0-5.5 Gravel: fine to medium pebbles, olive brown, trace sand, good permeability, damp. At 4 to 5.5 ft, gravel, mostly fine pebbles, some coarse sand 15%, trace silt.

5.5-13.9 Gravelly sand from 5.5 to 6.0 ft. Olive brown, fine to coarse sand 65%, fine pebbles 35%. Good permeability, wet. Sandy gravel from 5.5 to 14.0 ft. Olive brown, sand 25%, gravel 75%. Saturated, loose, fair sorting, subrounded to subangular. Pebbles mostly green siltstones. At 10 ft, sandy gravel with silt, olive gray, fine to medium gravel 65%, sand 20%, silt 15%. Fair to good permeability, saturated. Hit water at 6 ft.

13.9-16.0 Till (Lavery): Top 1 ft oxidized olive brown. Below 15 ft olive gray. Silty matrix with some clay, 20% peb les.

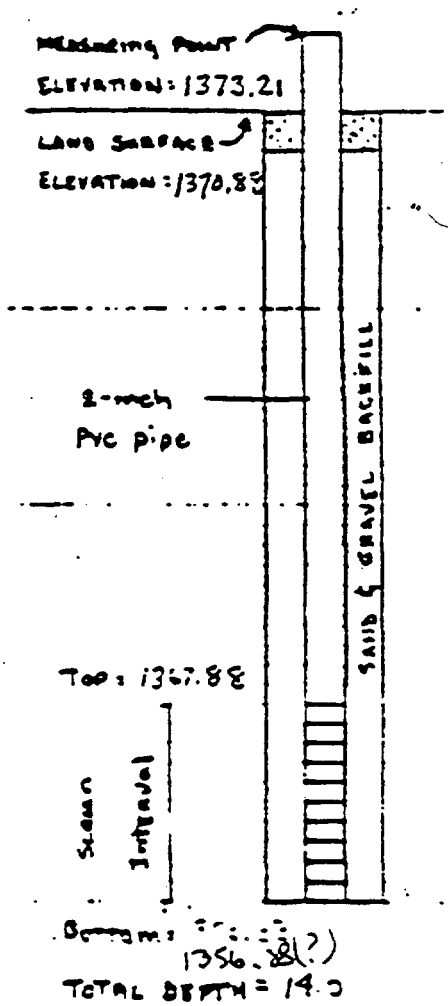


TABLE 12
Geologic Log of Core 80-5
September 25, 1980
Surface Elevation 1371.8 Feet

Depth Below Surface (ft.)	Core Sample Recovery (in.)	Description of Material
0-2	16	6" black organic-rich SILT, trace sand, trace clay. (w/roots) 5" GRADATIONAL 5" yellow-brown f. to c. GRAVEL, some f. to c. sand, little silt
2-4	16	9" olive brown GRAVEL as above 3" f. to m. SAND, trace silt, trace clay. 4" olive brown f. GRAVEL, trace c. sand, trace silt.
4-6	19	16" olive-brown f. GRAVEL, little c. sand 3" olive-brown saturated f. to c. SAND, some f. gravel.
6-8	16	F. GRAVEL, some c. sand, trace clay, trace silt (saturated)
8-10	--	No sample collected
10-12	2	Saturated olive gray GRAVEL, some sand, little silt.
12-14	24	F. to m. GRAVEL, little f. to c. sand, little silt. 1" light brown SILT, some clay
14-16	17	4" SILT, some gravel, little clay 13" SILT, little clay (unweathered olive gray at 14' 11")

Bottom of boring at 16'.
Hole caved in 16' - 14'.
2 3/8" I. D. galvinized 6-slot screen 14' - 3'.
2" I.D. galvinized casing 3 to 2' 4" above land surface
Water sample 80-5-W1 collected after installation of casing.

80-USGS6 Augered September 26, 1980. Lat 42°27'09", Long 78°39'03". Altitude 1378.39 ft. Log by Todd Miller from records of U.S. Geological Survey.

0-1.0 ft Sandy gravel with trace silt. Brown, fine to coarse gravel, subrounded to subangular. Sand 30%, gravel 70%.

1.0-11.3 Fill material: Gray, silt-clay matrix with approximately 20% stones from 2.0 to 2.2 ft. From 2.2 to 6 ft, weathered till, mottled grayish brown. From 6 to 8 ft, weathered till, brown, contains green grass and roots. From 8 to 11 ft, weathered till, olive gray, silty, contains roots, relatively soft, not compact as typical Lavery till. At 11 ft, weathered till, gray-brown, soft.

11.3-14.0 Gravel, with some sand and silt at 11.3 to 13 ft. Olive brown, loose, fine to coarse gravel 0.1 to 3 inch. Large clasts tend to be quartzite. Sand 10%, silt 5%. At 13.0 to 13.8 ft, gravelly silt, olive brown. Gravel 35%, sand 15%, silt 50%-poor permeability. At 13.8 ft to 14.0 ft, sandy gravel, dominantly fine gravel and coarse sand. Loose, good permeability.

14.0-17.3 Silt with some sand, olive brown, soft. Very fine sand 10% from 14.0 to 15.6 ft. Silt with trace of clay, olive brown, grading to olive gray from 15.5 to 17.3 ft. Moist.
Till (Lavery): silt-clay matrix, olive gray, dense, compact, poor permeability.

17.3-18

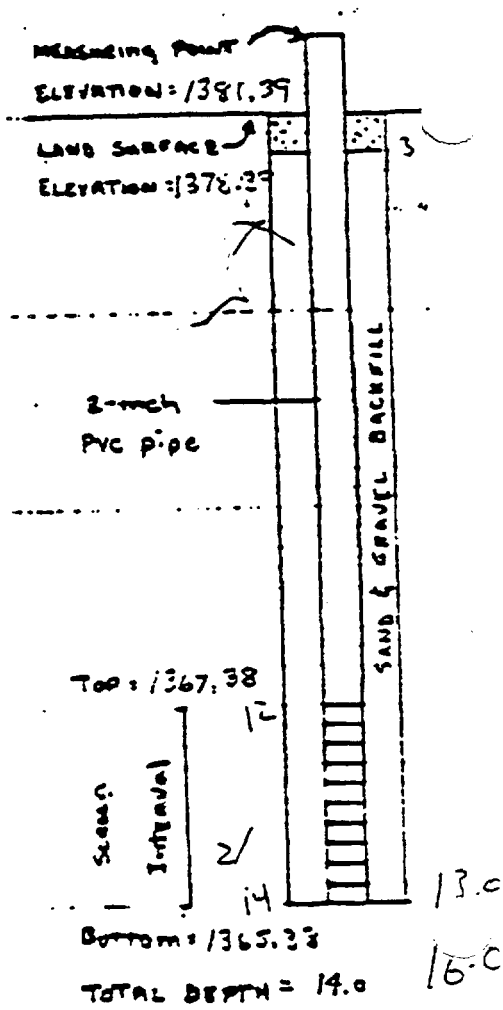


TABLE 13
Geologic Log of Core 80-6
September 26, 1980
Surface Elevation 1379

	Depth Below Surface (ft.)	Core Sample Recovery (in.)	Description of Material
	0-2	13	7" SILT, some or little clay Loose medium gray f. to c. GRAVEL some silt, some sand.
SG	2-4	14	3" loose GRAVEL as above 8" medium dense weathered yellowish reddish-brown GRAVEL as above. 3" olive brown SILT and CLAY.
W	4-6	15	Olive brown SILT and CLAY, trace c. gravel (shale, quartzite)
Till	6-8	6	Dense olive brown SILT and CLAY
	8-10	7	Dense SILT and CLAY as above
	10-12	14	11" olive-gray brown SILT and CLAY 3" olive brown f. to very c. GRAVEL, some sand, little silt
[illegible]	12-14	14	4" SILT, little gravel, little sand Olive-brown GRAVEL and SAND, little silt, trace clay. 2" c. SAND, little silt.
[illegible]	14-16	14	GRAVEL, some sand, some silt Very soft, well-sorted olive-brown SILT, trace sand. 3" SILT, some caly.
UnW Till	16-18	20	7" SILT as above, grading more clay. 4" SILT as above, grading more clay becoming more gray. 9" very stiff olive gray SILT and CLAY.

TABLE 13 (continued).

Bottom of hole at 18'
Bentonite pellets 18' - 14'
2" I.D. 6-slot PVC screen 14' - 12'
2" I.D. PVC pipe 12' - 36" above land surface
Bentonite-sand mixture 12' to land surface